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Public Finance Criteria

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To Our Readers

Standard & Poor's Ratings Services is pleased to present the 2007 edition of Public Finance Criteria, which we hope you will find useful. This updated overview includes criteria developed since the publication of the last edition, as well as criteria revised to reflect events and trends affecting public finance.

Standard & Poor's criteria are extensive and are periodically revised. Our complete criteria are available on Standard & Poor's RatingsDirect, as well as on the Web at www.standardandpoors.com.

Standard & Poor's also regularly publishes its new and revised criteria on RatingsDirect and on the Web, as part of our commitment to provide the most timely and comprehensive public finance ratings information.

William L. Montrone
Managing Director

Contents

I. Introduction

Introduction to Public Finance Criteria 6

II. Cross Sector Criteria

Short-Term Debt 11
Commercial Paper, VRDO, And Self Liquidity 17
Bank Liquidity Facilities 26
Municipal Swaps 29
Debt Derivative Profile Scores 38
Long-Term Municipal Pools 43
Investment Guidelines 49
Investment Agreements for Municipal Revenue Bond Financings 53
Joint Support To Investment Agreements 55
Defeasance 57

III. Tax-Secured Debt

Introduction to Tax-Secured Debt 60
GO Debt 60
Debt Statement Analysis 66
Special Tax Bonds 70
Non Ad Valorem Bonds 75
Lottery Revenue Bonds 76
Special-Purpose Districts 78
State Credit Enhancement Programs 86
Appropriation-Backed Obligations 103
Federal Leases 107
Moral Obligation Bonds 111

IV. General Government Utilities

Water and Sewer Ratings 113
Electric Utility Ratings 121
Solid Waste System Financings 127

V. Transportation

Airport Revenue Bonds 131
Stand-Alone Passenger Facility Charge Debt 136
Airport Multi-Tenant Special Facilities Bonds 139
Port Facilities Revenue Bonds 142
Toll Road and Bridge Revenue Bonds 145
Mass Transit Bonds Secured by Farebox Revenues 149
Parking Revenue Bonds 151

VI. Health Care

Not-for-Profit Health Care 153
Senior Living 162
Physician Groups and Faculty Practice Plans....................169
Human Service Providers....................172

VII. Education and Non-Traditional Not-for-Profits

Higher Education 175
Private Elementary and Secondary Schools 191
Charter Schools 194
Non-Traditional Not-for Profits 200

VIII. Municipal Structured Finance

Introduction to Structured Finance 207
LOC-Backed Municipal Debt 208
Municipal Applications for Jointly Supported Debt 217
Forward Purchase Contracts and 'AAA' Defeased Bonds 223
Secondary-Market Derivative Products 225

IX. Housing

Introduction to Tax-Exempt Housing Bonds....................230
Single-Family Whole Loan Programs....................230
Single-Family Second Mortgage Loans 243
Single Family Mortgage-Backed Securities Programs....................245
Property Improvement Loans 247
FHA Insured Mortgages 250
Ginnie Mae, Fannie Mae, and Freddie Mac Multifamily Securities....................259
Unenhanced Affordable Housing Project Debt 262
Affordable Multifamily Housing Pooled Financings 270
Military Housing Privatizations....................276
Federally Subsidized Housing Programs 281
Public Housing Authority Debt 285
Housing Finance Agencies 290

X. Other Criteria

Bond Insurance 294
Government Investment Pools (GIP) 312
Assessing Construction Risk 323
Pension Fund Credit Enhancement And Related Guarantee Programs 327
Public Pension Funds....................329

Introduction To Public Finance Criteria

Since beginning its credit rating activities in 1916, Standard & Poor's Ratings Services has rated hundreds of thousands of securities issues, corporate and governmental issuers, and structured financings. Standard & Poor's began its ratings activities with the issuance of credit ratings on corporate and government debt issues. Responding to market developments and needs, Standard & Poor's has developed and innovated methodologies and criteria and now assesses the credit quality of, and assigns credit ratings to, financial guarantees, recovery ratings and bank loans, private placements, mortgage-and asset-backed securities, mutual funds, and the ability of insurance companies to pay claims, and assigns market-risk ratings to managed funds.

In 2005, Standard & Poor's published more than 500,000 ratings, including 294,000 new ratings and 260,000 revised ratings. We have issued ratings on debt securities in more than 100 countries. Standard & Poor's rates and monitors developments pertaining to these securities and obligors from operations in 21 countries around the world.

Standard & Poor's believes that over the last century credit ratings have served the U.S. securities markets extremely well, providing an effective and objective tool in the market's evaluation and assessment of credit risk. Standard & Poor's recognizes the valuable role that credit-rating agencies play in the U.S. securities markets and is committed to protecting and enhancing the reputation and future of its credit-ratings business. In this regard, Standard & Poor's takes great care to assure that the market views its credit ratings as highly credible and relevant, and will continue to review its practices, policies, and procedures on an ongoing basis and modify or enhance them, as necessary, to ensure that rigorous analytics, integrity, independence, objectivity, transparency, credibility, and quality continue as fundamental premises of its operations.

Standard & Poor's Role In The Financial Markets

Standard & Poor's is the world's foremost provider of independent credit ratings, indices, risk evaluation, investment research, data and information, and operates under the basic principles of:

- Independence
- Objectivity
- Credibility, and
- Transparency

Standard & Poor's recognition as a rating agency ultimately depends on investors' willingness to accept its judgments. Standard & Poor's believes it is important that all users of its ratings understand how it arrives at its ratings opinions, and it regularly publishes ratings definitions and detailed reports on ratings criteria and methodology.

Standard & Poor's rates more than USD $34 trillion in bonds and other financial obligations of obligors in more than 100 countries. Despite the changing environment, Standard & Poor's core values remain the same-to provide high-quality, objective, value-added analytical information to the world's financial markets.

Credit Ratings

Standard & Poor's began rating the debt of corporate and government issuers nearly 100 years ago. Since then, its credit rating criteria and methodology have grown in sophistication and have kept pace with the introduction of new financial products. For example, Standard & Poor's was the first major rating agency to assess the credit quality of, and assign credit ratings to, the claims-paying ability of insurance companies (1971), financial guarantees (1971), mortgage-backed bonds (1975), mutual funds (1983), and asset-backed securities (1985).

A credit rating is Standard & Poor's opinion of the general creditworthiness of an obligor, or the creditworthiness of an obligor with respect to a particular debt security or other financial obligation, based on relevant risk factors. A rating does not constitute a recommendation to purchase, sell, or hold a particular security. In addition, a rating does not comment on the suitability of an investment for a particular investor.

Standard & Poor's credit ratings and symbols originally applied to debt securities. As described below, Standard & Poor's has developed credit ratings that may apply to an issuer's general creditworthiness or to a specific financial obligation. Standard & Poor's has historically maintained separate and well-established rating scales for long-term and short-term instruments. Over the years, these credit ratings have achieved wide investor acceptance as

easily usable tools for differentiating credit quality, because a Standard & Poor's credit rating is judged by the market to be reliable and credible.

Rating Process

Standard & Poor's provides a rating only when there is adequate information available to form a credible opinion and only after applicable quantitative, qualitative, and legal analyses are performed.

The analytical framework is divided into several categories to ensure salient qualitative and quantitative issues are considered. The rating process is not limited to an examination of various financial measures. Proper assessment of credit quality involves an evaluation of the basic underlying economic strength of the entity, as well as the effectiveness of the governing process to manage performance and address problems. Standard & Poor's assembles a team of analysts with appropriate expertise to review information pertinent to the rating. A lead analyst is responsible for the conduct of the rating process. Several of the members of the analytical team may meet and/or discuss with management of the organization to review, in detail, key factors that have an effect on the rating, including operating and financial plans and management policies. The meeting also helps analysts develop the qualitative assessment of management itself, an important factor in the rating decision.

Following this review and discussion, a rating committee meeting is convened. At the meeting, the committee discusses the lead analyst's recommendation and the pertinent facts supporting the rating. Finally, the committee votes on the recommendation.

The issuer is subsequently notified of the rating and the major considerations supporting it. A rating can be appealed prior to its publication, if meaningful new or additional information is to be presented by the issuer. Obviously, there is no guarantee that any new information will alter the rating committee's decision.

Once a final rating is assigned, it is disseminated to the public via Standard & Poor's free web site (www.standardandpoors.com), through the news media and through Standard & Poor's publications. All initial ratings are assigned and released only by request.

Rating Types

A Standard & Poor's issuer credit rating is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due. It does not apply to any specific financial obligation, as it does not take into account the nature of and provisions of the obligation, its standing in bankruptcy or liquidation, statutory preferences, or the legality and enforceability of the obligation. In addition, it does not take into account the creditworthiness of the guarantors, insurers, or other forms of credit enhancement on the obligation. The issuer credit rating is not a recommendation to purchase, sell or hold a financial obligation issued by an obligor, as it does not comment on market price or suitability for a particular investor.

Issuer credit ratings are based on current information furnished by obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any issuer credit rating and may, on occasion, rely on unaudited financial information. Issuer credit ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances. Issuer credit ratings can be either long-term or short-term. Short-term issuer credit ratings reflect the obligor's creditworthiness over a short-term time horizon, usually one to three years.

Most Public Finance ratings are issue ratings. A Standard & Poor's issue credit rating is a current opinion of the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program. It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation. The issue credit rating is not a recommendation to purchase, sell, or hold a financial obligation, inasmuch as it does not comment as to market price or suitability for a particular investor.

Issue credit ratings are based on current information furnished by the obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any credit rating and may, on occasion, rely on unaudited financial information. Credit ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

Issue credit ratings can be either long-term or short-term. Short-term ratings are generally assigned to those obligations considered short term in the relevant market. In the U.S., for example, that means obligations with an original maturity of no more than 365 days-including commercial paper. Short-term ratings are also used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. The result is a dual rating, in which the short-term ratings

address the put feature, in addition to the usual long-term rating. Medium-term notes are assigned long-term ratings.

A Standard & Poor's Underlying Rating (SPUR) is a rating of the stand-alone capacity of an issue to pay debt service on a credit-enhanced debt issue, without giving effect to the enhancement that applies to it.

Issue and issuer long term ratings are divided into several categories ranging from 'AAA' reflecting the strongest credit quality to 'D' reflecting the lowest. Long-term ratings from 'AA' to 'CCC' may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories.

A Standard & Poor's commercial paper rating is a current assessment of the likelihood of timely payment of debt having an original maturity of no more than 365 days. Ratings are graded into several categories, ranging from 'A' for the highest-quality obligations to 'D' for the lowest.

A Standard & Poor's U.S. municipal note rating reflects the liquidity factors and market access risks unique to notes. Notes due in three years or less will likely receive a note rating. Notes maturing beyond three years will most likely receive a long-term debt rating. The following criteria will be used in making that assessment:

- Amortization schedule-the larger the final maturity relative to other maturities, the more likely it will be treated as a note; and
- Source of payment-the more dependent the issue is on the market for its refinancing, the more likely it will be treated as a note.

Municipal Issue Ratings Definitions

A Standard & Poor's issue credit rating is a current opinion of the creditworthiness of an obligor with respect to a specific financial obligation, a specific class of financial obligations, or a specific financial program. It takes into consideration the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation. The issue credit rating is not a recommendation to purchase, sell, or hold a financial obligation, inasmuch as it does not comment as to market price or suitability for a particular investor.

Issue credit ratings are based on current information furnished by the obligors or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any credit rating and may, on occasion, rely on unaudited financial information. Credit ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

Issue credit ratings can be either long-term or short-term. Short-term ratings are generally assigned to those obligations considered short term in the relevant market. In the U.S., for example, that means obligations with an original maturity of no more than 365 days-including commercial paper. Short-term ratings are also used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. The result is a dual rating, in which the short-term ratings address the put feature, in addition to the usual long-term rating. Medium-term notes are assigned long-term ratings.

Long-Term Issue Credit Ratings

Issue credit ratings are based in varying degrees, on the following considerations:

- Likelihood of payment-capacity and willingness of the obligor to meet its financial commitment on an obligation in accordance with the terms of the obligation;
- Nature of and provisions of the obligation; and
- Protection afforded by, and relative position of, the obligation in the event of bankruptcy, reorganization, or other arrangement under the laws of bankruptcy and other laws affecting creditors' rights.

The issue ratings definitions are expressed in terms of default risk. As such, they pertain to senior obligations of an entity. Junior obligations are typically rated lower than senior obligations, to reflect the lower priority in bankruptcy, as noted above.

AAA

An obligation rated 'AAA' has the highest rating assigned by Standard & Poor's. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.

AA

An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.

A

An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher-rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.

BBB

An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions

or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

BB, B, CCC, CC, and C

Obligations rated 'BB', 'B', 'CCC', 'CC', and 'C' are regarded as having significant speculative characteristics. 'BB' indicates the least degree of speculation and 'C' the highest. While such obligations will likely have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposures to adverse conditions.

BB

An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions, which could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.

B

An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions will likely impair the obligor's capacity or willingness to meet its financial commitment on the obligation.

CCC

An obligation rated 'CCC' is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation.

CC

An obligation rated 'CC' is currently highly vulnerable to nonpayment.

C

The 'C' rating may be used to cover a situation where a bankruptcy petition has been filed or similar action has been taken, but payments on this obligation are being continued.

D

An obligation rated 'D' is in payment default. The 'D' rating category is used when payments on an obligation are not made on the date due even if the applicable grace period has not expired, unless Standard & Poor's believes that such payments will be made during such grace period. The 'D' rating also will be used upon the filing of a bankruptcy petition or the taking of a similar action if payments on an obligation are jeopardized.

Plus (+) or minus (-)

The ratings from 'AA' to 'CCC' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

NR

An issue designated NR is not rated.

Short-Term Issue Credit Ratings

Notes

A Standard & Poor's U.S. municipal note rating reflects the liquidity factors and market access risks unique to notes. Notes due in three years or less will likely receive a note rating. Notes maturing beyond three years will most likely receive a long-term debt rating. The following criteria will be used in making that assessment:

- Amortization schedule-the larger the final maturity relative to other maturities, the more likely it will be treated as a note; and
- Source of payment-the more dependent the issue is on the market for its refinancing, the more likely it will be treated as a note.

Note rating symbols are as follows:

SP-1

Strong capacity to pay principal and interest. An issue determined to possess a very strong capacity to pay debt service is given a plus (+) designation.

SP-2

Satisfactory capacity to pay principal and interest, with some vulnerability to adverse financial and economic changes over the term of the notes.

SP-3

Speculative capacity to pay principal and interest.

Commercial Paper

A Standard & Poor's commercial paper rating is a current assessment of the likelihood of timely payment of debt having an original maturity of no more than 365 days. Ratings are graded into several categories, ranging from 'A' for the highest-quality obligations to 'D' for the lowest. These categories are as follows:

A-1

This designation indicates that the degree of safety regarding timely payment is strong. Those issues determined to possess extremely strong safety characteristics are denoted with a plus sign (+) designation.

A-2

Capacity for timely payment on issues with this designation is satisfactory. However, the relative degree of safety is not as high as for issues designated 'A-1'.

A-3

Issues carrying this designation have an adequate capacity for timely payment. They are, however, more vulnerable to the adverse effects of changes in circumstances than obligations carrying the higher designations.

B

Issues rated 'B' are regarded as having only speculative capacity for timely payment.

C

This rating is assigned to short-term debt obligations with a doubtful capacity for payment.

D

Debt rated 'D' is in payment default. The 'D' rating category is used when interest payments of principal payments are not made on the date due, even if the applicable grace period has not expired, unless Standard & Poor's believes such payments will be made during such grace period.

Dual Ratings

Standard & Poor's assigns "dual" ratings to all debt issues that have a put option or demand feature as part of their structure.

The first rating addresses the likelihood of repayment of principal and interest as due, and the second rating addresses only the demand feature. The long-term debt rating symbols are used for bonds to denote the long-term maturity and the commercial paper rating symbols for the put option (for example, 'AAA/A-1+'). With short-term demand debt, note rating symbols are used with the commercial paper rating symbols (for example, 'SP-1+/A-1+').

CreditWatch And Rating Outlooks

A Standard & Poor's rating evaluates default risk over the life of a debt issue, incorporating an assessment of all future events to the extent they are known or considered likely. But Standard & Poor's also recognizes the potential for future performance to differ from initial expectations. Rating outlooks and CreditWatch listings address this possibility by focusing on the scenarios that could result in a rating change.

CreditWatch highlights potential changes in ratings of bonds, short-term, and other fixed-income securities. Issues appear on CreditWatch when an event or deviation from an expected trend has occurred or is expected and additional information is necessary to take a rating action. Such rating reviews normally are completed within 90 days, unless the outcome of a specific event is pending. A listing does not mean a rating change is inevitable. However, in some cases, it is certain that a rating change will occur and only the magnitude of the change is unclear.

Wherever possible, a range of alternative ratings that could result is shown. CreditWatch is not intended to include all issues under review, and rating changes will occur without the issue appearing on CreditWatch. An issuer cannot automatically appeal a CreditWatch listing, but analysts are sensitive to issuer concerns and the fairness of the process.

A Standard & Poor's rating outlook assesses the potential direction of a long-term credit rating over the intermediate term (typically six months to two years). In determining a rating outlook, consideration is given to any changes in the economic and/or fundamental business conditions.

An outlook is not necessarily a precursor of a rating change or future CreditWatch action:

- Positive means that a rating may be raised,
- Negative means that a rating may be lowered,
- Stable means that a rating is not likely to change,
- Developing means a rating may be raised or lowered.

CreditWatch designations and outlooks may be "positive," which indicates a rating may be raised, or "negative," which indicates a rating may be lowered. "Developing" is used for those unusual situations in which future events are so unclear that the rating potentially may be raised or lowered. "Stable" is the outlook assigned when ratings are not likely to be changed, but should not be confused with expected stability of the company's financial performance. ■

Short-Term Debt

Note Ratings

Short-term debt instruments rated by Standard & Poor's Ratings Services include cash flow notes such as tax and revenue anticipation notes (TRANs), bond anticipation notes (BANs) and cash flow note pools. Note ratings differ from bond ratings in that many long-term credit risks are mitigated by the comparatively short repayment period. Conversely, liquidity factors that enhance note security may not allay long-term credit concerns or provide additional comfort regarding the issuer's ability to pay its debt obligations over the long-term.

A strong liquidity position is a primary determinant in the assignment of a cash flow note rating. There is no exact debt service coverage benchmark that determines a specific rating. Financial and cash management and the quality of the pledged revenue stream, which includes the reliability of the pledged revenue source, are additional factors considered when determining a note rating. Moreover, the quality of financial reports—including audits, issuer constructed historic and projected monthly cash flow statements, and budget projections—are additional credit factors.

Municipal note issues are divided into two major categories requiring different rating approaches: cash flow notes and bond anticipation notes (BANs). Cash flow notes are generally referred to as tax anticipation notes (TANs), revenue anticipation notes (RANs) or tax and revenue anticipation notes (TRANs).

TRANs, TANs and RANs

State and local governments typically issue cash flow notes to address a mismatch between the receipt of revenues and disbursements for ongoing operations. Many issuers receive major revenues unevenly during a fiscal year, while operating expenditures typically follow a level monthly pattern. For example, a school district may receive the bulk of its annual property taxes in June; however, it needs to make salary and benefit expenditures evenly each month. The district may issue cash flow notes to bridge the gap between receipts and disbursements during the period when cash balances are insufficient.

The ratings on cash flow notes—TRANs, TANs, and RANs—rely on:

- The security pledged to retire the notes;
- The notes' legal structure;
- The issuer's historical and projected liquidity position, as reflected by its cash management and budgetary practices;
- The reliability of the issuer's primary revenue sources; and
- The issuer's overall fiscal health.

Structural Analysis

Security

The specific security pledged to retire cash flow notes plays a role in the assignment of a note rating. State and local statutes governing short-term debt issuance and the resolution authorizing issuance of a particular note usually define the security. The security may range from a single tax or general fund revenue pledge, to a full faith and credit GO pledge. Broad unlimited-tax GO pledges are viewed most favorably since all of the issuer's resources are pledged to note repayment. While the pledge of a specific narrow revenue source may be viewed less favorably than a combination of revenue sources, the analysis hinges on the quality and consistency of the revenue in question. In most cases, a narrow but generally reliable single tax pledge can achieve the same rating as a broader full faith and credit GO pledge.

Flow of funds-segregation of pledged revenues

The monthly flow of funds takes on added importance for cash flow notes because of the potential strain on resources required on one maturity date to repay a note. The issuer must ensure that sufficient resources are available to make the note payment at maturity.

The segregation of pledged revenues in separate note repayment accounts prior to note maturity reduces the likelihood that weak budget and financial performance will interfere with full and timely payment of debt service. However, sufficient resources to pay debt service at note maturity—after all expenditures are made—is most critical in the assignment of a high investment-grade note rating.

Pledged revenues typically are segregated by an issuer in its own accounts. In some cases, pledged revenues may be segregated in accounts in the custody of a third party. Accounts held by a third party do not necessarily strengthen a note issue's structure, especially if funding of the account depends on the issuer's timely transfer of funds to the third party. If the issuer does not have sufficient funds to transfer, the third party will not have adequate resources for note repayment.

Standard & Poor's does not consider debt service segregation structures as substitutes for the sound liquidity and financial positions of issuers. Standard & Poor's considers debt repayment capacity to be enhanced only marginally by the early segregation of pledged revenues. However, the early prepayment and segregation of pledged revenues for note repayment can be an indication of the cash flow strength of an issuer and, in that respect, may affect a note rating.

Fiscal and paying agent requirements

Issuers sometimes use fiscal agents and paying agents to hold and invest funds or to hold securities pledged and segregated for debt service of TRANs. The fiscal agents and paying agents are introduced into a TRAN structure to provide comfort to investors that pledged funds and securities segregated for note repayment are not subject to potential investment risk, even in the event of insolvency of the issuer.

Standard & Poor's does not view the segregation of pledged funds and/or securities with a paying or fiscal agent as enhancement of a TRAN rating, provision of additional security, or protection from investment losses because funds segregated for TRAN debt service repayment and held by a fiscal or paying agent continue to be general funds of the issuer. Thus, Standard & Poor's does not consider the use of a paying agent or fiscal agent to be a mitigating factor that reduces credit risk for a TRAN

Table 1 **Sample Projected Cash Flow Fiscal July–December**

General fund ($000)	July	August	September	October	November	December
Beginning balances ($)	25,647	30,360	21,661	14,260	12,529	5,270
Receipts property taxes	0	0	0	2,192	694	36,676
Other taxes	674	423	1,123	425	709	953
Licenses/permits	1,854	3,549	4,517	4,376	3,027	3,536
Interest income	109	72	1,199	50	80	1,504
Intergovernmental	17,853	11,343	11,245	16,157	10,649	14,613
Other revenue	20,7991	4,724	3,870	4,748	2,604	2,880
Note proceeds	35,000	0	0	0	0	0
Total	76,289	20,111	21,954	27,948	17,763	60,162
Disbursements						
General government	5,921	2,895	3,192	3,324	2,305	2,780
Public safety	14,957	6,298	6,267	6,579	6,673	6,604
Health & sanitation	14,879	8,296	8,973	9,316	5,534	6,444
Human services	16,724	10,285	10,000	9,503	9,826	9,300
Education	752	491	426	503	501	488
Other expenses	18,3431	545	496	454	182	317
Note repayment	0	0	0	0	0	17,905
Total	71,576	28,810	29,354	29,679	25,021	43,838
Ending balance	30,360	21,661	14,261	12,529	5,271	21,594
Available resources						
Special revenue funds	7,653	8,120	8,530	7,742	8,760	9,120
Ending balance including special revenue funds	38,013	29,781	22,791	20,271	14,031	30,714

Includes accrued monies. Monthly general fund ending balance covers December segregation 2.2x and May segregation 1.6x Monthly ending balance including special revenue funds covers December segregation 2.7x and May segregation 2.1x.

issue in the event of an issuer's investment losses or even its insolvency.

Liquidity Analysis

Cash flow statement analysis

The credibility and reliability of cash flow projections, which forecast the amount and timing of the receipt of resources pledged to note repayment, are critical to the assignment of a note rating. Cash flow statements, together with the underlying assumptions upon which the projections are based, provide a foundation for analysis of the reliability and quality of the revenue stream available to pay note debt service. Standard & Poor's analyzes both historic and projected monthly cash flows in the context of the issuer's operating budget, financial statements, cash management practices, pledged revenue segregation, and against prior forecasts. Standard & Poor's analyzes cash flow projections for prior fiscal years, which outline changes in receipt and disbursement patterns over time *(see tables 1a and 1b for an example of a monthly cash flow statement)*. The trend of cash flow borrowing is also important if increases exceed the rate of budget growth, as it may signal deterioration in overall liquidity or a growing structural imbalance.

The sensitivity of the pledged revenue stream to adverse external events over time is evaluated. A note with a property tax pledge usually has a more stable revenue stream than one secured by sales or income taxes. Revenues derived from other governmental entities, such as state aid funding, could exhibit historical volatility, especially in the face of an adverse budget climate, that could make timing and amount of future receipts uncertain. To the extent issuers are reliant on external funding sources with some historical volatility, other revenue sources or cash reserves could serve as mediating factors if those revenues are pledged to debt repayment.

Cash flow projections that are in line with historical projections provide comfort regarding the reliability of an issuer's cash flow projections. Cash flow results that differ significantly from prior-year projections

Table 2 **Sample Projected Cash Flow Fiscal January–June**

General fund ($000)	January	February	March	April	May	June	Total
Beginning balances ($)	21,595	15,766	6,777	6,399	36,595	11,976	25,647
Receipts property taxes	0	168	0	36,185	0	9,604	85,519
Other taxes	450	690	4,016	1,400	151	1,056	12,070
Licenses/permits	4,214	3,473	3,618	4,056	3,626	1,179	41,025
Interest income	128	69	1,562	124	66	2,569	7,532
Intergovernmental	11,679	8,673	13,391	11,265	13,332	5,116	145,316
Other revenue	2,214	3,569	2,410	2,598	2,484	283	53,183
Note proceeds	0	0	0	0	0	0	35,000
Total	18,685	16,642	24,997	55,628	19,659	19,807	379,645
Disbursements							
General government	2,514	2,672	2,861	2,673	2,854	1,473	35,464
Public safety	6,848	6,325	6,531	6,356	6,727	1,823	81,988
Health and sanitation	5,050	6,517	5,596	5,950	5,419	31	82,005
Human services	9,427	9,474	9,628	9,701	9,549	1,929	115,346
Education	459	450	491	502	459	158	5,680
Other expenses	216	193	268	250	223	50	21,537
Note repayment	0	0	0	0	19,047	0	36,952
Total	24,514	25,631	25,375	25,432	44,278	5,464	378,972
Ending balance	15,766	6,777	6,399	36,595	11,9762	26,3191	26,319
Available resources							
Special revenue funds	8,871	7,954	7,320	8,516	9,416	10,987	10,987
Ending balance including special revenue funds	24,637	14,731	13,719	45,111	21,3923	37,306	37,306

Includes accrued monies. Monthly general fund ending balance covers December segregation 2.2x and May segregation 1.6x. Monthly ending balance including special revenue funds covers December segregation 2.7x and May segregation 2.1x.

may be an indication of historically volatile revenues or inconsistent management forecasting abilities and can raise questions about the issuer's ability to manage its cash and, therefore, pay note debt service fully and in a timely manner.

The basis for Standard & Poor's analysis of an issuer's ability to forecast its cash flows reliably will be the issuer's own historic accuracy, when available. For statements of monthly operating cash flows, Standard & Poor's will conduct variance analyses of current fiscal cash flow projections submitted in the prior year against actual year-to-date and projected current year-end cash flow performance.

This "actual-versus-projected" performance will then be compared to the most recent fiscal year projected cash flows currently being submitted in conjunction with TRAN rating requests for the ensuing fiscal year. For issuers with projected coverage of less than 1.25x at maturity, a detailed analysis and explanation of the reliability of projected cash flows will be important. Moreover, scrutiny will be applied to issuers who present cash flows that project higher than 1.25x coverage but whose coverage falls to less than 1.25x if actual historic variance is applied to the projected fiscal cash flows. In these cases, Standard & Poor's, in the ratings process, will conduct a thorough review of what caused the variance between projected and actual cash flows and debt service coverage levels.

While this analysis of variance is an important starting point for the rating process, variance and coverage levels alone will not dictate the rating. The actual underlying causes of changing patterns in the monthly cash flows and year-end cash balances is always a central feature to the rating process. In some cases, one-time events that cause a variance in cash flows may not reflect potential future risk or a lack of management foresight, whereas in other cases, such variances may either reflect volatile revenues in general, or problems with forecasting or financial management overall.

Calculating debt service coverage

Standard & Poor's begins the analysis of debt service coverage by measuring debt service due against available cash balances at month's end, after normal operating expenditures are made and without the inclusion of proceeds from additional note borrowings. For debt repayment or early segregation of pledged revenues during the first days of the month, coverage will be measured against the prior month's ending balance. Revenues received early in the month will be considered when detail is available and substantiated. When monies are due late in the month, coverage is measured against the current month's ending balance.

Alternative liquidity

Alternative liquidity refers to unrestricted cash and liquid investments that may not be legally pledged toward TRAN repayment, but are available to be temporarily used—or borrowed through interfund borrowing and repaid to the fund—for that purpose at the discretion of the issuer. In the case of a GO TRAN pledge, all resources of an issuer are available to repay the note. However, when the pledge is more restricted—such as California TRANs, which are secured by current year general fund monies—alternative liquidity can provide comfort to noteholders if an unforeseen event occurs that could affect TRAN repayment. Such events could include delays in the receipt of state aid or an unexpected increase in operating expenditures. The utilization of alternative liquidity to pay TRAN debt service, however, is extremely rare.

Generally, sources of alternative liquidity considered assessible by Standard & Poor's include any funds not subject to legal or other restrictions and not expected to be needed for any other purpose prior to TRAN maturity. Standard & Poor's requires documentation from the TRAN issuer expressly stating the sources of alternative liquidity and the amounts that are expected to be available at TRAN maturity or segregation dates to make up any deficiency in the note repayment account. Typical sources of alternative liquidity include operating funds accumulated in a reserve fund to finance future capital projects or deposit of proceeds from an asset sale or other unrestricted one-time revenues into a reserve fund for unspecified future uses.

Sources of alternative liquidity not considered by Standard & Poor's as available include bond or other debt proceeds and monies held in trust or in a fiduciary capacity. While legal under certain circumstances, Standard & Poor's does not view reliance on these sources of funds for alternate liquidity as enhancing short-term credit quality. It is important to emphasize that alternative liquidity sources are not a substitute for very strong financial and liquidity fundamentals.

Alternative liquidity will rarely, if ever, impact a TRAN rating in cases where the issuer has poor credit fundamentals. Lower-rated TRANs—'SP-2' and 'SP-3'—have fundamental credit weaknesses that generally cannot be offset with alternative liquidity. For example, a TRAN issuer that expects to incur a general fund operating deficit and which does not have sufficient year-end general fund cash reserves to fully compensate for its expected deficit generally cannot strengthen its TRAN rating with alternative liquidity to reach an 'SP-1' or 'SP-1+' rating.

Cash Flow Note Pools

Multiple-issuer TRAN pools are most often structured as several obligations of various participants—meaning that each participant is responsible for only its own debt service payments. Standard & Poor's bases a TRAN pool rating on either an overcollateralization or weak-link approach. Under the weak-link approach, the TRAN pool rating is equivalent to the creditworthiness of the weakest issuer in the pool—the so-called "weak link." Under the overcollateralization approach, the TRAN pool rating is assigned according to a blended approach of individual issuer quality and common debt service reserve provisions that overcollateralize the total borrowing. In addition, note pool ratings include analysis of a pool's structural and legal strengths, and liquidity facilities, such as state and county guarantees and intercepts that provide for repayment of note debt service. TRAN pool ratings also may be enhanced through liquidity facilities—such as irrevocable bank letters of credit—and bond insurance that unconditionally transfers the credit risk to a higher-rated entity.

Weak-link approach

The weak-link approach assesses each participant's ability to repay its share of the TRAN pool financing. Each participant is evaluated and assigned a TRAN rating as if it were issuing TRANs on a stand-alone basis and not as a member of a pooled financing. Because full and timely debt service repayment is reflected in the rating, this approach results in TRAN pool ratings that are only as strong as the creditworthiness of the weakest participant regardless of the relative size of that issuer's participation in the financing. Where all participants are strong enough to be rated at least 'SP-1' individually, the pool rating assigned is 'SP-1'. In another example, where one pool participant is rated 'SP-1', and the rest of the participants are rated 'SP-1+', the rating assigned to the pool would be 'SP-1'. The 'SP-1' rating based on the creditworthiness of the weakest issuer would be assigned regardless of the magnitude of borrowing by the weakest participant.

Overcollateralization approach

The overcollateralization approach allows issuers to achieve strong TRAN pool ratings even if a wide disparity of credit quality exists among the participants, including, in some cases, noninvestment-grade issuers. This approach also allows TRAN pools comprising very small issuers to achieve higher ratings through structural enhancement.

A common debt service reserve that overcollateralizes the total borrowing results in higher ratings without issuer reliance on a third party to guarantee 100% of principal and interest payments. Cash reserves, a surety bond, or other forms of financial guarantee provide the extra security reflected in the higher rating. While each participant's obligation to repay only its share of the total borrowing remains unchanged, all reserves must be available for note payment on shortfalls from any participant.

Standard & Poor's determines the common debt service reserve level necessary to address the principal portion of a pool that would be rated lower than the desired pool rating. The establishment of the reserve level begins with analysis of the pool's underlying credit quality. The pool participants are segregated into four credit quality categories correlating to 'SP-1+', 'SP-1', 'SP-2', and 'SP-3'. The availability of statutory protections, intergovernmental aid distributions, and institutionalized financial practices will determine the depth of analysis on the individual pool participants. Many pools require a full cash flow analysis of each participant.

Standard & Poor's identifies those pool participants rated lower the desired rating on the entire pool. Please refer to Standard & Poor's criteria for

Example: Reserve Pool Levels

To illustrate the basic approach to establishing a pool's reserve level (see table 3), consider a $100 million pool. The desired rating is 'SP-1+', and total principal due comprises 65% 'SP-1+', 25% 'SP-1', 7% 'SP-2', and 3% 'SP-3'. Reserves are necessary only for 35% of principal, or that portion of the pool below 'SP-1+'. The level of reserves for each portion of principal below 'SP-1+' is calculated according to the ratios displayed in the table. Reserves to raise the 'SP-1' portion to 'SP-1+' are set at 20% of the 'SP-1' principal, or 5% of the total pool (20% of 25%). Reserves for the 'SP-2' portion are set at 25% of the 'SP-2' principal, or 1.75% of the total pool (25% of 7%). Reserves for the 'SP-3' portion are set at 35% of the 'SP-3' principal, or 1.05% of the total pool (35% of 3%). As a result, total reserves necessary to achieve an 'SP-1+' rating for the pool financing are 8% of $100 million, or $8 million. This reserve level is determined by adding the total of 5% + 1.75% + 1.05%.

Alternatively, consider a $100 million pool comprising 10% 'SP-1+', 40% 'SP-1', 35% 'SP-2', and 15% 'SP-3'. The rating desired is 'SP-1'. Reserves are needed to cover only the portion of the pool below 'SP-1' or 50% of the par amount. Using the ratios shown in the table will yield reserve levels of 20% for the 'SP-2' portion, or 7% of total principal (20% of 35%); plus 30% of the 'SP-3' portion, or 4.5% of total principal (30% of 15%). Total reserves required to achieve the desired 'SP-1' rating are 12% or $12 million, the sum of 7% + 4.5%.

rating TANs and TRANs for detail on the analysis of the individual cash flows. Once that principal portion is determined, the reserve level needed to overcollateralize to the desired rating level is established according to standard requirements. Reserve levels for 'SP-1+' rated pools have ranged between 8%-20%, reflecting the underlying credit quality of the participants or other structural enhancements

Pool Structure

As with stand-alone cash flow note ratings, Standard & Poor's evaluates the legal security, the lien position, and the flow of funds, including the segregation of pledged revenues into separate debt service repayment accounts for each participant. In addition, for cash flow note pool ratings, Standard & Poor's confirms that all participants are required to make full repayment of principal and interest prior to the maturity date of the note pool itself. In the case of note pools, it is important that segregated pledged revenues are held in accounts under the custody of a third party.

Similar to stand-alone cash flow note ratings, when repayment accounts are held with a third party paying or fiscal agent, Standard & Poor's also confirms that the legal documents insulate the issue from paying agent or fiscal agent risk. All investments, including Guaranteed Investment Contracts, are restricted to maturities that mature no later than the maturity date of the TRANs.

A common approach to investing note proceeds and repayment amounts is to place the money in a guaranteed investment contract—or GIC. These instruments offer the investor a guaranteed return on the amount invested at a time certain. Please refer to Standard & Poor's investment guidelines for information on permitted investments.

Bond Anticipation Notes

Bond anticipation notes (BANs) are generally used as an interim financing vehicle for capital projects. BAN debt service is typically repaid with bond proceeds, which requires the issuer to access the capital markets. Standard & Poor's assumes that most investment-grade issuers have access to the public credit markets to sell bonds to retire BANs and the BAN ratings reflect that assumption. Borderline investment-grade credits or those on CreditWatch or with negative outlooks, however, are not assumed to have ready market access and the BAN rating assigned may reflect those risks.

Table 3 **TRAN Pool Reserve Requirements (%)**

	—Pool rating—		
Participant rating	SP-2	SP-1	SP-1+
SP-3	25	30	35
SP-2		20	25
SP-1			20

When assigning a rating to BANs, Standard & Poor's will consider these factors:

- The issuer's fundamental credit strengths, as reflected in its bond rating; and
- The issuer's demonstrated experience in the public credit markets, including frequency of its debt issuance and the historical demand for its paper.

In all cases, regardless of other strengths, the legal authority to refinance the notes with long term debt or cash must be in place prior BAN issuance. In addition, the issuing entity must carry a Standard & Poor's long-term bond rating, an indication of market access, to secure a BAN rating.

BANs are rated based on an approach that blends the issuer's fundamental credit factors with likely access to the public credit markets to issue debt. The approach emphasizes the issuer's long-term bond rating as a measure of both these factors. Issuers with healthy. stable long-term bond ratings and the appropriate authorization to issue additional long-term debt can ususally achieve a high BAN rating.

In most cases, BAN issuance takes place within the context of a well-managed capital plan with particular timing constraints for long-term debt issuance; therefore, BAN issuance does not in and of itself pose a long-term credit concern. In some cases, however, BAN proceeds may be used to fund ongoing expenses unrelated to capital outlay or to finance accumulated deficits. Issuers who use BAN proceeds as the first step in a plan to ultimately bond out these non-capital costs are often experiencing fiscal stress and, possibly, the first stages of long-and short-term credit deterioration. In such instances, BAN issuance may be an indication of potential pressure on the issuer's long-term rating and, in occasions of significant fiscal stress, lack of ready access to long-term capital markets to repay outstanding BANs. In such instances, credit concern could be reflected in a lower short-term BAN and, ultimately, long-term bond rating.

Market access

In certain cases, issuers with lower investment grade bond ratings but ample demand for their paper and market experience may achieve high investment grade BAN ratings. For example, a very active issuer in the long-term credit markets, due to a sizable ongoing capital program or other factors, may exhibit long-term credit risks reflected in a long-term rating that may not necessarily curtail demand for that debt in the public markets. The key factors in such circumstances is the frequency of long-term debt issuance and predictability of

market demand. Since the maturity of a BAN is significantly shorter than a series of bonds, the credit risk of a downgrade that would deny an issuer access to the market to issue bonds to retire BANs is significantly reduced, short of BAN issuance for non-capital costs which might actually be a sign of long-term distress.

Cash liquidity

A last factor that can support a high BAN rating is the availability of cash reserves sufficient to repay BAN issuance in case long-term debt cannot or is not issued, providing sufficient cash to repay BANs at maturity without the need to access the long-term capital markets. Such instances are rare, however, given that issuers with sufficient cash reserves on hand to pay off short-term debt would generally also exhibit healthy long-term credit characteristics and, by default, ability to issue long-term debt on demand. In such scenarios, though, adequate comfort should be achieved the sufficient cash would be in place at the time of BAN maturity, and use of cash for repayment should not significantly impact operations. Availability of cash, however, where other credit factors are weak does not on its own guarantee a high BAN rating. ■

Documentation Requirements

The following note documentation requirements are intended as general guidelines. Standard & Poor's will request additional information when appropriate. Supporting information will vary depending on the nature of the particular financing. For example, documentation for cash flow notes issued in anticipation of property taxes should include relevant tax collection data.

For cash flow notes and BANs:

- Offering memorandum or official statement;
- Note indenture or resolution;
- Audits for two years; and
- Current and proposed budgets.

For cash flow notes only:

- Cash flow statements, including cash based receipts and disbursements (see example);
- Current projection through note maturity;
- Historical projections and actual results (when available);
- Documentation of resources in other funds available for note repayment;
- Fiscal and paying agent agreement, if applicable;
- Investment agreement, if applicable; and
- Legal opinion.

Commercial Paper, VRDO, And Self-Liquidity

Standard & Poor's Ratings Services Public Finance department rates the commercial paper (CP) programs and variable rate demand obligations (VRDOs) of governmental entities and nonprofit organizations (including colleges, universities, and hospitals). CP program ratings can be based on the issuer's creditworthiness or a third-party credit facility. Issuers in all sectors are increasingly issuing VRDOs and other types of variable rate debt, such as auction rate and index bonds. These issuers seek to lower their borrowing costs as they encounter a significant difference between short- and long-term tax-exempt interest rates. Also, the efficient pricing of derivative products by broker-dealers, such as interest rate swaps, has also impacted issuer's willingness to enter the short-term debt markets. Interest rate swaps in particular can potentially lock in interest rate savings to issuers that choose to synthetically fix interest rates on VRDOs. Issuers can also use swaps to lower fixed debt service costs by converting fixed rate debt into variable rate debt.

Standard & Poor's typically rates the tender obligations on VRDOs based on third-party liquidity facilities, such as LOCs and standby bond purchase agreements (SBPAs), although some highly capitalized issuers are increasing issuing "unenhanced" VRDOs, where tender obligations on the debt are supported by the issuer's own liquidity sources.

Issuers have the option of using their own assets to provide liquidity support as a substitute for traditional liquidity facilities both for CP programs or VRDO tender obligations. An issuer may also choose to use its own liquid assets in combination with liquidity facilities to provide support for liquidity demands. An issuer's assets and other forms of liquidity must be sufficient, liquid and creditworthy enough to meet all payment obligations on time and in full. For VRDOs, self-liquidity must involve at least 100% backup of outstanding principal and interest through a combination of the issuer's assets or credit facilities. Sources to back unenhanced CP programs do not have to account for 100% of CP

authorized since ratings reflect the issuer's ongoing ability to provide funds to meet maturing CP. Also, the issuer does not have to provide sources that are rated equivalent to the CP rating. This is not the case, however, with VRDOs. The distinguishing factor between unenhanced CP and VRDOs is the issuer's control over the timing of payment events. CP programs have predictable maturity schedules, whereas VRDOs are subject to tenders at the option of the bondholders at any time. The unpredictable nature of VRDO tenders necessitates a more conservative approach towards the quality and sufficiency of liquidity reserves for VRDOs. Therefore, short-term ratings on VRDOs will reflect the lowest-rated liquidity sources backing the tender obligation.

Issuers that elect to issue unenhanced CP or VRDOs and back these obligations with their own liquid assets rather than a credit facility provided by a rated entity, must undergo a formal Liquidity Assessment review by Standard & Poor's *(see Self Liquidity)*.

Extendible Commercial Paper

Extendible commercial paper is almost identical to traditional commercial paper, with one major difference: the issuer can choose to extend the maturity date of the CP beyond the initial maturity date of one to 270 days from issuance. Extendible CP allow an issuer to cover the liquidity risk of a failed or potential failed remarketing of its paper and avoid default by exercising its option to extend the maturity date, thus precluding a need for liquidity. Extendible CP is rated the same as traditional CP. The rating does not address the likelihood of extension—only payment in accordance with terms. An extension does not constitute a default of the paper.

Extendible CP Extension Period

Standard & Poor's does not have specific extension period requirements for rating extendible CP. The extension period for each individual extendible CP financing will vary on a case-by-case basis. The question is: how much time does an issuer need to arrange financing to retire extendible CP? The amount of time required will depend, in large part, upon the overall credit strength of the issuer with a track record of market access. A higher-rated issuer is less likely to be denied access to the CP market than a lower rated entity. Since the vast majority of traditional CP issuers and likely ECN issuers in public finance are major market players *(such as states, major counties, cities, universities, hospitals, utilities and housing agencies)* and rated at least 'A', denial of market access is remote. At the time of the ECP issuance, borrowers should have taken all needed steps to put long term financing in place, in order to ensure a smooth take out of the CP at the end of the extension period.

Partially enhanced CP programs

Issuers may provide partial enhancement of CP programs by providing a credit facility for payment of CP principal only. In most partially enhanced structures, the issuer pledges to cover interest only and repay the enhancer bank for CP principal draws. If the issuer has secured a bank facility as partial credit replacement, and is pledging its own credit for interest only, Standard & Poor's will rate the CP based on a weak-link approach, using the lower of the bank's short-term rating or the issuer's short-term rating equivalent. The reason for this is due to the fact that both principal and interest of CP must be paid upon maturity and neither the bank nor the issuer is obligated to pay both components. If, however, the issuer is pledging its own credit support as a secondary source of payment for CP principal, Standard & Poor's can rate the CP program based on the issuer's short-term rating equivalent, irrespective of the credit bank's rating because the issuer is ultimately obligated to repay both principal and interest upon CP maturity.

If a partially enhanced CP program rating is ultimately based on the bank's short-term rating, all conditions of the LOC backed CP criteria discussed above will apply. If the CP program rating is to be based on the issuer's short-term rating equivalent, all conditions of the unenhanced CP criteria should be met as described above. Additionally, if the issuer is serving as a source of payment for CP principal, Standard & Poor's will look to see that the credit facility and bond documents meet Standard & Poor's criteria for "confirming" LOCs *(see "Confirmation LOC Rating Criteria" section of "Public Finance Criteria: LOC-Backed Municipal Debt")*.

Commercial Paper

Evaluation of an issuer's commercial paper (CP) reflects Standard & Poor's opinion of the issuer's fundamental credit quality. The analytical approach is virtually identical to the one followed in assigning a long-term credit rating, and there is a strong link between the short-term and long-term rating systems.

Indeed, the time horizon for CP ratings is not a function of the typical 30-day life of a commercial-paper note, the 270-day maximum maturity for the most common type of commercial paper in the U.S., or even the one-to-three-year tenor typically used to determine which instrument gets a short-term rating in the first place.

To achieve an 'A-1+' CP rating, the obligor's credit quality should be at least the equivalent of an 'AA-' long-term rating. Similarly, for CP to be rated

'A-1', the long-term credit rating would need to be at least 'A-'. When an obligor has multiple lien positions, Standard & Poor's will look to the long-term rating on the intended takeout financing to evaluate the correlation between the short-and long-term ratings. For example, if an obligor issues subordinate lien CP but intends to ultimately retire the CP using senior lien debt, it is the long-term rating on the senior lien debt that will determine the short-term rating. *(See chart "Correlation Of CP Ratings With Long-Term Credit Ratings").*

Conversely, knowing the long-term rating will not fully determine a CP rating, considering the overlap in rating categories. However, the range of possibilities is always narrow. To the extent that one of two CP ratings might be assigned at a given level of long-term credit quality *(e.g., if the long-term rating is 'A'),* overall strength of the credit within the rating category is the main consideration. For example, a marginal 'A' category credit likely would have its commercial paper rated 'A-2', whereas a stronger 'A' category will likely receive an 'A-1'.

Backup Policies

Standard & Poor's deems it prudent for obligors that issue commercial paper to make arrangements in advance for alternative sources of liquidity. This alternative, backup liquidity protects an obligor from defaulting if they are unable to roll over their maturing paper with new notes, because of a shrinking overall CP market or investor concerns about the obligor that might make CP investors reluctant to extend additional credit to the obligor. Many developments affecting a single obligor or group of obligors—including bad economic conditions, a lawsuit, management changes, a rating change—could make commercial-paper investors flee the credit.

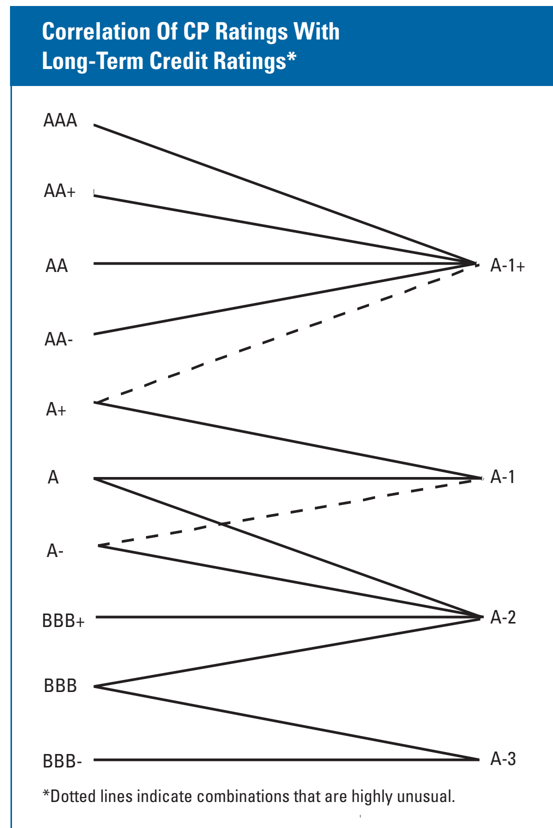
Given the size of the CP market, backup facilities could not be relied on with a high degree of confidence in the event of widespread disruption. A general disruption of CP markets could be a highly volatile scenario, under which most bank lines would represent unreliable claims on whatever cash would be made available through the banking system to support the market. Standard & Poor's neither anticipates that such a scenario is likely to develop, nor assumes that it never will.

The norm for public finance obligors is 1x coverage of outstanding CP with excess liquid assets or bank facilities in an amount that equals all such paper outstanding providing the backup support. Under some exceptional circumstances, Standard & Poor's will assign a strong short-term rating with coverage of less-than 1x, if the obligor has a long-term rating of 'AA-' or higher, and can demonstrate through some combination of their own resources or alternative bank facilities, that they will always have the capacity to cover all CP as it matures, including in the event of a call on the liquid assets of the obligor. In these cases, it is possible that Standard & Poor's will assign a strong short-term rating with coverage levels in the range of, but no lower than, 50%-to-75% of CP outstanding as long as they have 1x coverage of all maturing CP. Determinants in the acceptable level of coverage of CP are the planned use of CP proceeds and intended takeout financing. Standard & Poor's will generally look for relatively higher coverage ratios if the purpose of the CP issue is to finance operations and to manage intra-year cash flows. Higher coverage levels will also be expected when the issuer intends to retire the CP with its own cash. Coverage can be lower when the obligor intends to issue long-term debt to retire outstanding CP.

Available cash or marketable securities are ideal to provide backup, although it will likely be necessary to "haircut" their apparent value to account for potential fluctuation in value. Marketability of liquid assets is also critical. The vast majority of commercial paper issuers rely on bank facilities (lines of credit) for alternative liquidity.

This high standard for back-up liquidity has provided a sense of security to the commercial-paper

Correlation Of CP Ratings With Long-Term Credit Ratings*



*Dotted lines indicate combinations that are highly unusual.

market—even though backup facilities are far from a guarantee that liquidity will, in the end, be available. For example, an obligor could be denied funds if its banks invoked "material adverse change" clauses. Alternatively, an obligor with insufficient liquidity might draw down its credit line to fund other cash needs, leaving less-than-full coverage of paper outstanding, or issue paper beyond the expiration date of its lines.

Obligors rated 'A-1+' can provide 50%-75% coverage of CP outstanding, once again, if the issuer can demonstrate they always have the capacity to cover CP as it matures. In practice, this may be hard to demonstrate on an ongoing basis, especially for an issuer that is an active user of commercial paper and with numerous maturity dates. The exact amount is determined by the issuer's overall credit strength and its access to capital markets. Current credit quality is an important consideration in two respects. It indicates:

- The different likelihood of the issuer's ever losing access to funding in the commercial-paper market; and
- The timeframe presumed necessary to arrange funding should the obligor lose access. A higher-rated entity is less likely to encounter financial reverses of significance and—in the event of a general contraction of the commercial-paper market—the higher-rated credit would be less likely to lose investors. In fact, higher-rated obligors could actually be net beneficiaries of a flight to quality.

Information Requirements For Liquidity Evaluation

- A letter requesting a Standard & Poor's variable-rate debt rating indicating that the issuer intends to use its assets for liquidity support.
- A copy of the current investment policies. (Please include policies on repurchase agreements, hedging transactions [including use of options and/or futures contracts], and leveraging of assets.)
- A list of securities approved for purchase according to asset type, credit quality, maturity, and sector.
- The range of weighted average maturities of assets for each month during the past three years.
- The end-of-month asset balances for the three previous years.
- Documented written liquidation procedures detailing the steps to be taken to provide same-day funds to cover a failed commercial paper remarketing or tendered VRDO (see sample liquidation letter).
- A legal opinion verifying the issuer's legal ability to use its own assets for VRDO/commercial paper liquidity support, if necessary.

Note: Monthly surveillance requirements include submission of monthly asset reports and notification of changes in investment policies, operating procedures and personnel managing the assets. The market and par value, security identifier (CUSIP number), and security rating (if applicable) should be provided for each security in the monthly assets report.

Issuers Can Provide Self-Liquidity

Creditworthy municipalities and nongovernmental organizations with good liquidity and a strong investment management function can use their own assets to provide liquidity support for commercial paper (CP) programs and variable rate demand obligations (VRDO) Rather than relying on external dedicated bank facilities, these issuers demonstrate they have both sufficient fixed income investments and the policies and procedures necessary to cover either outstanding commercial paper or variable rate demand obligations. The rating process involves an assessment of the quality and sufficiency of investments that would be used to cover the variable rate debt or commercial paper and the issuer's demonstration that they have adequate policies and procedures in place to act as a bank facility would under the same circumstances. Therefore an issuer should demonstrate that it could liquidate sufficient investments and cash when necessary under the bond documents in order to meet either a remarketing failure of commercial paper or an optional put for variable rate demand obligations.

Standard & Poor's Ratings Services will evaluate an organization or municipality's fixed income investments that can be used to support short-term ratings if the issuer's assets are sufficient, liquid, and creditworthy to meet all debt obligations on a full and timely basis. Because the ability to access sufficient moneys when necessary is not related to bank performance, commercial paper ratings and any short-term ratings assigned to variable rate demand bonds, are thus tied to the issuer's long-term credit rating, rather than to external bank liquidity support. *(See chart, "Correlation Of CP Ratings With Long-Term Credit Ratings).*

Self-Liquidity For Commercial Paper And VRDOs

Commercial paper ratings are a function of market access and long term credit quality, the rating on the commercial paper reflects the market access ability of the issuer to either take out the financing with long-term paper or new commercial paper notes. In general, commercial paper is more predictable and flexible than variable rate demand obligations, because it is the issuer who decides on the maturity of the commercial paper. Therefore, while there is remarketing risk, the issuer itself manages the remarketing risk. On the day that remarketing proceeds must be settled, however, the issuer will still need to have sufficient, liquid funds on hand to cover any potential remarketing failure.

Standard & Poor's looks for an issuer to have on hand sufficient liquid resources, in any combination of revolving credit agreements or liquid fixed income investments available, to cover the amount of the commercial paper outstanding, as well as the ability to cover up to 270 days of interest. Please refer to the commercial paper criteria for more detail on requirements.

Because the investments may be called on to meet market events, such as a failed CP rollover or a VRDO tender, using these investments should not impair an issuer's ability to meet ongoing operating expenses. Therefore issuers who provide self-liquidity should generally have a high level of liquidity available for debt and operations. While an 'A' category issuer could provide self liquidity for CP and variable rate demand obligations, most issuers who will be able to provide self liquidity will likely be rated in the 'AA' category or 'AAA'.

Standard & Poor's will evaluate an issuer's ability to provide self-liquidity through an assessment of investment management policies and practices, and (2) an analysis of the fixed income portfolio. Some institutions, such as heavily endowed colleges and universities may be able to demonstrate overwhelming coverage of commercial paper or VRDOs with treasury securities and cash alone. If their portfolios are sufficiently large, or the amount of debt being covered is very small, the analysis of the fixed income portfolio is narrower in scope.

However, even in cases where the entire portfolio does not need to be evaluated, Standard & Poor's still evaluates the capacity of management to provide self liquidity and still asks for a liquidity procedures letter to indicate that the cash and high quality fixed income securities can be available when needed and to identify the steps that the institution will take to meet its obligations. Standard & Poor's expects issuers to demonstrate their capacity and willingness to make short-term debt payments by submitting a detailed written liquidation plan. The procedures letter should conform to the timing in the legal documents such as when the institution or municipality receives notice that there is a shortfall and when the funds are due to the paying agent or tender agent. The letter should also identify the individuals who are responsible for these steps.

In an evaluation of management's capacity, Standard & Poor's asks the institutions themselves and not their financial advisors or underwriters to prepare the procedures letter. Additional documentation such as operating cash flows and investment balances available for operations throughout the year may be necessary, depending on the nature of cash flow for the issuers. Ultimately, Standard & Poor's will evaluate whether the issuer's long and short-term credit quality is sufficiently robust to withstand a call on its assets pledged for liquidity purposes.

An issuer may also choose to use a combination of its own assets and third-party liquidity (for example, a bank liquidity facility) to provide liquidity support. Strong lines that more closely resemble standby bond purchase agreements may be used to reduce the amount of available assets to cover maturing CP or VRDOs and still allow the issuer to pledge its own self-liquidity. In cases where a strong line is being used to substitute for self-liquidity, Standard & Poor's will evaluate the strength of the line. Weak lines, which include looser events of termination, have historically been used to cover commercial paper programs, and because of the predictable nature of commercial paper, Standard & Poor's accepts weak external liquidity facilities as a source of backup for maturing commercial paper if they are dedicated to the program.

Variable rate demand bonds, however, carry an element of unpredictability because investors can choose to put their bonds. In these cases, weak lines

Exhibit A

Information Requirements For Liquidity Evaluation

- A letter requesting Standard & Poor's to conduct a "liquidity assessment".
- A copy of the current investment policies. (Including policies on hedging transactions, [including use of options and/or futures contracts] and leveraging of assets).
- Current portfolio holdings report of assets identified for liquidity support with the information listed in point #7 (please see below).
- A list of fixed income securities approved for purchase according to asset type, credit quality, maturity, and sector.
- The weighted average maturities and/or durations for the fixed income assets for each month during the past three years.
- Documented written liquidation procedures detailing the steps to be taken to provide same-day funds to cover a failed CP remarketing or tendered VRDOs *(*see sample liquidation letter—Exhibit 3).
- Monthly surveillance requirements include submission of monthly asset reports and notification of changes in investment policies, operating procedures, and personnel managing the assets. The market and par values, security identifier (CUSIP number), and security specific ratings (Standard & Poor's ratings if applicable) should be provided for each security in the monthly assets report.

Note: Verification of the issuer's legal ability to use its own assets for liquidity support may be necessary (i.e. legal opinions or statutory proof in the case of state and local governments).

might not be an acceptable substitute for self-liquidity and the presence of the line may not reduce the issuer's liquidity on a dollar per dollar basis. Standard & Poor's will evaluate lines if requested to do so, and strong lines that more closely resemble standby bond purchase agreements, even if they are not part of the bond transaction, may be used to reduce an issuer's self liquidity.

Asset-To-Debt Coverage Requirements

An issuer must ensure, on an ongoing basis, that its available assets (whether they are cash and fixed income investments or dedicated liquidity facilities) are sufficient, safe, and liquid enough to meet at least 100% of maturing CP or the full amount of a potential VRDO tender. The 100% requirement provides a minimum of 1x coverage of debt by available assets and assumes assets are available in the event of a failed remarketing or optional tender. In cases where a combination of an issuer's own assets and bank liquidity facilities (provided they are strong enough to provide support for the program) provide liquidity support, the minimum coverage requirement remains 1x.

When evaluating fixed income investments in a portfolio, Standard & Poor's uses different coverage levels of different types of investments to take into account the nature of the specific assets available and the speed with which the assets can be liquidated without significant market losses. An issuer providing self-liquidity must indicate its willingness to sell assets in a down market and incur a potential loss if Standard & Poor's is to be comfortable with their ability to provide self-liquidity.

When an issuer chooses to use its own assets, the amount of assets necessary to cover maturing CP or a potential VRDO tender depends upon the asset's credit quality, volatility, and weighted average maturity. Generally, the lower the credit quality of the fixed income security, the longer the weighted average

Exhibit B

Portfolio Surveillance Information	
Recipient:	Sender/Contact:
Telephone #:	Liquidity provider:
Monthly Portfolio Surveillance Information	Name of portfolios
Date of portfolio	Market value (millions) of fixed income portion
Par/Face value (millions) of fixed income portion	Total value (millions) of equity holdings and other assets
Monthly total return	Weighted average maturity
Effective duration	Net asset value (per share if available)
Credit Quality—Standard & Poor's ratings (%) (Please indicate if other NRSRO ratings are used)	
AAA	BB
AA	CCC
A	N.R
BBB	
Portfolio Breakdown (%) of the Fixed Income Holdings Sector type with market value and percentages (suggested categories.)	
U.S. Treasury	Corporate bonds
Agency discount notes	Asset-backed securities
Agency mortgage-backed securities	Collateralized Mortgage Obligations
Repurchase agreements	Municipal notes
Commercial paper	Cash/Other MMFs
Certificates of Deposit	Other
Corporate notes	Total should equal to 100%
Leverage (Please indicate the type of leverage used and the percentage)	
Maturity breakdown (%)	5-10 Years
0-1 Years	10-15 Years
1-3 Years	15-25 Years
3-5 Years	25 & Over
Total outstanding debt covered by self liquidity (millions):	
Commercial paper	Maximum daily and weekly modes
VRDNs	Asset to debt coverage
Other	

maturity, and the greater the volatility and market risk of the assets, then the higher the coverage requirement such as 1.50 for investment grade corporate notes becomes. Logically, the reverse holds true. As the asset's weighted average maturity and market risk declines and credit quality increases, the lower the asset coverage requirement. Generally, Standard & Poor's will discount U.S. Treasury debt obligations and highly rated money market funds at a ratio of 1:10 and will apply higher discount ratios of 1:20 and above for all other securities.

The discount ratio is also a function of how frequently an issuer plans to have assets valued in the market. While monthly valuations for high quality assets such as U.S. Treasuries may be adequate, daily or weekly valuations are recommended for

Sample Liquidation Letter

Standard & Poor's Corporation
Public Finance Department
55 Water Street
New York, New York 10041

Dear Standard & Poor's,

In connection with the $xx million "Issuer" variable-rate demand obligation bonds series 200x, "Issuer" (the "Guarantor") is guaranteeing the payment of the purchase price of any of these bonds that are tendered for purchase and not remarketed. The Guarantor has requested that Standard & Poor's provide its short-term ratings for these bonds, as based on the credit and liquidity of the Guarantor. The purpose of this letter ("Liquidation Letter") is (i) to specify the available sources of the Guarantor for payment of purchase price on the bonds in the event of a failed remarketing; (ii) to provide contact information for officials of the Guarantor responsible for activating procedures to provide required funding to the Transfer Agent or Trustee to cover the purchase price of bonds subject to a failed remarketing, and (iii) to outline specific procedures that would be followed in the event of a failed remarketing.

Sources "Issuer" as Guarantor would have available in the event of a failed remarketing on the bonds.

As summarized below, the "Issuer" has a number of potential sources of funds in which, as Guarantor on the bonds, it would access in order to respond to a failed remarketing event for the bonds. In the event of a failed remarketing, the "Issuer" would access the source of funds most favorable to it at the time of any failed remarketing. Among the sources of funds available to the "Issuer" are the following:

- Liquidation of General Fund investments: The "Issuer" could elect to liquidate investments held in its General Fund in order to meet any failed remarketing funding requirement on the bonds. At Dec. 31, 2000, the General Fund approximated $1.3 billion in value and consisted of a diversified portfolio of publicly traded equity and fixed-income investments in addition to illiquid alternative investments. The "Issuer" maintains cash and liquid assets at [NAME OF CUSTODIAL BANK], which acts as our custodial bank for all "Issuer" investments not held by a bond trustee or invested in an external commingled pool. Four senior staff the within Treasury department plus the "Issuer's" chief financial officer are authorized to direct [NAME OF CUSTODIAL BANK] in securities transactions and/or the wiring of funds.
- Use of reverse repos: Rather than actually sell investments of our General Fund in the event of a failed remarketing on the bonds, the "Issuer" would most likely set up a reverse repo of government or agency securities from its investment funds in order to raise cash in the short term. The "Issuer" has completed reverse repos from time to time over the past few years and has agreements in place to do them again, if necessary. Four senior staff within the Treasury department are authorized to initiate reverse repo transactions with our banks.

The "Issuer" agrees to notify Standard & Poor's in the future if these sources of potential funding are unavailable to meet any failed remarketing of the bonds, or if new funds or sources of liquidity are substituted as sources to meet the funding of the purchase price on the bonds in the event of a failed remarketing.

Principal officials of the Guarantor responsible for meeting failed remarketing funding requirements of the bonds.

[NAMES]
[E-MAIL ADDRESSES]
[TELEPHONE NUMBERS]
[FAX NUMBERS]

Summary of specific procedures in the event of a failed remarketing.

The bonds may be remarketed by the Remarketing Agent in a number of potential modes ranging from one day to seven days, to a short-term period of any number of days up to 180 days under which there are optional or mandatory tender provisions for the bondholder that would require purchase of the bonds by the Guarantor in the event of a failed remarketing of the bonds. Summarized below are the specified procedures for the meeting the funding requirements of a failed remarketing of the bonds under various modes:

assets that have greater volatility due to poor credit quality and longer maturity. Market valuation periods greater than weekly will lead to larger discount factors for most assets. Standard & Poor's also needs to understand the actions an issuer will take if the valuation falls short of expected level. Once collateral levels and valuation periods are determined, including these requirements in the legal debt documents will be viewed positively in the assignment of ratings.

What Are Available Assets?

Available assets are defined as cash and fixed-income investments that are not needed to meet daily operating needs. Should an issuer need to liquidate its assets to cover a failed commercial paper rollover or VRDO tender, the reduction in the issuer's liquidity position should not impair the issuer's ongoing ability to meet its daily cash flow needs, including the payment of long-term debt obligations. In short, the liquidation and use of

Sample Liquidation Letter (continued)

Daily period mode. Optional tender date of one day.
To be completed by

- 10:00am–Holder delivers optional tender notice to Tender Agent
- 10:15am–Tender Agent notifies Guarantor, Trustee, and Remarketing Agent of receipt of notice
- 12:00 noon–Remarketing Agent notifies Tender Agent of bonds remarketed and registration instructions
- 12:30pm–Tender Agent notifies Guarantor and Trustee of purchase price and projected additional funding amount
- 1:15pm–Remarketing Agent and Guarantor, if necessary, deliver monies to Tender Agent to be applied for purchase of tendered bonds
- 1:30pm–If necessary, Tender Agent notifies Guarantor of additional funding amount
- 4:30pm–If necessary, Guarantor shall deliver additional funding amount to Tender Agent

Weekly period mode. Optional tender ("OTD") of seven days.
To be completed by

- 4:00pm–Holder delivers optional tender notice to Tender Agent. OTD of six days.
- 12.00pm–Tender Agent notifies Guarantor, Trustees, and Remarketing Agent of receipt of notice. OTD of one business day.
- 4:00pm–Remarketing Agent notifies Tender Agent of bonds remarketed and registration instructions.

Optional tender day. To be completed by

- 10:00am–Holder delivers bonds to Tender Agent; Tender Agent notifies Guarantor and Trustee of purchase price and projected additional funding amount
- 12:00pm–Tender Agent makes available to Remarketing Agent new bonds for redelivery
- 1:15pm–Remarketing Agent and Guarantor, if necessary, deliver monies to Tender Agent to be applied for purchase of tendered bonds
- 1:30pm–If necessary, Tender Agent notifies Guarantor of additional funding amount
- 4:30pm–If necessary, Guarantor shall deliver additional funding amount to Tender Agent

Short-term period. Mandatory tender date.
To be completed by

- 10:00am–Holder delivers bonds to Tender Agent
- 12:00pm–Remarketing Agent notifies Tender Agent of bonds remarketed and registration instructions
- 12:30pm–Tender Agent notifies Trustees of purchase price and projected additional funding amount
- 1:15pm–Remarketing Agent, if necessary, deliver monies to Tender Agent to be applied for purchase of tendered bonds
- 1:30pm–If necessary, Tender Agent notifies Trustees of additional funding amount
- 4:30pm–If necessary, Trustees shall deliver additional funding amount to Tender Agent

If you have questions regarding any of the above, please contact me. Thank you.

Sincerely,

[NAME]
["ISSUER"]

investments should not result in a liquidity crisis for the institution or municipality. Therefore, assets available for liquidity support must be above and beyond the assets needed to meet its daily ongoing obligations. Issuers should not have to delay the payment of obligations in the event of asset liquidation to meet tenders. In light of the cyclical nature of many portfolios Standard & Poor's analysis will start at the historically lowest asset point during the year to determine the level of excess liquidity available to the obligor (Since many obligors do not have "excess" liquidity, only a select group of highly creditworthy, and liquid, obligors are able to use their own assets to support their variable-rate debt.

What types of assets are eligible for liquidity support?

The bulk of the assets intended for liquidity-supported programs include investment-grade fixed-income securities that are highly liquid and have a low-market-risk profile. Examples are highly rated short-term securities (securities rated 'A-1+' or 'A-1' that mature in one year or less) or long-term paper of equivalent credit quality such as U.S. governments and agencies, 'AAA', 'AA', or 'A' Standard & Poor's rated fixed-income securities. Longer-maturing assets (one year or greater) are eligible for inclusion, but coverage requirements will be higher. Equities will not be counted toward liquidity requirements. All securities should be marked-to-market frequently (at least monthly) and depending on price volatility daily valuations may be recommended. Monthly surveillance asset reports (Exhibit B) to be submitted to Standard & Poor's will include the market and par values of each security, the security identifier (CUSIP number), and the security's rating, if applicable. In addition to the types of assets eligible to be used for liquidity support, an issuer must ensure that it has the legal authority to use its own assets for liquidity support. In some cases, state constitutions or state and local statutes may not permit an issuer to use its own assets for liquidity support. Standard & Poor's may require a legal opinion if necessary from the appropriate counsel—whether it is bond counsel, a state attorney general, or other legal representative—as to an issuer's legal authority to use its own assets for liquidity support.

Exhibit A outlines the information issuers submit to initiate a portfolio evaluation for a liquidity assessment. If Standard & Poor's has already evaluated their investment portfolio, no further action is required. Issuers that have complex investment portfolios may be referred to Standard & Poor's Fund Services Group for liquidity evaluation and ongoing surveillance requirements indicated in Exhibit B. However, the liquidity review and surveillance requirements are substantially the same. Issuers must be prepared to discuss the portfolio's ongoing management and surveillance.

Asset management and documentation requirements

The ability of an issuer's investment management team to liquidate assets or raise cash on a same day basis (if necessary) are key factors in the evaluation of an issuer's ability to provide its own liquidity support. Very specific written liquidation procedures are required and should detail:

- Persons responsible for executing the asset liquidation;
- The sequence of steps that must be undertaken by all parties to effect liquidation (including any third parties such as the tender or paying agents acting on the issuer's behalf); If particular investments, such as fedwire securities, are custodied securities must be liquidated by a certain time to qualify for same day monies, these deadlines should be identified in the liquidation procedures letter;
- The timing of notifications to the appropriate parties to ensure that sufficient funds are available to pay CP and VRDO investors on a same-day basis, if necessary.

The liquidation procedures must mirror timing requirements specified in CP resolutions and VRDO trust indentures for full and timely payment of debt service. The chain of events to liquidate assets will be evaluated. The evaluation starts with a bond trustee's receipt of a tender notice from a bondholder or the stop issuance order executed by the CP issuing and paying agent to an issuer's broker-dealer. The chain of events ends with the deposit of liquidated assets in immediately available funds, with the tender or paying agent to pay the purchase price of tendered bonds or maturing CP. The investment management team will be evaluated based on its documented procedures to provide the required funds by the end of the day that the trade is initiated. This liquidation letter, (See sample letter) should be updated annually and should be prepared by the institution or municipality rather than by a financial advisor or underwriter.

Capable monitoring, frequency of portfolio valuation and oversight are vital to a successful program. An obligor's success or failure in providing self-liquidity depends on their ability and willingness to take on these proactive roles.

Liquidation letter

Each issuer of unenhanced VRDOs will be asked to provide a letter addressed to Standard & Poor's describing its liquidation procedures in detail with the major players named and their roles defined. The procedures described by the letter must indicate a strong likelihood of same-day liquidation.

The acceptability of the obligor's proposed liquidation mechanics, especially with regard to timing, will be based on Standard & Poor's follow-up investigation into the procedures described by the letter. The chain of events—starting with the bond trustee's sell order to the obligor's broker-dealer account representative and ending with the deposit of liquidation proceeds in immediately available funds with the tender or paying agent to pay the purchase price of tendered bonds—will be scrutinized for its ability to generate the required cash by the end of the day that the trade is initiated.

Among the factors that will be considered in analyzing the obligor's proposed liquidation procedures are the number of steps and parties in the liquidation process, a reasonable time frame in which to accomplish the liquidation, the experience level of the parties involved, whether the party holding the securities has direct access to FedWire, and the FedWire closing time.

The credibility of the obligor's management on the issue of its ability to liquidate its available assets within the timing requirements of the VRDO structure is extremely important. Management's experience in managing and liquidating its assets will be considered in Standard & Poor's evaluation of the obligor's proposed liquidation procedures. ■

Bank Liquidity Facilities

Most municipal issuers lack the liquidity necessary to fund optional and mandatory tenders or do not wish to restrict the investment of their available resources. If an obligor does not have sufficient high-quality liquid assets, such as cash and cash equivalents, to fund the tenders set forth in its program, a liquidity facility must be provided to pay the purchase price of bonds that cannot be remarketed. Whether Standard & Poor's Ratings Services can assign a liquidity rating to a variable rate demand obligation (VRDO) without bank support to cover these tenders is determined on a case-by-case basis.

These VRDOs may have credit ratings derived from the obligor, or have credit support provided by bond insurance policies. Liquidity support can be provided by lines of credit or standby bond purchase agreements (SBPAs).

Lines Of Credit

Lines of credit are conditional, revocable liquidity facilities that may be terminated without prior notice to the holders upon the occurrence of various events of default under the related agreement. Based on its structure, a line of credit can be viewed as strong or weak. Although the events that lead to a weak line of credit terminating its commitment without prior notice to the holders can include events Standard & Poor's has deemed a remote occurrence or concluded is factored into the long-term component of the bond issue, it generally includes other termination events that are more expansive in scope. Termination events for weak lines generally include covenant defaults, failure to pay fees, and failure to pay based on trustee negligence. Because a weak line of credit can terminate for reasons beyond the obligor's ability to pay principal of and interest on the bonds, a line of credit provides only supplemental liquidity coverage to an obligor's own liquidity.

If the liquidity facility is to be considered a strong line of credit, the SBPA criteria detailed below will be met. Although the line can be used to support the obligor's existing liquidity rating, the strong line could also provide liquidity enhancement for the bonds even if the obligor does not have a liquidity rating. The short-term component of the rating on the VRDOs will be derived from the short-term rating of the entity providing the strong line of credit.

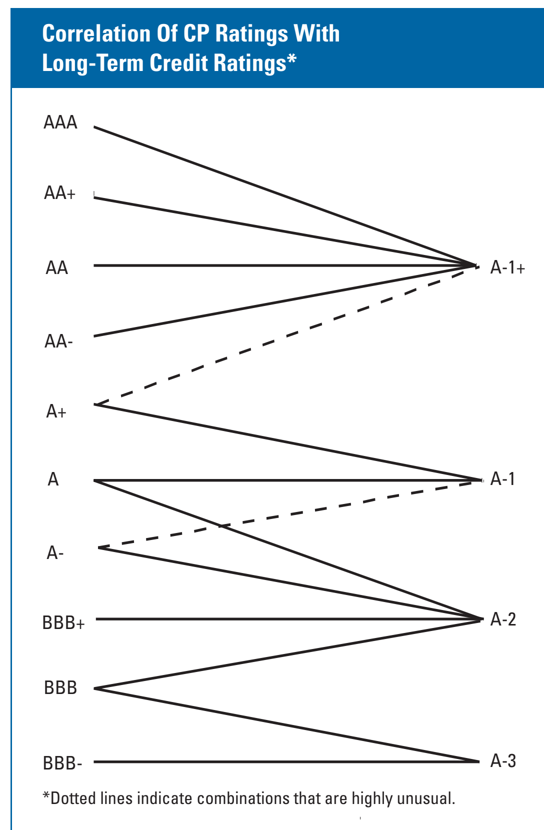
Standby Bond Purchase Agreements (SBPAs)

Ratings criteria for SBPAs closely follow that for letters of credit (see "LOC-Backed Municipal Debt"). The major difference from LOCs is that SBPAs are conditional, revocable facilities that may be immediately terminated or suspended without notice upon the occurrence of certain events of default as specified under the related agreement. Standard & Poor's restricts the permissible events of default to those deemed to be remote or where the likelihood of the events of default occurring is factored into the long-term rating of the issue. Any other termination of the SBPA must be preceded by a mandatory tender with the purchase price for the bonds provided by remarketing proceeds and ultimately, the SBPA provider. Events

that immediately suspend the SBPA provider's obligation to purchase are viewed the same as immediate termination events.

As a result of the limited number of termination or suspension events, the SBPA provider's short-term issuer credit rating becomes the short-term rating on the bond issue. Note that Standard & Poor's will apply the same restrictions to the conditions precedent to purchase section of the SBPA, as that section can have the same effect on the provider's payment obligation. If two or more SBPA providers combine to severally support a bond issue, the short-term rating will reflect the lowest short-term issuer credit rating of any of them.

Unless additional self-liquidity is provided and evaluated, a liquidity rating based on an SBPA cannot be higher than the equivalent long-term bond rating of the issue *(see chart, "Correlation Of CP Ratings With Long-Term Ratings"),* since the bank's obligation to fund the purchase price for tendered bonds is conditioned on the obligor or insurer's ability to meet its debt obligations. The liquidity rating of the issue will be based on the lower of the short-term rating assigned to the bank or the short-term rating correlating to the long-term rating of the bond issue. Therefore, the likelihood of the bank terminating its obligation to purchase the tendered bonds is correlated to the long-term rating of the bond issue.



Correlation Of CP Ratings With Long-Term Credit Ratings*

*Dotted lines indicate combinations that are highly unusual.

The SBPA(s) must provide principal coverage of the full par amount of the issue, and interest coverage for the longest interest accrual period for the modes that the SBPA is covering. Interest coverage should be calculated at the maximum rate permitted on the bonds. The interest accrual period extends from the day any interest mode becomes effective or from the last interest payment date to and including the day before a regularly scheduled interest payment date. If a mandatory tender can occur on a day other than a regularly scheduled interest payment date, additional coverage may be needed. The SBPA agreement should specify that the provider would pay with immediately available funds. In addition, as with the LOC criteria, the SBPA provider must specifically state that they will pay with their own funds.

Permitted Automatic Termination Events

Uninsured liquidity facilities

Standard & Poor's allows the following events to result in a termination or suspension without notice of an SBPA providing liquidity enhancement to uninsured bonds:

1. Failure to pay principal of or interest on the bonds being rated (including bank bonds).
2. Failure to make payment on any debt on parity with, or senior to, the bonds being rated (including bank bonds).
3. The issuer or obligor challenges the validity or enforceability of the bond documents or liquidity documents, or any court or governmental authority having jurisdiction over the transaction finds or rules that the bond documents or liquidity documents or any material provision thereof relating to the payment of principal and interest on the bonds being rated (including bank bonds), are not valid and binding. This includes, in certain cases, a similar determination by the obligor, court, or governmental authority that the defined pledged security for the bonds, as stated in the bond documents, is no longer valid or enforceable.
4. The obligor begins proceedings relating to bankruptcy, insolvency, reorganization, or relief from debtors, or admits its inability to pay its debts in writing, or the occurrence of an involuntary bankruptcy event.
5. Standard & Poor's reduces the bond rating to below investment grade (below 'BBB-'), or the rating is suspended or withdrawn for credit-related reasons.
6. The IRS declares the bonds taxable.

7. The occurrence of a final, non-appealable judgment against the obligor requiring payment by the obligor and such judgment is not satisfied within a period of at least 60 days from the date on which such judgment was rendered. In the case of bonds rated based solely on pledged revenues, such judgment must be determined to be payable from the pledged revenues serving as the security source for the bonds.
8. A debt moratorium, debt restructuring, debt adjustment or comparable extraordinary restriction is declared by, or imposed on, the obligor's parity bonds. Such imposition should be as a result of a finding or ruling of a governmental authority with jurisdiction over the obligor.

Standard & Poor's factors the likelihood of the first two events into the long-term rating on the bonds, and considers the occurrence of events 3,4 and 8 to be remote. Termination without notice for event 5 is permitted only for issues that are rated at least 'A+'. Should the bank's obligation terminate without notice due to event 5 and bondholders retain tender option rights, the obligor should be the next source to fund unremarketed tendered bonds. If the obligor is unwilling to be a source for tenders, then the tender option rights should be terminated in the bond documents should event 5 occur. For event 7, the fact that the decision is final and non-appealable, coupled with the 60 day period, gives the obligor sufficient time to arrange for the satisfaction of the judgment.

Insured liquidity facilities

Standard & Poor's allows the following events to result in a termination or suspension event without notice of an SBPA for issues that have an insurance policy securing the principal and interest on the bonds:

1. Insurer declaration of insolvency or admission of inability to pay its debts in writing, or a proceeding is commenced against the insurer by an oversight body or court of appropriate jurisdiction the effect of which would be to declare the insurer insolvent.
2. Insurer default under any bond insurance policy, fee surety bond associated with the issue, or surety bond issued by it insuring or supporting the payment of principal and interest on municipal obligations.
3. Issuer substitution of the insurer or cancellation of the insurance policy without the liquidity bank's written consent, provided that a corresponding covenant requiring the issuer to receive the liquidity bank's consent is included in the documents.
4. Insurer contests or repudiates the validity or enforceability of the bond insurance policy, or fee surety bond associated with the issue, or any provision thereof affecting the obligation of the insurer to pay thereunder.
5. A finding or ruling by a court or governmental authority with jurisdiction to rule on the validity of the bond insurance policy that the policy, or any provision thereof affecting the obligation of the insurer to pay thereunder, is not valid and binding on the insurer.
6. Standard & Poor's reduces the insurer's financial enhancement rating to below investment grade (below 'BBB-'), or the rating is suspended or withdrawn for credit-related reasons.
7. The IRS declares the bonds being rated taxable.

The likelihood of events 1 and 2 has been factored into the rating on the bonds. Standard & Poor's considers events 3 through 5 remote. Event 6 is permitted only for issues that are rated at least 'A+'.

Standard & Poor's does not allow events such as failure to pay fees under the SBPA, failure to pay any subordinate debt or debt not rated by Standard & Poor's, or covenant defaults to lead to termination without notice of the bank's obligation to purchase tendered bonds. The likelihood of these events occurring is not factored into the long-term rating. If such events exist, either the bank may declare an event of default under the liquidity document and bondholders will be required to tender their bonds pursuant to a mandatory tender, which is ultimately funded by the SBPA provider, or the document will be reviewed as a line of credit in support of an obligor's own liquidity coverage.

Standard & Poor's requires a mandatory tender to occur before the expiration or termination of the SBPA because the short-term rating of the issue is based on the bank (other than in the case of the termination events without notice outlined above), thus bank funds need to be available to take out all bondholders.

Termination By The Bank

The SBPA may only permit its obligation to purchase tendered bonds to terminate "upon the occurrence" of the permitted automatic termination event. In certain agreements, attempts have been made to define the SBPA provider's termination time as "on the day of the occurrence of the event of termination" or "on the business day prior to the occurrence of the event of termination". Both of these constructions leave open the possibility that the SBPA provider may fund a tender payment, but then could attempt to recover that payment from the bondholder by virtue of the

occurrence of the automatic termination event within the specified period. The termination by the SBPA provider can happen no earlier than upon the occurrence of the permitted automatic termination event.

Other Concerns Regarding Insured Liquidity Transactions

In insured liquidity transactions, all payment events for bondholders should be covered either by the bond insurance policy or the SBPA. Careful attention is paid to the optional redemption, purchase in lieu of redemption, and tender provisions of the trust agreement. If obligor funds can be used to pay bondholders (a common example is optional redemptions which are not covered by the bond insurance policy or SBPA), the source of such funds should be limited to those sources deemed preference proof by Standard & Poor's (see the "LOC-Backed Municipal Debt" criteria).

Another payment event is acceleration of the debt. Unless specifically noted in the bond insurance policy, insurers will not fund accelerated debt unless the acceleration happens with their prior written consent. Therefore, it should be clearly stated in the trust agreement that acceleration can only occur with the bond insurer's prior written consent.

Another possible payment event is a special mandatory redemption of bonds held by the SBPA provider. Unless specifically covered under the bond insurance policy, insurers will not fund this special mandatory redemption. Therefore, Standard & Poor's will review the endorsement or rider to the bond insurance policy that evidences coverage of this redemption. ■

Municipal Swaps

Interest-rate swaps are being used in conjunction with bond issues to save interest costs, increase financial flexibility, synthetically refund bond issues, and access various investor markets.

However, swaps expose issuers to counterparty credit risk, termination risk, basis risk, rollover risk, and for many housing bond issuers, amortization risk. If used to speculate on the direction of interest rates, or if they are not structured properly, swaps can reduce an issuer's ability to pay debt service on time, thereby affecting its credit quality. Standard & Poor's Ratings Services assigns Debt Derivative Profiles (DDP) to all U.S. municipal bond issuers that have engaged in swap or other derivative transactions. The DDP scoring methodology codifies the following Swap Criteria and is discussed in an accompanying section.

Swap Structures

The most common types of swaps in the municipal market are floating-to-fixed-rate swaps and fixed-to-floating rate swaps. The floating-to-fixed rate swaps are typically used to create synthetic fixed-rate debt while the fixed-to-floating rate swaps are typically used to create synthetic variable rate debt. Other common swap structures are also described below, including forward starting swaps, rate locks, basis swaps, and swaptions.

Floating-to-fixed swaps

Synthetic fixed rate debt is created through use of fixed payer, or floating-to-fixed-rate swaps. This structure provides a low cost alternative to issuing conventional fixed-rate debt, by allowing the issuer to access the short-term debt market. The issuer issues variable rate debt and hedges its floating-rate exposure with floating-to-fixed-rate swaps. Under floating-to-fixed swaps the variable rate index received by the issuer from the counterparty matches or closely approximates the variable rate on the debt, leaving the issuer with a fixed-rate exposure for the term of the swap and, in most cases, term of the bonds.

Fixed-to-floating swaps

Synthetic variable rate debt is created through use of floating payer, or fixed-to-floating-rate swaps. The synthetic floating-rate debt structure provides a low cost alternative to issuing variable-rate debt. It creates nonputable variable rate debt and allows the issuer to avoid variable-rate program costs, such as credit, liquidity, and remarketing or auction agent fees. This structure is used to convert existing fixed-rate debt to a variable rate or as part of a new issuance. Some issuers take advantage of this structure to hedge negative arbitrage on large cash and short-term asset positions.

Forward starting swaps

Forward starting swaps are typically structured as floating-to-fixed swaps for synthetic advance refundings of fixed-rate debt. This structure provides an alternative to conventional advance refundings. Some municipal issuers—such as utilities, airports, and health care issuers—that are precluded from carrying out an advance refunding or have used up their advance refunding capacity can synthetically advance refund bonds using a forward starting swap. Under this structure, the issuer enters into a forward starting floating-to-fixed rate swap contract to lock in a fixed rate. On the swap's effective date, which coincides with the bond's call date, refunding variable rate bonds are issued, and the proceeds are used to call the outstanding higher-coupon fixed rate bonds. The swap payments begin on the call date, effectively converting the floating-rate exposure of the issuer to a fixed rate.

Rate locks

Interest rate locks structured as floating-to-fixed rate swaps are gaining popularity for advance or current refundings as well as new money issues where the issuer wants to lock in a current low fixed interest rate. In the rate lock swap structure, the issuer enters into a long-dated floating-to-fixed rate swap with a predetermined early termination date at market. The fixed rate for the issuer's financing is locked in on the date on which the issuer enters into the floating-to-fixed rate swap, whereas the pre-determined early termination date under the swap coincides with the date of planned issuance of fixed rate debt. Upon termination, the issuer pays or receives a termination amount equal to the fair value of the swap on the termination date. Issuers either receive a termination amount from the counterparty (to the extent rates have risen higher than the locked in fixed rate) or pay a termination amount to the counterparty (if rates have declined lower than the locked in rate). Upon termination of the swap, the issuer will issue fixed rate debt at the prevailing market rate. The swap's termination amount paid to the counterparty or received from the counterparty causes the issuer's total debt service (principal and interest) to be economically equivalent to having issued fixed rate bonds on the date the rate lock swap was executed. Because termination payments are specifically designed to mitigate interest rate risk and do not, in and of themselves, materially impact the issuer's financial condition, Standard & Poor's is not generally concerned about termination risk under rate lock structures.

Basis swaps

In recent years, some issuers have entered into basis swaps to hedge fixed rate or floating rate debt exposure. Basis swaps, or floating-to-floating swaps, are crossing positions where the issuer pays a floating rate, usually equal to the BMA index, and in exchange, receives another floating rate, usually equal to a percentage of LIBOR (e.g. 68%). In some cases, different percentage points (e.g. 20 basis points) are added to the payer or receiver rates; these swaps are referred to as fixed spread basis swaps. Another type of basis swap structure are leveraged basis swaps, which apply a leverage factor to the payer and receiver rates effectively increasing cash flow volatility.

All basis swap structures involve the risk that the prevailing floating rate paid to the counterparty will be higher than the prevailing rate received from the counterparty. Issuers that use basis swaps to hedge fixed rate exposure typically do so as a synthetic current refunding of fixed rate bonds that for tax law reasons cannot be refunded, or bonds for which the issuer does not want to incur costs associated with a traditional refunding. Under the synthetic current refunding structure, the issuer's goal is to achieve an economic return under the basis swap, which approximates the debt service savings that would have occurred if the targeted fixed rate bonds were traditionally refunded. Issuers that use basis swaps to hedge floating rate exposure typically do so with the goal of eliminating basis exposure by modifying the floating receiver leg of existing floating-to-fixed rate swaps. In this structure, the issuer enters into a basis swap with a floating receiver rate that better matches the floating rate paid on outstanding variable rate debt.

Because of the dynamic interplay between BMA and LIBOR over time, all basis swaps entail a high degree of cash flow volatility. Therefore, issuers that enter into basis swaps must have a revenue stream sufficient to absorb year-to-year losses or lower than expected returns under these structures without materially affecting cash flow and liquidity.

Swaptions

A swap option, or swaption, is an option to enter into or terminate a swap in the future. Swaptions associated with off-market swaps are priced based on option pricing theory, which involves time value and volatility, among other metrics. Issuers often use swaptions to hedge the expected issuance of debt in the future for specific purposes. In exchange for entering into a swaption, the issuer is paid an upfront premium, which represents the time value of the option to enter into a future swap with the counterparty and the off-market nature of the swap. Issuers tend to use swaption premiums for reserves, operations, or capital financing needs. Once a counterparty has

purchased a swaption, it now has the right to exercise the option based on future dates and/or interest rate conditions. The issuer, as option seller, has a liability equal to the premium received for the swaption, which will be amortized over the life of the swap, should the swap become effective. However, the liability will disappear to the extent the swap is not effectuated and the option expires worthless. Also, depending upon the credit characteristics of the issuer, a large termination payment liability exists to the extent the debt financing does not occur and the swap becomes an unusable hedge. Therefore, issuers that sell swaptions should be certain that the financing for which the swaption was written will occur to coincide with a potential exercise of the option by the counterparty.

Source Of Swap Payment And Swap Lien

Before entering into a swap, the issuer's management should identify the revenue source for making net swap payments and budget for them. The source of termination payments should also be identified. Revenue bond issuers should include the fixed or variable swap payments in the rate covenant and additional bonds test covenants to avoid swaps having a negative impact on the ability of the issuer to pay debt service. Typically, for GO bond issuers, the swap payment source is the general fund, and for revenue bond issuers, the swap payments come from the same revenue source that supports the debt service on the bonds. The net swap payments should be structured so that they are junior to or on parity with the debt service obligation to ensure that debt service payments are not affected. Termination payments are typically on parity or subordinate to debt service. Termination risk and mitigation strategies are discussed in detail below.

Legality

It is important that the issuer has the appropriate legal power to enter into and properly authorize all swap contracts. Illegality can result in the swap being terminated, exposing the issuer to a potentially large termination payment and/or floating-rate exposure. Most states have statutes that give the issuers the authority to enter into swap agreements. However, if the law is ambiguous, Standard & Poor's suggests that an issuer verify its legal authority for swaps.

Swap structure risks

Standard & Poor's has identified six general risks associated with swap contracts for municipal bond issuers. These risks include:

- Counterparty risk;
- Rollover risk;
- Economic viability (basis/tax risk);
- Amortization risk;
- Termination risk; and
- Collateral posting risk.

Standard & Poor's will focus on all of these credit factors when analyzing a swapped bond transaction. As part of this process, Standard & Poor's must receive various documents necessary to analyze the terms of the contracts (see "Swap Legal Documentation Review Process" below). Furthermore, we will ask all issuers who enter into swaps or other hedging contracts to prepare a Swap Management Plan (see "Swap Management Plan" below). A discussion of the risks associated with swaps follows.

Counterparty risk

Counterparty risk is the risk that the swap counterparty will not fulfill its obligation to honor its obligations as specified under the contract. Under a floating-to-fixed swap, for example, if the counterparty defaults, the issuer would be exposed to an unhedged variable rate bond position, and in the case of full two-way termination and negative swap valuation, could owe the counterparty a termination payment. The creditworthiness of the counterparty is indicated by its issuer credit rating (ICR). Standard & Poor's looks for swap counterparties that are rated at least 'BBB/A-2' for swap-independent transactions and at least 'A/A-1' for swap dependent transactions. Most swapped municipal bonds rated by Standard & Poor's are considered swap-independent since failure of the swap counterparty does not preclude the issuer from paying the debt. The degree of swap-dependence for any given transaction, however, is determined by the creditworthiness of the pledged revenue source as well as the structure of the bonds. Many structured finance transactions, for example, are considered highly swap dependent since bond debt service is structured assuming the swap remains in place for the life of the transaction.

In cases where a counterparty is a "terminating" derivative product company (DPC), as opposed to a continuing entity, Standard & Poor's ICRs for these entities will include a 't' subscript (e.g. 'AAAt'). The 't' subscript indicates that the DPC could terminate its existence upon short notice to bond issuers with no penalty. If an issuer enters into a swap contract with a terminating DPC, Standard & Poor's will assume that termination of the DPC itself could occur at any time and that the swap would have a negative valuation, thereby requiring the issuer to make a termination payment to the counterparty. Therefore, issuers that enter into a swap with a terminating DPC should demonstrate sufficient liquidity to handle termination payments at any time. Swap-dependent bonds and non-plain vanilla swaps are

held to a higher rating threshold due to the potential for decreased liquidity of the swap should the swap counterparty need to be replaced. In order to mitigate rating concerns following a counterparty downgrade to below the minimum rating threshold, counterparties should provide collateral, if swap termination or replacement of the swap provider by the issuer is not possible or economic. Many counterparties are in fact required to post collateral at relatively higher rating levels under credit support documents, thereby mitigating counterparty risk for the issuer.

Standard & Poor's will determine the appropriate counterparty-rating threshold for each transaction based on whether or not the issue is swap-dependent or if the swap is plain vanilla. The applicable counterparty rating thresholds should be defined in the bond and swap documents, as well as the issue's swap management plan, as the minimum rating for an eligible swap provider, with appropriate trigger mechanisms for replacement, collateralization, swap insurance, or termination.

Although most counterparties that participate in the municipal swap market are highly rated, above 'A', as the municipal swap market has grown, Standard & Poor's is concerned that some issuers have a growing and significant swap portfolio and single-entity credit exposure, some with lower rated counterparties. For this reason, Standard & Poor's looks for issuers to manage its counterparty exposure to lower rated counterparties in absence of low collateral thresholds. Therefore, for counterparties rated lower than 'A/A-1' the concentration limit is 50% of risk adjusted notional (the concept of risk adjusted notional amounts is discussed in the DDP section). Concentration above 50% of risk adjusted notional for counterparties rated lower than 'A/A-1' may be mitigated by full value collateral posting by counterparties, if swap termination or replacement of the counterparty by the issuer is not possible or economic, under the terms of the swap contract.

Basis risk

Basis risk refers to a mismatch between the interest rate received from the swap contract and the interest actually owed on the issuer's bonds. Basis risk can occur with any type of debt derivative, specifically floating-to-fixed and fixed-to-floating swaps. For example, in a floating to fixed rate swap, the risk is that the counterparty's variable interest payments will be less than the variable interest payments actually owed on the issuer's bonds. Most floating-to-fixed rate swaps require the issuer to pay a fixed interest rate and in return receive a floating rate based on a percentage of one month LIBOR or the Weekly BMA Municipal Swap index. Most "tax-exempt" swaps are referred to as "BMA swaps" or "percentage of LIBOR" swaps. In some cases, issuers secure "cost of funds" swaps, where the counterparty pays the exact interest rate on the bonds. If the swap is not a cost of funds swap, the mismatch between the actual bond rate and the swap interest rate could cause financial loss in the form of additional debt service for the issuer. This mismatch could occur for various reasons including, increased supply of tax-exempt bonds, credit quality deterioration of the issuer, or a reduction of federal income tax rates for corporations and individuals.

Tax event and market risk

All issuers which issue variable rate bonds that trade based on the BMA index inherently accept risk stemming from changes in marginal income tax rates. This is due to the tax code's impact on the trading value of tax-exempt bonds. This risk is also known as "tax event" risk, a form of basis risk under swap contracts. Percentage of LIBOR, certain BMA swaps, and basis swaps, can also expose issuers to tax event risk. Some BMA swaps have tax event triggers which can change the basis under the swap to a LIBOR basis from a BMA basis.

Based on historical evidence, Standard & Poor's believes that any downward shift in the top federal income tax rate for individuals and corporations could cause all variable rate bond issuers to experience "tax event" risk. In addition to tax event risk, extremely low interest rates could expose issuers engaging in swaps based on BMA and LIBOR to experience losses due to rate compression between the two indices. For this reason, Standard & Poor's routinely reviews its variable rate tax-exempt bond price assumptions in order to determine a stressful relationship between BMA and LIBOR to account both for tax and market event risk. Under these criteria, all variable rate debt issuers should assume that income tax rates are lowered over time such that the ratio of Weekly BMA to one month LIBOR increases to 75%. This assumption is incorporated into the Economic Viability component of Standard & Poor's DDP analysis (see "Public Finance Criteria: Debt Derivative Profile").

Rollover risk

Rollover risk is the risk that the swap contract is not coterminous with the related bonds. In the case of the synthetic fixed rate debt structure, rollover risk means that the issuer would need to re-hedge its variable rate debt exposure upon swap maturity and incur re-hedging costs. The issuer should have concrete strategy to account for rollover risk. Otherwise, Standard & Poor's will assume that bonds will be unhedged at the time of swap maturity. The issuer can mitigate rollover risk by closely monitoring the interest rates and by having policies in place to extend the swap or enter into a new swap if the rates drop. The strategy of using medium- term swaps to fix the variable rate for a five-to-10-year period does not eliminate the rollover

risk, but gives the issuer additional financial flexibility, reduces termination risk, and could result in a lower fixed rate than can be obtained through a long-dated swap.

The issuer can fully avoid rollover risk by entering into long-dated swaps (those with a greater than 10 years) whose term matches that of the bond term, thus locking the rates for the life of the bonds. However, this strategy contains hidden costs. Issuers using long-dated swaps give up some ability to refund the debt and to take full advantage of declining interest rates, unless the swap is structured with an optional cancellation clause.

Amortization risk

Amortization risk represents the cost to the issuer of servicing debt or honoring swap payments due to a mismatch between bond principal amortization and the swap notional amount amortization. Amortization risk is characteristic of swaps used to hedge variable rate bonds issued by state housing finance agencies for single-family mortgages, although it can also occur with variable rate bonds issued by other revenue bond issuers to finance other amortizing assets. Amortization risk occurs to the extent bonds and swap notional amounts become mismatched over the life of a transaction. This could occur to the extent an issuer has used bond proceeds to finance an asset that is liquidated or prepaid and used to redeem bonds in advance of the swap notional schedule, causing an unhedged swap position.

In this case, the issuer would continue to owe payments under the swap with no asset to cover such payments. Conversely, the issuer could be faced with some unhedged variable rate bonds to the extent the financed asset does not prepay as originally intended or generate the expected cash flow to repay bonds in accordance with the pre-set swap notional schedule. This scenario is most common in single-family mortgage bonds where principal prepayments are lower than expected. Amortization risk is a potential risk, which could expose the issuer to additional payments, and potentially force the issuer to terminate the swap prior to maturity under unfavorable market conditions. The amount of loss exposure due to amortization risk is determined on a case-by-case basis depending on the purpose of the issue and the issuer's intended technique to mitigate this risk.

Standard & Poor's must be comfortable that the issuer will still be able to service the debt or swap in the absence of the hedge or financed asset respectively. Assuming the issuer will not terminate the swap in the event of a mismatch, reserves or cash flows must demonstrate sufficiency to cover the worst-case amortization risk scenario.

Termination risk

Termination risk is the risk that the swap could be terminated early by the counterparty due to any of several credit events, which may include issuer ratings downgrades, covenant violation, bankruptcy, swap payment default, and default events as defined in the issuer's bond indenture. These events are referred to as involuntary termination, as opposed to voluntary termination. (Discussed below in Termination Analysis).

Standard & Poor's will analyze each swap contract's legal provisions prior to execution to ensure that the events of default or termination that trigger an involuntary termination are remote possibilities.

The events of default and termination, which could lead to involuntary termination of the contract should ideally only include the "big four" termination clauses:

- Failure to pay;
- Bankruptcy;
- Merger without assumption; and
- Illegality.

The aforementioned events are typically considered remote events since Standard & Poor's factors these aspects into the rating on the debt. Standard & Poor's may consider other events of default and termination to be remote events on a case-by-case basis, depending on the credit profile of the issuer and the ratings on the bonds.

These events may include:

- Additional Termination Event of a Ratings Downgrade to below a certain rating;
- Breach of agreement;
- Misrepresentation;
- Cross default; and
- Default under a specified transaction.

To the extent that Standard & Poor's cannot establish the remoteness of an event of default or event of termination, which would trigger involuntary termination of the swap contract, this possibility will be assumed under the swap and scored a '4' in the termination and collateral posting risk section of the DDP. In this case, Standard & Poor's would assume that bonds are unhedged and furthermore, that the issuer would have to pay a termination fee to the counterparty. Standard & Poor's will also analyze the conditions under which the issuer entered into the swap to determine the likelihood of voluntary termination under adverse market conditions, such as in the case of a swaption sold to a dealer under fiscal duress. If this is the case, this swap will also be scored a '4' during the DDP process.

Remedies available to the swap counterparty resulting from an issuer defaulting on its swap obligation should not infringe on bondholders' rights.

These remedies should be limited to the swap agreement and should not be written into or cross-defaulted to the bond indenture. Depending on how interest rates at the time of termination compare with the fixed rate on the swap, the issuer could owe a termination payment to the counterparty or receive a termination payment from the counterparty.

Collateral posting risk

Collateral posting risk is the risk that the issuer is required to post collateral in favor of the swap counterparty in advance of a swap termination event and final bond repayment. Collateral posting risk is a double-edged sword for many issuers. On the one hand, collateral postings can be a credit positive since these reserves mitigate a sudden liquidity drain of having to make a large termination payment in the event of swap termination. On the other hand, collateral posting poses a credit risk as some issuers credit quality would be impacted by collateral posting in the same way credit would be impacted following a termination payment.

Many swap documents have symmetrical credit provisions, requiring issuers to post collateral at identical rating thresholds as the swap counterparties. Although important from a swap counterparty's perspective for protection against issuer termination, collateral posting in advance of termination is problematic from a ratings perspective. This is because in the event of collateralization by the issuer, swap providers effectively become senior secured creditors, thereby impairing bondholder protection. To the extent collateralization by issuers impairs bondholder protection materially, Standard & Poor's will take this into account during the ratings process. However, in the event collateralization does not impact liquidity materially, termination risk would be fully mitigated and therefore, represent a credit positive. Standard & Poor's DDP scoring methodology captures the likelihood of collateral posting risk as more fully described below.

Involuntary termination analysis

If Standard & Poor's considers involuntary termination to be a possibility, as indicated by a overall DDP score of '3' or '4' or a termination and collateral posting risk score of '3' or '4', this risk must be quantified through analysis of the swap's maximum potential exposure (MPE) provided by the issuer. Analysis of termination risk and its impact on the issuer's rating is covered in the DDP criteria.

Voluntary terminations

Although any swap is callable at any time if both parties agree to the cancellation and cash settlement has occurred, municipal swaps typically are not optionally callable at any time for any reason by either party, without the other party's consent, unless a specific option to do so is built into the contract itself. Issuers typically need to purchase this option from counterparties. Standard & Poor's looks to see that issuers build market price optional termination clauses into swap documents, which will give them flexibility for cancelling the swap should this become necessary, either for the refunding of associated bonds or other market-driven reasons. In most cases, optional terminations of swaps occur to the extent the termination results in an economic benefit to the issuer, even if a termination amount is paid to the counterparty.

Termination payment source and lien

Much focus is placed on the early termination of swap contracts. While the probability of this risk will be scored in the DDP through a rating transition analysis, it is important for issuers to think through a contingency plan if the swap does unwind and the issuer will owe a settlement amount that is due immediately. Many bond transactions that include a swap make the lien of the swap payments and termination payment on parity with the debt service. This does not cause Standard & Poor's great concern if the issuer has revenue-raising capability and good liquidity. It also is not a concern if the swap termination events have been limited to credit events that are being reflected in the rating on the bonds. However, on the other end of the spectrum are the balance sheets that could not withstand a large cash outflow in a month's notice.

Involuntary termination risk mitigation strategies

Two of the most common ways to mitigate the effect of termination payments to an issuer are subordinating termination payments to the debt service on the bonds and including provisions in the swap agreement that allow the issuer to stretch out the payments over a period of time.

Subordinated lien

Since the termination payment can be large, and it is difficult to predict the timing and size of the payment, cash settlement of a termination payment can be subordinate to debt service. While a subordinated lien will get the issuer over the hurdle of payment of debt service for that period of time, it is important to note that the settlement payment to the counterparty still must be paid in full. This could hurt the issuer's liquidity and therefore impair its ability to pay debt service in the future.

Amortization of termination payment

This alternative focuses on the issuer's financial flexibility to withstand the cost of an early termination regardless of its capacity to increase rates and

charges. An issuer that has limited liquidity resources should include provisions in the swap agreement that allows the issuer to pay the termination value over a period of time. A stress test of an issuer's income and cash flow statements is done to determine the amount of cushion that is available to pay additional unexpected cash settlement. The worst-case termination value would be used in determining the amount and term of the payment structure. For example, repayment terms could be a five-year term with an annual maximum payment of $10 million.

The issuer can also reduce termination risk by:

- Entering into a swap with a strong counterparty;
- Limiting the termination triggers and events of default;
- Reducing the term of the swap; or

Developing contingency plans for making the termination payment.

Management

One of the most important aspects of the analysis of the use of swaps is the evaluation of the understanding and expertise that management contributes. Managing derivatives like interest rate swaps requires an ongoing commitment from the issuing entity's senior executives. All senior management—not just the chief financial officer—should become familiar with the risks and rewards of the derivatives being considered. Because of the complexities involved, some small issuers may not be in a position to develop the necessary expertise and systems to adequately manage some derivatives. In fact, smaller issuers' capital needs generally are not large enough to justify the sizable fixed costs associated with putting together these types of transactions. Therefore, Standard & Poor's will request a discussion of the issuer's Swap Management Plan and Policies as part of the DDP process.

Swap Management Policies Versus Swap Plans

It is important to distinguish between a swap management policy and a swap management plan. A swap policy is a formally approved written document intended to guide management decisions over time, whereas a swap plan is similar to a plan of finance, intended to rationalize or explain specific transactions done within the swap policy's parameters. Because of this distinction, the two serve different purposes and are viewed differently in the DDP scoring process. A formally adopted swap policy details operating parameters for entering into and executing swaps, outlines exactly what types of transactions can and cannot be entered into, lays out credit decision matrices and levels of maximum risk exposure, and is part of institutionalized management and financial policies.

Swap Management Policy

Issuers can adopt formal swap management policies and procedures that simultaneously minimize the risks and maximize the rewards from swaps. A meaningful and effective swap policy includes the following components:

- Purpose
- Authorization
- Controls
- Oversight
- Disclosure
- Strategy

Purpose

A swap policy should include a purpose statement that indicates the reasons for entering into interest rate derivative transactions. Answering the question, "why does using swaps and other debt derivatives make sense?" will allow the issuer to outline the goals and expectations of hedging fixed or variable rate exposure with swaps in relation to its portfolio of debt instruments. Issuers should state under what scenarios and opportunities derivatives might be used to hedge interest rate risks. With these goals, the issuer provides an important measure of transparency regarding the use of swaps in the broader context of the municipal entity's financial operations.

Authorization

It is important that the issuer have the appropriate legal power to enter into swap contracts. An issuer's swap policy should clearly cite the legal reference or statute that provides authorization. Also, the issuer should outline any formal authorization process for entering into interest rate swap agreements.

Risk controls

Management should outline policies designed to minimize the liquidity and cash flow risks associated with swaps. The revenue source for making net swap payments should be identified and budgeted for once the swap structure is stressed against different interest rate scenarios and payments can be estimated. The source of termination payments should also be identified with an attendant "liquidity-at-risk" policy, outlining the maximum amount of liquidity reserves, which could be placed at risk should a collateral posting or termination event occur.

Risk mitigation strategies could include the following parameters:

- Acceptable additional termination events, including maximum rating triggers;
- Use of insurance or collateral to protect counterparties, and if so, what are the minimum thresholds;
- Cross default provisions;
- Termination payment terms (subordinate and/or payout as lump sum or amortized over time); and
- Counterparty rating minimums and other credit protection provisions, such as collateral requirements or third-party guarantees.

Oversight

Managing derivatives, such as interest rate swaps, requires an ongoing commitment from the issuing entity's senior executives and governing body. All senior management and officials—not just the chief financial officer—should become familiar with the risks and rewards of the derivatives. As part of a swap policy, an issuer should delineate what process it will follow to consider entering into swaps and which positions have direct and indirect oversight of the real-time management of swaps. In terms of ongoing oversight, issuers should routinely monitor swaps under current and forecasted interest rate environments, in order to gauge potential cash flow gains and losses as well as market opportunities for voluntary terminations and restructurings. Market valuations of derivatives should also be routinely calculated.

Disclosure

Issuers should commit to continually disclose all aspects of derivatives position in accordance with GASB guidelines, or FASB, as applicable. Currently, GASB's 2003 Technical Bulletin ("2003-01-Disclosure Requirements for Derivatives Not Reported at Fair Value") provides guidelines for adequate disclosure of pertinent information related to derivatives. In addition, at the time of a rating review, management should be prepared to discuss the details of the swap plan and plan of finance and state the current and future economic viability of the swaps in addition to the likelihood of voluntary or involuntary termination during the course of the current and upcoming fiscal year.

Strategy

The issuer should outline the different types of swaps or derivatives that would be included within a swap plan; that is the types of structures that could be considered when presenting an opportunity for risk management (e.g., in which interest rate environments) and how they should be used (e.g. natural hedges, basis swaps or synthetic refundings, rate locks, synthetic fixed and variable, etc.) in the broader context of the capital financing plan. The desirable capital structure of variable to fixed-rate debt should also be determined as a percentage of total debt outstanding (net variable exposure).

Required Documentation For Variable Rate Debt And Swaps

(1) Cash flow projections as discussed under "Cash Flows."

(2) Dbt Management Plan

(3) Swap Management Plan

(4) Swap legal documents:

- Bond Trust Indenture
- ISDA Master Agreement
- Schedule with Confirmation

Management Check List

Addressing the following issues will strengthen the swap management policy:

- Formal approval of written documents by the issuer's governing body;
- Swap risks identified and discussed in the context of the issuer's financing plans;
- Annual management review and discussion of hedging strategies;
- Commitment to complete and comprehensive disclosure of swaps in audited financial statements above and beyond required GASB or FASB parameters;
- Monitoring of swaps with semi-annual valuation by a third party
- Policies on legal provisions, including optional swap terminations, collateral, or swap insurance;
- Counterparty diversification or a minimum ratings policy for counterparties; and
- A net variable rate exposure policy.

Net Variable Rate Debt Calculation

Standard & Poor's believes that quantification of both balance sheet and cash flow risks associated with variable rate debt is necessary to properly evaluate an issuer's financial flexibility resources when entering into swaps. The quantification process includes determining net variable rate and short-term debt. Once quantified, the overall credit impact of variable rate debt and swaps can be factored into an issuer's rating. This evaluation process will be made on a case-by-case basis.

Net variable rate and short-term debt exposure ratio

Standard & Poor's monitors an issuer's use of variable rate debt as part of the ratings process through a net variable interest rate exposure ratio, which

measures the potential risk to an issuer's revenue stream and reserve levels resulting from rising variable rates. The ratio is calculated on a current and pro forma basis to gauge prospective levels of variable exposure, given either proposed derivatives or additional bonds.

The net variable interest exposure ratio primarily focuses on debt and debt derivatives. Variable rate and short-term debt includes commercial paper, unhedged variable rate bonds, and synthetic variable rate debt. Unhedged variable rate bonds include those bonds, which are not hedged through floating- to-fixed interest rate swaps or variable rate investment assets. Synthetic variable rate bonds consist of traditional fixed rate bonds, which are converted to variable rate bonds through fixed-to-floating rate swaps. Any variable rate bonds that are converted to fixed rate debt through a swap can be netted from variable rate liabilities.

In addition, if the issuer can demonstrate historical sufficiency of offsetting principal and interest coverage from short-term and variable rate investment assets held in unrestricted, non-operating accounts, these assets may be netted from variable rate liabilities. Earnings on short-term or variable rate investments are typically well correlated to variable interest owed on bonds. We consider non-operating accounts, those accounts, which the issuer holds as unrestricted funds for true surplus reserve or hedging purposes only. Investments in those accounts should be highly liquid and invested in short-term securities with maturities of one year or less. Assets held in operating, capital, or debt service purposes are not considered available on an ongoing basis due to the variability of balances over time. Qualifying investment securities may include short-term Treasury notes, commercial paper, repurchase agreements, and guaranteed investment contracts with low volatility of mark-to-market. Revolving lines of credit and other forms of "soft capital" are typically not counted as short-term investments due to the fact that issuers are required to reimburse the provider for any draws made under the facilities.

Swap Insurance

Swap insurance polices are similar to bond financial guarantees in that policies guarantee payments to a beneficiary, in this case a swap dealer, for failure to pay by the insured, in this case the issuer. Also similar to bond insurance, issuers are required to reimburse insurers for any payments made to beneficiaries under swap policies and must live with insurer legal restrictions. Under regular swap insurance policies, the insurer will make regularly scheduled swap interest payments if the issuer fails to do so. The majority of policies issued by insurers to date have been regular swap insurance policies, as they present immaterial, incremental risk to insurers, since in most cases the insurer is also insuring regularly scheduled payments on the issuer's bonds. Swap and bond payments are typically on parity with one another. In addition to regular swap payment insurance, some issuers have purchased swap termination coverage through a policy endorsement for an additional premium. Termination coverage tends to become expensive, as this coverage does present incremental risk for the insurer over scheduled payments on bonds and swaps. Swap termination insurance provides further, although not complete, protection against termination exposure due to issuer and insurer credit events (rating downgrades). Under swap termination policies, insurers will make swap termination payments, up to a specified amount, to the extent that a termination event under the swap is triggered and the issuer has failed to make the termination payment, or in lieu of termination, failed to post collateral or secure a third-party enhancer.

Benefits

The benefits of swap insurance to an issuer are numerous, including significant, although not complete, mitigation of counterparty, collateral posting, and termination risks. Standard & Poor's DDP scores to date indicate that if not for regular swap insurance, many issuers—notably lower-rated health care issuers—would have been exposed to much greater levels of these risks. Of the approximate 210 issuers that have received a DDP score to date, about 15% have benefited from swap insurance through a lower overall DDP score as a result of scoring lower in the termination and collateral posting risk section of the DDP. The significance of swap insurance in the health care and transportation sectors is greater, with about 25% of issuers having benefited from insurance through lower DDP scores.

Regular swap insurance mitigates termination and collateral posting risk in several ways. In terms of collateral posting risk, the issuer is spared from having to post collateral under a credit support annex, due to the joint obligation of swap payments by both the issuer and the insurer. If the insurer has suffered significant ratings downgrades, collateral postings by the issuer are typically required, however. Furthermore, involuntary termination risk becomes more remote with regular swap insurance despite the fact that policies do not cover termination payments. This is because under insured swaps, the issuer's rating trigger for early termination becomes applicable only to the extent that the insurer has also suffered a significant ratings downgrade. The extremely low ratings volatili-

ty of 'AAA' rated monoline bond insurers combined with the overall stability of municipal ratings indicates that a termination event due to coincidental rating downgrades is an extremely remote possibility. In terms of counterparty risk mitigation, swap insurance can be beneficial to the issuer because insurers may require swap dealers to post collateral under credit support annexes, to the extent the counterparty suffers a credit event.

Risks

The primary risk under swap insurance policies is the credit risk of the insurer. If the insurer's credit deteriorates significantly, the issuer is likely to have to post collateral in order to maintain the hedge; otherwise, the swap may be subject to termination. Some issuers will purchase swap termination policies to mitigate this risk. However, the monoline bond insurer industry has had an extraordinary history of credit stability and presents a very low probability of an issuer experiencing this risk. A secondary risk of swap insurance includes the oversight and legal restrictions imposed by insurers under swap policies. Because the insurer is assuming the issuer's credit risk for the duration of the swap transaction—often 20 years or more—insurers maintain certain control rights under the insured swap and insert various legal provisions into an issuer's bond documents. For example, so long as the insurer has not suffered a credit event, insurers reserve the right to allow voluntary termination of swaps and sometimes place limitations on additional swaps. These restrictions may become problematic if the issuer needs to restructure the swap or enter into additional swaps for economic reasons. Insurers also typically require that a series of credit protection provisions be inserted directly into the schedule to the International Swaps and Derivatives Association (ISDA) agreement, including collateralization by the counterparty. These protections are typically positive for the issuer's credit quality, although they may impact the economics of the transaction. Also, in some cases the insurer has the right to direct the issuer to terminate the swap early if the issuer has experienced an event of default (as defined under ISDA swap documents). Standard & Poor's is not overly concerned about insurer-directed termination clauses due to an event of default since these risks are already reflected in the issuer's rating. ■

Debt Derivative Profile Scores

Standard & Poor's Ratings Services has revised its criteria for Debt Derivative Profile (DDP) scoring 18 months after having implemented the methodology. Standard & Poor's developed DDP scoring for U.S. Public Finance in September 2004 to enhance the analysis and transparency of municipal derivative structures and their impact on credit quality. We believe these revisions will add value to our derivative analysis, within the context of our overall credit analysis.

The revisions place more emphasis on near and intermediate term risks and relatively less emphasis on longer-term risks that do not add or detract materially from an issuer's rating.

We received numerous and varied responses to our request for comments on the proposed revisions to the DDP from all sectors of the municipal bond market, including issuers, dealers, investors, and financial advisors. We considered all comments in making our final determination of the criteria revisions. This criteria piece supersedes all prior criteria reports on the DDP.

Revisions To Scale And Weightings

Standard & Poor's is revising the DDP scale to an "enhanced" four point numerical scale from a five point numerical scale. The enhancement consists of eliminating the score of '5' and adding half points (1.5, 2.5, 3.5) to the 1, 2, and 3 risk categories. Furthermore, all numerical scores will be paired with a risk descriptor that will be consistently used to characterize the numerical DDP score. The enhancements provide greater granularity within the '1' through '4' scale. The revised DDP scores are as follows:

Additionally, Standard & Poor's has revised weightings for component scores and eliminated several scored factors within the collateral and termination risk analysis. Details of all the revised DDP scoring methodology are described below. The revised criteria results in recalibrated scores for all issuers (see accompanying article, "Current List Of DDP Scores", March 27, 2006, RatingsDirect).

Due to the criteria revisions discussed in this report, 271, or 54% of the 505 scores changed. Of the 54% that changed, 26% were revised upward (got worse), and 28% were revised downward (got better). Eight issuers, or less than 2% of the total scores changed more than a half-point (0.5) as a result of the recalibration. All others changed up or down by a half point only.

Although many factors are considered, the DDP scores principally indicate an issuer's potential financial loss from over-the-counter debt derivatives (swaps, caps, collars) due to collateralization of a transaction or, worse, early termination resulting from credit or economic reasons. DDPs are integrated into Standard & Poor's rating analysis for swap-independent issuers and are one of many financial rating factors. Standard & Poor's considers tax-secured GO bonds and general revenue bonds—health care, higher education, transportation, and utility—as swap-independent, as absence of the swap would not preclude the issuer from repaying its bonds. Swap dependent issuers, mostly housing and structured financings, are not eligible for DDPs since ratings on these transactions already incorporate cash flow stress testing of all derivative risks. However, state housing finance agencies, the largest issuers of swap dependent issues, are eligible for DDPs as part of issuer credit ratings, since these ratings apply to the agency's general credit and not to any structured financing specifically.

Background

Over-the-counter debt derivatives, such as interest rate swaps and caps, have for decades been used as hedges in the capital markets, but appreciably by municipal issuers only in the last several years. Issuers, investors, regulators, and citizens have become increasingly focused and concerned about public purpose entities' involvement in what was once exclusively a corporate risk management tool. Many issuers—traditionally, fiscally conservative entities—spurred by rising expenses, restrictive refunding rules, and revenue limitations, have started to use derivatives as hedges to lower borrowing costs and reduce interest rate risk. As a fixed cost, debt service is a difficult budget item to control and swaps can provide some expenditure relief. Several states, including Pennsylvania, Michigan, and North Carolina, have granted statutory authority to local jurisdictions to enter into hedges for debt, further fueling the surge in municipal derivatives activity. In the health care, nonprofit, and utility sectors, derivatives have provided competitive advantages when used in conjunction with traditional financing techniques. In all cases, debt derivatives have introduced new risks and altered the credit profiles of issuers. However, as evidenced by the preponderance of DDP scores of '2' or less (75%), it is evident that most issuers scored to date have prudently approached their derivatives activities.

Standard & Poor's originally developed DDP scores to enhance the transparency of municipal derivative structures and their overall impact on credit quality. Derivative impact has always been a part of Standard & Poor's analysis; the DDP scoring method incorporates existing municipal swap rating criteria and codifies that criteria into an easy-to-understand risk score.

Interpretation

Final DDP scores of 1, 1.5, and 2 indicate that the credit risk from debt derivatives is minimal to low, whereas DDPs above 2 indicate that there is a moderate or high degree of risk from the swap transactions. Low DDP scores are one factor of many included in the credit analysis that determines a rating and are not in and of themselves an indication of upward rating potential or an endorsement of any specific derivative transaction as being beneficial to the issuer's financial position.

Furthermore, moderate to high DDP scores are also one factor of many and do not in and of themselves indicate a potential rating downgrade due specifically to derivatives, or that any specific transaction will not benefit the issuer's financial position. As part of the rating analysis, Standard & Poor's will cite an issuer's overall DDP score in conjunction with the net variable interest exposure ratio. In some cases, we may also cite DDP component scores to highlight high component scores, speculative transactions, or transactions entered into under fiscal stress, that may be indicative of other fundamental credit weaknesses.

To determine whether a moderate to high final DDP score, high net variable exposure, or any noteworthy component scores are sufficient to influence an issuer's rating, we will seek to determine an issuer's derivatives portfolio's maximum potential exposure (MPE), which is a value-at-risk (VAR) calculation of a derivatives transaction. Net variable interest rate exposure, on the other hand, measures the potential risk to an issuer's revenue stream and reserve levels resulting from rising interest rates (see

DDP Score	Risk Descriptor
1.0	Minimal
1.5	Very low
2.00	Low
2.5	Low-to-moderate
3.0	Moderate
3.5	Moderate-to-high
4.0	High

Additional Factors below). A high overall DDP score, component scores, high net variable exposure ratio, or a speculative transaction can be partially or fully mitigated as negative rating factors to the extent an issuer has sufficient liquidity reserves or a robust cash flow stream to offset the worst-case financial risk. On the other hand, if financial exposure is not offset at the issuer's current rating level, this is a cause for concern and could be a reason for a negative rating action.

Debt Derivative Profile Scoring Criteria

The DDP is a weighted average of four factors, each of which is scored on a scale from 1 (minimal risk) to 4 (high risk). The four factors that comprise the DDP are:

- Issuer collateral posting and termination risk (35% weight);
- Counterparty termination credit risk (15% weight);
- Economic viability of the swap structure (15% weight); and
- Quality of swap and debt management policies and procedures (35% weight).

Standard & Poor's has determined that more weight should be placed on management and the risk of termination and collateral posting due to the near and intermediate term risks inherent in these factors. Furthermore, counterparty credit risk and the economics and cash flow strength of an individual trade (economic viability), while important over the long-term, are both relatively less important from a near to intermediate term credit risk perspective.

We perform the DDP analysis using documentation and representations provided by the issuer (swap management policies, business plans) and the swap dealer combined with proprietary statistical models. Due to the single agreement concept, scores for issuer collateral posting and termination risk and counterparty termination credit risk are derived by evaluating the International Swap Dealers Association Inc. (ISDA) document, since the legal terms and conditions are consistent for an unlimited amount of related transactions.

Termination and collateral posting risk

Termination and collateral posting risk is scored on a 1 through 4 scale based on the risk that the issuer will be required to post collateral or terminate a swap on an involuntary or voluntary basis. The weighting for termination and collateral posting risk is 35% due to the potential impact on an issuer's liquidity reserve position.

Analytically, collateral posting in favor of a swap dealer is equivalent to payment of a termination fee due to the restricted nature of collateral on an issuer's balance sheet. To determine a final termination and collateral posting risk score to be used in the DDP, Standard & Poor's will score and weight three factors that could lead to a collateral posting or early swap termination. The three scored termination and collateral posting risk factors include:

- The likelihood of an involuntary event of default or termination or collateral posting due to ratings downgrades, or a likelihood of voluntary termination under unfavorable market conditions (50% weight);
- The issuer's historical ratings volatility (number of downward rating or negative outlooks/CreditWatch listings in last three years; 30% weight); and
- Average swap durations applicable to the ISDA document (less than 10 years, 10-15 years, 15-20 years, greater than 20 years; 20% weight).

We will assign the lowest termination and collateral posting risk scores for swaps with a relatively wide ratings trigger spread, low ratings volatility, and overall short swap durations (reduced likelihood of a rating transition). There may be mitigating factors that would warrant a termination and collateral posting risk score of either 1 or 4 for specific transactions. In these cases, these transactions will be separated apart from the other transactions applicable to the ISDA document for scoring purposes.

Factors that warrant a termination and collateral posting risk score of 1, include:

- No material events of default or termination; and/or
- Issuer has an option to terminate the swap at any time, for any reason, at little or no cost.

Factors that warrant a termination and collateral posting risk score of 4, include:

- Events of default or termination, other than ratings triggers, that are considered likely to occur over the life of the transaction; and/or
- Speculative transactions where there is a distinct possibility of early, voluntary termination by the issuer (if such an option exists) under adverse market conditions, and/or
- Unfavorable swap options (swaptions), where the dealer owns the option to impose an unfavorable or speculative transaction on an issuer.

Counterparty Rating	Counterparty Risk Score
'AAA' 'AA+', 'AA', or 'AA-'	1
'A+'	2
'A' and 'A-'	3
'BBB+' and lower	4

Of the myriad credit events contained in a municipal interest rate swap, the "additional termination event" of a rating downgrade trigger, or collateral posting under a credit support document, are the most likely to occur since they are triggered by involuntary credit events. Other standard ISDA events of default and termination—failure to pay, bankruptcy, merger without assumption, and so forth—are incorporated into ratings. For this reason, we will score, as a key factor for this component, the likelihood of an issuer (or swap insurer) triggering termination or collateral posting based on our rating transition and default data. The credit "spread" or gap between the issuer's (or swap insurer's) current rating and the meaningful collateral or termination rating trigger level is determined and scored appropriately. For swaps with collateral provisions, Standard & Poor's attempts to discern the meaningful collateral rating trigger through analysis of the swap's actual maximum potential exposure compared to the issuer's liquidity reserve levels. Once the meaningful collateral rating trigger is determined, Standard & Poor's is able to accurately score termination and collateral posting risk using the appropriate rating trigger.

The final score for the termination and collateral posting risk section is the product of the weighted average of ISDA swap document scores. Weightings are based on the risk-adjusted notional amount of swaps provided by a counterparty relative to the issuer's total risk-adjusted swap notional amount outstanding. Standard & Poor's adjusts each swap's notional amount based on its interest rate sensitivity relative to a baseline swap's sensitivity, effectively placing less emphasis on swaps of shorter durations and more emphasis on swaps of longer durations. The baseline swap is a fully amortizing swap with an average life of 19 years. This "dollar duration" methodology captures swaps' sensitivity to changes in interest rates and is used as a proxy, for scoring purposes only, of the swap's maximum potential exposure. Swaps with higher volatility, therefore, have a greater impact on the termination and collateral posting risk analysis than swaps with lower volatility.

If an issuer has scored a 3 or 4 on any of its ISDA documents or on the termination and collateral posting risk score itself, Standard & Poor's will evaluate the actual MPE under the applicable transaction(s) and compare it to the issuer's unrestricted reserves; that financial analysis will be factored into the rating (see Interpretation above for more details).

Counterparty risk

The counterparty risk section of the DDP is scored on a 1 through 4 scale based on the likelihood of a counterparty default, that could cause the issuer to lose its ability to replace its hedge position. Counterparty credit risk is generally low for the majority of issuers due to usage of highly rated counterparties (typically rated 'A+' or higher) and provisions for full collateralization of swaps prior to significant rating counterparty downgrades. For this reason, and the fact that most municipal bond transactions are not swap dependent—in the sense that the loan does not require the swap for repayment—counterparty credit risk is weighted at 15% in the overall DDP analysis.

To determine a final counterparty risk score to be used in the DDP, Standard & Poor's will score and weight the likelihood of a counterparty credit deterioration based on a rating transition to the 'BBB' rating level. The 'BBB' rating level is used since this is the lowest rating permitted under Standard & Poor's rating criteria for counterparties in U.S. public finance swap transactions. Furthermore, to the extent a counterparty is downgraded to below 'BBB' the likelihood of termination payment recovery is significantly diminished due to the potentially massive collateral calls from the counterparty's other creditors. Similar to the termination and collateral posting risk scoring section, Standard & Poor's does not consider standard ISDA swap event of default and termination factors as significant termination events since they are already incorporated into counterparty ratings. Therefore, a ratings downgrade is the credit event most likely to occur. The counterparty risk scoring methodology gives issuers credit for securing highly rated counterparties and penalizes issuers for securing lower rated counterparties. Similar to the termination and collateral posting risk section, counterparty risk scores are assigned by ISDA document and weighted according to risk-adjusted notional amounts. The final score for counterparty risk will be the weighted average of each counterparty's ISDA swap document score, with weightings based on the risk-adjusted notional amount of swaps provided by a counterparty relative to the issuer's total risk-adjusted swap notional amount outstanding. If an issuer has scored a 3 or 4 on the counterparty risk component, or on any specific ISDA document, Standard & Poor's will evaluate the MPE under the applicable transaction(s) and compare it to the issuer's unrestricted reserves; that financial analysis will be factored into the rating (see Interpretation for additional information).

At this time, our rating transition and default data indicate that counterparty risk scores are as follows:

Notwithstanding these counterparty risk scores, mitigating factors that would warrant a counterparty risk score of 1, include:

- Full collateralization of swaps by the counterparty prior to a downgrade to below 'BBB'; or
- A provision for the counterparty to secure, at its cost, a third-party guarantee or replacement counterparty rated at least 'BBB' in the event of a downgrade of the original counterparty to below 'BBB'; and
- Provision for mandatory counterparty termination below 'BBB', or
- A provision that allows the issuer to optionally terminate the swap, at any time, for any reason.

Economic viability

Economic viability is scored on a 1 through 4 scale based on whether the issuer could have an incentive to restructure or voluntarily terminate all or a portion of its swap transactions due to the ineffectiveness of the hedges over the long term. We have determined that it is important to analyze the economics and long-term cash flow strength of derivative structures since the voluntary termination or restructuring of the hedge through execution of additional hedges is potentially costly and time consuming, accompanied by real economic and opportunity costs. These costs are in addition to the unexpected interest costs resulting from the ineffective hedges. However, economic viability is of relatively less importance from a near to intermediate term credit risk perspective relative to termination and collateral posting risk or management. For this reason, the economic viability component of the DDP score will be assigned a 15% weighting, similar to counterparty risk.

To determine long-term economic viability, we will stress test the potential ineffectiveness of an issuer's swap portfolio through a proprietary basis, or variable interest expense, model. The model incorporates our high and low stress interest rate curves and tax-exempt bond price assumptions. Scores are assigned based on the overall amount of long-term basis exposure. The lower the overall basis exposure on a portfolio level, the lower the economic viability score (scores of 1 or 2), while the higher the overall basis exposure, the higher the scores (3 or 4). Lower scores reflect the potential for higher economic viability of the issuer's swap structure over the long term while higher scores indicate lower economic viability over the long term. In some cases, issuers with high economic viability scores may in fact have achieved high economic viability at least in the short-term since the derivative structure itself made the transaction possible in the current market environment. While this is a valid argument in the short run, high potential ineffectiveness or basis exposure can be problematic in the long-term as a variable, or unknown, budget expenditure leading to or exacerbating cash flow stress.

Management

Management is scored on a 1 through 4 scale based on our assessment of management knowledge and sophistication through analysis of its swap and debt management policies and overall strategy. Management is weighted at 35% due to the significance of an issuer's knowledge and sophistication in structuring its derivative contracts to both minimize risks and achieve the intended purpose of the hedging program. We consider various factors in assessing the quality of management of the swap program, including the quality of the issuer's written policy and hedging strategy. The written policy should be original and tailored to the issuer's unique situation and incorporate near, intermediate, and long-term strategies and parameters. Factors considered in assessment of the overall quality of management and the written policy and plan include:

- Formal approval of written documents by the issuer's governing body;
- Swap risks identified and discussed in the context of the issuer's financing plans;
- Annual management review and discussion of hedging strategies;
- Commitment to complete and comprehensive disclosure of swaps in audited financial statements above and beyond required GASB or FASB parameters;
- Monitoring of swaps with semi-annual valuation by a third party
- Policies on legal provisions, including optional swap terminations, collateral, or swap insurance; and;
- Counterparty diversification or a minimum ratings policy for counterparties;
- A net variable rate exposure policy.

A comprehensive swap management policy will include the above consideration and should also include a discussion of risks and rewards of swaps and variable rate debt, senior management personnel responsible for monitoring swap risks, maximum level of variable rate debt and swap exposure, counterparty exposure limitations, collateral policies and procedures, and a detailed description of and rationale for all derivative transactions entered into or that are contemplated.

Additional Factors

Swap valuation

An issuer's swap portfolio may be stress tested to determine the maximum potential exposure if the issuer has a high final DDP score, high net variable

exposure, or any noteworthy component scores. The MPE measures how much a counterparty could expect to lose on a transaction over the life of the transaction if the other counterparty failed to perform its obligations on the swap. MPEs are typically two standard deviation value-at-risk calculations using relatively standard techniques for projecting potential paths of future interest rates. MPEs are influenced by the swap's notional amount, average life, and the terms of the trade—fixed-to-floating swap, floating-to-fixed, floating-to-floating—and the optionality embedded in the swap. We will ask the issuer to calculate a MPE for swaps that are in danger of terminating early. If necessary, we will use the MPE and measure it against the issuer's liquidity reserves to determine the credit impact of swap termination.

Net variable rate exposure

We will calculate a net variable-rate interest exposure ratio for all issuers of variable rate debt and/or swaps for use in conjunction with any DDP score. The net variable exposure measures the potential risk to an issuer's revenue stream and reserve levels resulting from rising variable rates. Net variable rate exposure ratio incorporates all current interest rate derivatives, fixed and floating rate debt, and any natural hedges (i.e., qualified investment assets designed to offset interest rate risk). The exposure ratio will also be calculated on a pro forma basis to gauge prospective levels of variable exposure, given either proposed derivatives structures or future bond issuance. For example, some issuers have entered into swaptions that may become effective in the future, depending upon the level of interest rates. If we are concerned that a counterparty may have an incentive to terminate a fixed-to-floating rate swaption on an issuer, we will assess the potential exposure of future variable interest rates for the issuer through the net variable rate exposure calculation. Another example is an issuer that partially hedges a 30-year variable rate issue for 10 years with a floating-to-fixed rate swap. Through this simulation, we are able to determine the impact of rollover risk, or the risk that the issuer will not be able to re-hedge its variable rate exposure upon expiration of the swap.

Conclusion

In an effort to hedge risks, many entities are entering into derivative instruments that have a long, successful history. Understanding the risks associated with these types of agreements is critical. With our DDP, Standard & Poor's adds an independent evaluation of the risks associated with certain derivatives and the potential impact on credit quality and ratings. ■

Long-Term Municipal Pools

Standard & Poor's Ratings Services criteria for rating pools of municipal obligations reflects the fact that the likelihood of default of bonds secured by a pool of assets is a function of both the expected distribution of defaults within the asset pool, and the level of over-collateralization available to cure those defaults. The likelihood that an obligor will cause a bond pool to default depends on the obligor's credit quality and the influence of that obligor on the total performance of the pool (the pool's relative concentration or diversity). To the extent that additional funds (through reserves or coverage) can provide protection against a certain level of obligor defaults, then a rating commensurate with the probability of exceeding that amount of loss may be assigned to the pool bonds. Higher pool ratings therefore require higher over-collateralization to protect against higher cumulative default probabilities.

In the absence of any over-collateralization, step-up obligations on the part of participants, or other structural enhancements, pool ratings will typically fall to a level at or near the rating of the lowest-rated participant. Pool programs without step-up provisions are not eligible for ratings above the rating of the weakest participant if the pool contains fewer than 10 separate obligors.

While the theory behind the pool criteria would appear straightforward, the application proves more difficult. Determining the cumulative default probability distribution for a pool of obligations becomes extremely difficult as the size of the port-

folio increases, especially when one allows for correlation among participants.

Modeling Loss Rates

More incremental analyses of pools became possible as computers became faster, and the value of iterative statistical methods was better understood. While often the actual default probability distribution of a specific pool may not be determined theoretically, it can be approximated and observed through repeated random trials, just as the repeated flipping of a coin will reveal the true probability of heads to be 50%. Standard & Poor's quantitative group within structured finance has developed software that uses a Monte Carlo methodology, featuring such an iterative process to estimate the default rate probability distribution for any pool entered. The software has now been adapted to allow for the analysis of municipal pools as well. From this distribution is derived a set of stressed default rates which vary according to the pool rating desired. This methodology fully captures the effects of obligor concentration, correlation, and obligor credit quality in a simultaneous manner, thus permitting more insight into incremental changes in pool credit quality as pool composition evolves.

To derive the portfolio default probability distribution, a default matrix is used to assign a specific default probability to each participant obligation based on the nature of the participant, its credit quality, and the obligation's maturity.

Model Inputs

To run the simulation, the model requires each participant's asset type, par amount, rating, and maturities. For most governmental entities, the asset type will be the postal abbreviation for the state in which the participant is located. For non-profit organizations and certain other sectors, a sector-specific code should be used (see table 1). The asset type designation helps determine the correlation between participants. Model inputs, or assets, are at the maturity level, so a pool of 20 participants with amortizing loans, each with 20 years remaining on their obligations under the pool would have 20 x 20 or 400 assets. Alternatively, each loan may be entered as a single asset, using the final maturity or the weighted average maturity. Maturities are required as the model uses the participant's rating, security, and length of maturity to arrive at participant default probabilities. The model then runs a series of trials from which the default probability distribution and resulting stressed default rates are generated. While Standard & Poor's will distribute versions of the model so that pool programs may use and become familiar with the software, we will also require that participants provide the necessary data so that we may run the default analysis in-house before issuing a rating.

Cash Flow Analysis

Once default stress levels have been established, the issuing agency will be asked to prepare cash flows incorporating the default assumptions. Because the model produces aggregate portfolio default rates, default rates should be applied against aggregate repayments available to service debt each year that defaults are recognized. To translate the percent of asset or loan portfolio defaults into amounts needed to absorb these defaults, recovery rates must also be considered. Recovery rates will vary based on the nature of pool participants and the security being pledged (see table 1). For state revolving funds (SRFs) and other government or quasi-government public purpose pools backed by water and sewer utility pledges or GOs, the assumption that obligors remain in default for four years and then begin paying principal, interest, and other required payments in full (at 100%) will continue. Pools consisting of other types of obligations or that lack government motive and oversight will have recovery rates less than 100% after the four-year default period. The methodology employed by the program administrators in granting loans to participating entities and monitoring the ongoing financial and operating status of the borrowers may also influence duration assumptions.

While the Monte Carlo model reveals how much of the pool should be expected to default, it reveals nothing about the expected timing of defaults. Standard & Poor's will assume that all defaults begin to occur over a four-year period, with 25% occurring each year over the period. The end result is that default scenarios will show some level of default over a seven-year period (rather than a four-year period), but 100% of the assumed defaults will occur in only one year (rather than four years). Put another way, if the assumed default rate for a given portfolio at a given rating is 40%, then 25% x 40%, or 10% of aggregate debt service should be defaulted in the first year of defaults, 50% x 40%, or 20% in the second year, 75% x 40%, or 30% in the third year, and 100% x 40% in the fourth year. Finally, recovery levels should be factored in to arrive at net defaulting amounts in each year. In year five of the previous example, if we assume 90% recovery, then of the 10% of defaults that began in year one, 10% x 90%, or 9% would begin paying again, resulting in a net default rate of 40%-9%, or 31% (see table 2).

A pool's vulnerability to participant defaults may vary over the life of the rated bonds, so cash flow runs should also demonstrate that the pool can withstand the stressed default rate at any point in

the program during which bonds are outstanding. The number and type of runs needed to demonstrate this fact can vary depending upon the program's structure. If the most vulnerable point in a program's amortization schedule can be specifically identified, then cash flows demonstrating ample reserves or coverage over that period will suffice. For programs that allow the release of funds as bonds mature or rely on coverage from investment earnings to survive assumed participant defaults, this may be more difficult and additional runs may be necessary.

Management Considerations

The ability of a pool program to survive associated stressed default rate assumptions remains the backbone of Standard & Poor's criteria. Program management aspects, however, do play a role, particularly in placing the pool rating within the rating category and in establishing the rating for a new program. Management factors analyzed include underwriting criteria and procedures, loan servicing track records and capabilities (including the sensitivity of these capabilities as the program grows), marketing processes, and participant monitoring and control procedures. Strong management practices may overcome weak legal provisions if Standard & Poor's believes such practices will continue and thus better predict the long-term performance of the program.

Legal Structure And Required Documentation

Standard & Poor's will review all relevant documents associated with each transaction to assess the legal structure and ensure that it corresponds to the assumptions presented by the program sponsor. Documentation required to rate a pool program includes:

- List of each asset in the pool including obligor/borrower name, state, security pledged, maturity, par outstanding as of closing, and ratings or credit estimates.
- Cash flows summarizing total annual payments and balances available for the life of the pool, both with and without assumed default rates.
- All trust/legal documents, including an official statement or offering memorandum.
- Underwriting criteria, loan or lease terms, servicing guidelines and history of loan/lease performance.
- Information regarding program sponsor (for example, management practices).

Additional documentation may be required depending on the nature of the transaction. Typical issues associated with the review of legal documents include:

- Does the flow of funds outlined in the indenture match the intended management plan?
- Does it provide sufficient timing to insure that sufficient funds will be in desired accounts to meet shortfalls in the event of participant defaults?
- What is the nature of the participant loan agreement (security terms, etc.), and what are the implications for the credit quality and ongoing functioning of the program?
- Do the legal provisions leave bondholders exposed to extraordinary risks such as investment risk or sudden changes in program composition or administration such as through loan prepayment, loan de-pledging, or the release of other funds.

Investment Issues

To the extent that program reserves are relied on to provide the over-collateralization necessary to sustain a particular rating, the investment of these reserves should not pose additional risks relative to the bond rating. Accordingly, reserves should be invested with entities rated at least as high as the program's bond rating, although 'AAA' rated programs may use investment agreement providers rated as low as 'AA-' in certain instances.

If programs utilize investment agreements that allow the issuer to terminate the agreement, without a penalty to the remaining principal within 30 days, Standard & Poor's will treat the instrument as a short-term investment and look to the provider's commercial paper rating to determine the eligibility of the investment—but only if program cash flows are not dependent on being able to achieve the same interest rate on a subsequent investment agreement. Alternatively, 'AAA' programs may use providers rated as low as 'AA-' if certain downgrade provisions exist within the investment contract (See Public Finance Criteria: Investment Agreements For Municipal Revenue Bond Financings).

Finally, issuers may choose other investment options, such as secondary guarantors or joint guarantee agreements to ensure a high rating for their investment and minimize the risk of substitution.

State Revolving Funds

The SRF financing vehicle has become an important tool in many states to fund water and wastewater infrastructure projects. Since the establishment of the clean water SRF through revisions made in 1987 to the Clean Water Act (which targets the need to repair or construct wastewater infrastructure designed to handle growing populations and more stringent environmental measures), the program has grown and is arguably one of the most successful federal programs of the past 20 years in terms of projects funded per federal dollar allocated. In

1996, with the inclusion of the Safe Drinking Water Act, the breadth of projects funded using this revolving fund vehicle expanded to include potable water-related projects as well. SRFs are considered to be the strongest municipal pools, as program administrators, along with associated state environmental and health agencies, usually have significant regulatory powers with which to compel participant compliance. In addition, programs enjoy large equity positions due to state and federal contributions and the relative inability of states to raid these funds for other purposes.

Many state revolving fund programs have implemented cross collateralization features between their clean water and drinking water programs to enhance credit quality. If Standard & Poor's has deemed the method effective through an analysis of the flow of funds and timing of payment releases, then stressed default rates will be determined as if all participants were part of one large program, even if multiple indentures are involved, resulting in legally separate pledges. Such mechanisms, however, can make cash flow analyses more difficult, as revenue streams under different indentures may be subject to severe stresses at different points in time. Determining what period over the life of the combined program is most susceptible to participant defaults may therefore prove extremely difficult, and a more incremental cash flow analysis may prove useful. Presenting cash flows on an incremental basis, however, does not require the re-estimation of pool stressed default rates on an incremental basis as well. Standard & Poor's analysts will assist issuers in determining what analyses are needed or most appropriate.

Because of the stability and strong state and federal protection associated with these programs, Standard & Poor's may give credit for other programmatic funds available to cure defaults, even though they may not be part of the trust estate directly securing the bonds. For these funds to be considered in the analysis, the program should have written policies in place that provide for the timely transfer of these other funds to replenish bond dedicated reserve draws once drawn upon. Standard & Poor's will review the asset quality and liquidity of these funds as well as the program's treasury management practices as part of its ongoing surveillance to ensure that sufficient funds remain available to replenish draws.

Although Standard & Poor's may give credit to other funds available, it still expects that a majority of funds needed to maintain the rating will be pledged to bond holders and invested accordingly. Should this not be the case, the analysis would shift away from the focus on the pledged loan portfolio

Table 1 **Municipal Pool/CDO Sectors**

Sector	Sector Code	Recovery Range (%)
GO	State of obligor	80-100
General fund pledge/lease appropriation	State of obligor	70-85
Moral obligation	State of obligor	40-55
Water-sewer/solid waste	State of obligor	80-100
Sales/income tax/gas tax	State of obligor	80-100
Other special tax	State of obligor	70-85
Tax increment	State of obligor	70-85
Spec assessment	State of obligor	70-85
Public power/gas	State of obligor	70-85
Charter schools	State of obligor	40-55
LOCs	Industry code	40-55
IRBs	Industry code	40-55
Public universitites	State of obligor	80-100
Private schools and universities	Industry code	40-55
Health care	Industry code	40-55
Other 501C3s	Industry code	40-55
Housing	State of obligor	Varies
Airports	Industry code	70-85
Toll roads/parking/garvees/ports/transit	Industry code	70-85

and assets that provides the dominant support for most state revolving fund ratings. In such a case Standard & Poor's analysis would expand to include not only the asset quality and liquidity of related funds, but also overall program income and balance sheet performance, including non-leveraged program areas. Management practices, state-specific regulations, and statewide economic conditions could also play a larger role in these instances.

Other Municipal Public Purpose Pools

A variety of pool financing programs have been established over the years to help local governments fund various types of improvements. Some programs focus on specific types of projects, others on specific types of organizations; some are instrumentalities of states, while others are single-purpose organizations supported by quasi-governmental or other organizations dedicated to serving local government entities. Each type of organization can play an important role within the context of a state's public safety, economic development, or other public interest needs.

The state-sanctioned municipal bond bank structure began in the late 1960s, and through a variety of names state bond banks have offered varied programs over the past 35 years. Although the number of bond banks has not risen substantially, many have seen a significant evolution and expansion of their programs. While the security and structure of bond bank pools varies considerably, these pools typically benefit from the fact that a state agency administers the program; this often brings stronger oversight powers or special security features contained in statutes. Bond banks may be more willing or more able than nonprofit or quasi-governmental entities to cure program imbalances if shortfalls occur. Relative to state revolving fund programs, however, bond banks may be more susceptible to changes in levels of state support.

Quasi-governmental pools are typically sponsored or administered by state level organizations

Table 2 **Example Of Applied Default And Recovery Rate For Municipal Pool**

Assume pool default rate of 40%, with 90% recovery after four years

	A	B	C	D	E	F	G
Year	Payments (due to be received before defaults) ($)	Debt service ($)	Default rate (%) 25% of 40% each year	Recovery rate (%) Four-year recovery lag	Net default rate (%) (C–D)	Defaulted payments ($) (E–A)	Defaulted debt service ($) B–(A–F)
1	5,000,000	4,000,000	10	N/A	10	500,000	N/A
2	5,000,000	4,000,000	20	N/A	20	1,000,000	N/A
3	5,000,000	4,000,000	30	N/A	30	1,500,000	500,000
4	5,000,000	4,000,000	40	N/A	40	2,000,000	1,000,000
5	5,000,000	4,000,000	40	9	31	1,550,000	550,000
6	5,000,000	4,000,000	40	18	22	1,100,000	100,000
7	5,000,000	4,000,000	40	27	13	650,000	N/A
8	5,000,000	4,000,000	40	36	4	200,000	N/A
9	5,000,000	4,000,000	40	36	4	200,000	N/A
10	5,000,000	4,000,000	40	36	4	200,000	N/A
11	5,000,000	4,000,000	40	36	4	200,000	N/A
12	5,000,000	4,000,000	40	36	4	200,000	N/A
13	5,000,000	4,000,000	40	36	4	200,000	N/A
14	5,000,000	4,000,000	40	36	4	200,000	N/A
15	5,000,000	4,000,000	40	36	4	200,000	N/A
16	5,000,000	4,000,000	40	36	4	200,000	N/A
17	5,000,000	4,000,000	40	36	4	200,000	N/A
18	5,000,000	4,000,000	40	36	4	200,000	N/A
19	5,000,000	4,000,000	40	36	4	200,000	N/A

N/A—Not applicable

designed to provide assistance and technical support to their members—that are typically local governments. Examples of such organizations include state-level chapters of the League of Cities, the Association of Counties, and the Rural Water Association. While these programs often have a certain amount of technical expertise, they may also rely on outside financial consultants to administer most of the financial responsibilities associated with the pool program. Because these organizations are usually nonprofits with limited liquidity, funds available to be pledged as over-collateralization are usually also limited. While these factors often limit ratings on these entities' pooled loan programs relative to state revolving funds, they may still attain high investment grade ratings if managed effectively with sufficient diversity and support.

Economic development pool programs differ from other municipal pool programs in that, while the program sponsor and administrator is usually a state or local government agency, pool participants are often private entities, and the credit quality of these participants is generally lower. Accordingly, these programs typically have some percentage of pledged loans in default at any given time, in contrast to most government-based pools where few if any defaults occur over the entire life of the program. Although corporate loan defaults are more likely, this does not pose a real threat to bond repayment if policies and provisions exist to ensure that default rates remain manageable given credit support under the program. Standard & Poor's default model accounts for the higher risk associated with private sector borrowers, resulting in higher required over-collateralization levels being required for a given rating level. Nevertheless, this lower participant credit quality, coupled with limited state or federal equity contributions, often limits the ratings on pool programs designed to promote economic development through private lending.

Lease Pools

Standard & Poor's rates lease pools typically sponsored by nongovernmental entities. Assets securing these transactions are usually equipment rather than buildings, therefore the useful life of the equipment relative to bond maturity and the likelihood that the lessee will otherwise remain current on the lease due to their desire to maintain possession of the equipment are of paramount importance. Because of their typically short duration, lease pools rated to date generally enjoy lower required default tolerances than do long-term debt obligations, reflecting the direct relationship between default risk and maturity. The risk of nonappropriation will lead to lower assumptions of credit quality and recovery, however, somewhat offsetting the benefit of the short maturity. Unlike SRFs and state bond bank pools, lease pools may also be backed by assets in different states, and the model gives credit for this additional diversification.

Standard & Poor's will discuss with the program sponsor the key criteria used in underwriting credit risk. Staffing levels, experience of the originator's credit personnel, and any areas of credit specialization may also be discussed. A critical aspect of underwriting is a review of the essentiality of the leased equipment. Standard & Poor's considers the following types of equipment, among others, to be essential:

- Police and fire vehicles
- Communications equipment
- Energy management systems
- Computer hardware and software
- School buses

Credit approval policies should be well documented, highlighting internal credit authorities and transaction approval procedures. Verification of equipment acceptance, lessee review, documentation requirements and internal auditing are also components of a sound underwriting policy.

The obligation of the servicer to bill and to collect is critical and can directly affect pool performance. When evaluating the strength of an equipment lease servicing operation, it is necessary to examine the billing and collecting procedures, when and how delinquent obligors are notified, and if staffing and systems adequately handle the demands of compliance and reporting.

The substance of Standard & Poor's legal analysis depends on the structure of the transaction presented, but is typically akin to that for a synthetic floater structure (see Public Finance—Structured criteria for more information).

Municipal Collateralized Debt Obligations

Collateralized debt obligations, or CDOs, are structured vehicles that are similar to leveraged closed end funds. A majority of CDOs are actively managed and invested in different classes. Over the last several years, municipal assets have been used as a portion of the assets securing some CDOs, and a few transactions have contained only municipal securities as collateral. At the core of the CDO is a bankruptcy-remote, special purpose entity (SPE) that issues securities to investors in the form of several classes that are tranched into differently rated and some unrated securities. Each class of securities represents a different level of risk and reward associated with the asset pool. The most senior securities have credit ratings higher than the average ratings of the collateral pool, with lower tranches being rated below the seniors. The first-loss tranche is equity (or preferred shares) that is typically not rated.

The proceeds from the offering are typically used to purchase a portfolio of assets, or may be held in the SPE. Should some of the assets fall into default or trigger some of the transaction covenants, excess spread is first used to cover any losses. However, there might not be sufficient assets to cover these losses, and the lowest level, or more junior securities may take a loss. Payments to each of the liability classes are dictated by a stipulated priority of payments that reallocates the risk and rewards associated with the assets. This allows the CDO issuer to tailor the liabilities to meet the risk/return profiles of a broad range of investors and to attract additional groups of investors. These structures appeal to different investors, collateral managers, and sponsors for a variety of reasons, including participating in new asset types, capitalizing on arbitrage opportunities, or to transfer credit risk.

The specific steps of the CDO transaction rating process leading to the rating of a transaction are as follows:

- Reviewing the structural basics and the legal structure,
- Sizing the default frequency of the proposed asset pool,
- Reviewing the collateral manager,
- Sizing the loss severity,
- Reviewing of the transaction's collateral and structural features,
- Establishing the required level of credit support for each rated tranche,
- Assigning preliminary ratings,
- Reviewing final documentation and legal opinions, if required, and finally,
- Issuing the rating(s) of the transaction.

Municipal CDO ratings are a joint effort between Standard & Poor's Structured CDO group and Standard & Poor's Public Finance Department. While public finance analysts will assist in reviewing the pledged collateral and its relevance in determining credit support levels, structured analysts will typically review the other rating aspects due to the fluid and rapidly evolving nature of the CDO markets. While the treatment of municipal assets in a CDO generally mirrors the assumptions set out in this article in terms of default and recovery assumptions and coding for correlation purposes, general CDO criteria is considerably more extensive. Interested readers should consult Standard & Poor's Structured Finance Global Cash Flow and Synthetic CDO Criteria. ■

Investment Guidelines

Formal rating requirements do not exist for investing issuers' operating funds because finance officers tend to invest conservatively based on internal policies or state-legislated restrictions that emphasize the safety of principal and liquidity over the desire for higher yields.

In the event that losses were to occur, most governments and enterprises have the financial capacity to take budget balancing actions to reduce the pressures derived from lost investment earnings. Certain issuers, such as in the housing sector, have limited revenue raising flexibility and therefore the credit quality of investments takes on greater importance. Standard & Poor's Ratings Services belief in the traditional conservatism of municipal investment practices is grounded in experience and has been confirmed in discussions with issuers on investment policy as participation in exotic and more volatile derivative securities has increased. That is good news, because with the proliferation of new investment structures, which can shift dramatically, it would be virtually impossible to regulate investment requirements to keep up with the changing environment.

Standard & Poor's rating analysis—particularly for short-term notes and commercial paper—is based on the presumption that funds are invested with the preservation of capital as the issuer's highest priority. The level of risk able to be tolerated is also a function of the issuer's level of liquidity and overall financial strength. The following investment guidelines are "common sense" investing policies that Standard & Poor's believes are followed by the vast majority of rated public finance issuers; they might be called "normal prudent practice." If Standard & Poor's identifies issuers whose practices diverge from these guidelines, it would not automatically warrant a lower rating, but it would prompt further questioning and analysis of that issuer's cash flow and liquidity needs.

Regular borrowers of short-term, seasonal cash flow notes have greater needs for liquidity and safe-

ty of principal because of the large debt service exposure that occurs at maturity of the notes; for these reasons, the guidelines presented here for investing operating funds take on more importance for such issuers, and investment practices that veer from them could be cause for rating concern. Nonoperating funds, such as endowments and pension funds, can be invested long-term while ensuring that assets and liabilities are maturity matched.

The following guidelines are suggested for investing general operating funds. Operating funds, as defined by Standard & Poor's, are those needed to pay recurring expenses, such as payroll, maintenance, debt service, and other expenses needed to provide normal essential services during the fiscal year. Issuers that deviate from these guidelines will be examined individually to determine the effect, if any, their investment practices have on their credit ratings.

'Prudent Practice'

Standard & Poor's general operating fund investment guidelines are based on what it considers "normal, prudent" investment practices with regard to maturity and liquidity, leverage, and credit quality.

Average maturity and liquidity

The weighted average maturity of the operating fund, as well as the maturity of individual securities in the fund, should be limited to one year, or as needed for the issuer's normal disbursement patterns.

Operating funds should be invested in liquid securities to meet withdrawals related to operating expenses, debt service, note payments, and so forth. Principal protection and liquidity are typically the primary goals of an operating fund and investment return a secondary goal. If the operating funds are invested in county or state investment pools, the weighted average maturity of the county or state pool should typically be one year or less.

Leverage

Borrowing through reverse repurchase agreements and other types of leveraged investments is typically limited and reflective of the risk profile of the issuer. If reverse repos are used for enhancing yield on the portfolio, the money borrowed should be invested in securities of a high credit quality and match the term of the reverse repos. Issuers that use reverse repos need to have the sophistication and skills in place to hedge collateral call and interest rate risks associated with reverse repos.

Credit quality

An entity's operating fund investments should meet the minimum credit quality standards permitted by statute, or its own investment policy. Investments can include deposits in local financial institutions that are FDIC-insured, commercial paper issued by investment-grade corporations and financial institutions, bankers' acceptances, and treasury or government agency securities.

Derivatives

For the purposes of these guidelines, derivative investments can be described as those whose yield or market value does not follow the normal swings of interest rates. They include, but are not limited to, such items as structured notes issued by agencies and corporations, "inverse floaters," leveraged variable-rate debt, and interest-only or principal-only CMOs.

These securities are volatile and can result in dramatically different market values if liquidated before maturity. Significant investment positions in risky derivatives could be viewed negatively, depending on the proportion of derivatives to total investments and the liquidity needs of the issuer. These derivatives are extremely sensitive to interest rate changes and are highly susceptible to liquidity risks.

Pools And Mutual Funds

The same guidelines regarding average maturity and liquidity, leverage, credit quality, and derivatives should be adopted for operating fund investments in externally managed investment pools. Exceptions can be made depending on the amount of nonoperating and surplus funds invested in the pool. In addition to reviewing the pool investments, the historical and projected cash flows of the pool will be examined.

While we do not require investment funds to be rated by Standard & Poor's in order to evaluate an issuer's credit quality, a public rating on the investment fund provides transparency as well as the initial and ongoing information that is asked for as part of an investment review.

Review And Oversight

Issuers should be aware of statutory investment requirements and may want to supplement statutory guidelines with a written investment policy tailored to that entity's situation. The policies should address credit quality, maturity, market valuation frequency, leverage, and derivative-type investments. Officials should be aware of such policies, and periodic reporting of compliance and performance should be in place. As part of Standard & Poor's analysis, we may request a discussion of the investment practices and how they follow written or otherwise adopted policies.

In general, the longer the maturity or duration of permitted investments—and the less liquid the securities—the more frequent the need for "mark to market" valuations of operating fund investments.

Eligible Investment Criteria For 'AAA' Rated Structured Transactions

The most widespread criteria used for investment in the secondary market relate to the category called "eligible investments." Eligible investments are those securities that the trust of a structured finance transaction is allowed to purchase for the management of its cash flow.

Fortunately, it is also the most stable category, rarely changing over time. At the same time, it is important to note that one qualifying investment, the debt obligations of the Student Loan Marketing Association (SLMA or Sallie Mae), will no longer qualify as an eligible investment after Sept. 30, 2008. The enactment of the Student Loan Marketing Association Reorganization Act will result in the gradual dissolution of Sallie Mae's GSE (government-sponsored enterprise) status, which allows Sallie Mae limited access to U.S. Treasury funds. The final dissolution date is Sept. 30, 2008. If additional Sallie Mae debt is issued, the debt must mature before that date. Sallie Mae debt obligations will continue to qualify as eligible investments for rated structured transactions until Sept. 30, 2008.

Eligible investments are typically used to temporarily house (usually 30 days or less) the cash flows related to a transaction in low-risk, short-term investments. Eligible investments may also be used for certain reserve or cash collateral accounts, where maturities may extend beyond the next payment date. In instances where the investments may be invested for up to 90 days or longer, the eligibility of investments may be further restricted, as indicated below. In no case should the following eligible investments have maturities in excess of one year. Any use other than contemplated above may not be appropriate for structured finance transactions.

Investment requirements for escrow accounts for refunded bonds are marked with an asterisk. Any security used for defeasance must provide for the timely payment of principal and interest and cannot be callable or prepayable prior to maturity or earlier redemption of the rated debt (see "Public Finance Criteria: Defeasance").

The following investments are eligible for 'AAA' rated transactions:

(1*) Certain obligations of, or obligations guaranteed as to principal and interest by, the U.S. government or any agency or instrumentality thereof, when these obligations are backed by the full faith and credit of the United States. As Standard & Poor's does not explicitly rate all such obligations, the obligation must be limited to those instruments that have a predetermined fixed dollar amount of principal due at maturity that cannot vary or change. If it is rated, the obligation should not have an 'r' suffix attached to its rating. For non-defeasance investments, interest may either be fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index. These investments include but are not limited to:

- U.S. Treasury obligations (all direct or fully guaranteed obligations);
- Farmers Home Administration Certificates of Beneficial Ownership;
- General Services Administration participation certificates;
- U.S. Maritime Administration guaranteed Title XI financing;
- Small Business Administration guaranteed participation certificates and guaranteed pool certificates;
- GNMA guaranteed MBS and participation certificates (defeasances only);
- U.S. Department of Housing and Urban Development local authority bonds; and

Indenture Investment Restrictions

Fully dependent financings

In credit or liquidity enhanced transactions, and certain highly structured housing transactions, remarketing proceeds and other monies used to pay bond debt service—whether trustee held or otherwise—should be invested in securities with ratings appropriate for the rating assigned to the issue. (For further details see "Public Finance Criteria: Review of Investment Agreements for Municipal Revenue Bond Financings").

Partially dependent financings

In transactions where certain funds may significantly contribute to the payment of bond debt service, those funds should be invested in securities with ratings appropriate for the rating of the issue. Other monies can be invested in investment-grade securities.

Non-dependent financings

All funds—whether trustee held or otherwise—should be invested in investment-grade securities.

Dependency: Determined by the level of reliance of the issue on the performance of the investments.

Maturity: Investments should mature before they are reasonably expected to be used, whether for scheduled debt service payments, or as a result of redemption provisions.

Ratings maintenance of investments: If rating of investment is downgraded, Standard & Poor's assumes that the trustee, as fiduciary to holders, will act in a prudent manner. Investment downgrades may lead to bond rating downgrades, particularly in fully dependent financings.

- Washington Metropolitan Area Transit Authority guaranteed transit bonds.

(2) Federal Housing Administration debentures.

(3*) Certain obligations of government-sponsored agencies that are not backed by the full faith and credit of the United States. As Standard & Poor's does not explicitly rate all these obligations, they must be limited to instruments that have a predetermined fixed dollar amount of principal due at maturity that cannot vary. If it is rated, the obligation should not have an 'r' suffix attached to its rating. For non-defeasance investments, interest may either be fixed or variable. If the investments may be liquidated prior to their maturity, or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and move proportionately with that index. These investments are limited to:

- Federal Home Loan Mortgage Corp. (FHLMC) debt obligations;
- Farm Credit System (formerly Federal Land Banks, Federal Intermediate Credit Banks, and Banks for Cooperatives) consolidated systemwide bonds and notes;
- Federal Home Loan Banks (FHL Banks) consolidated debt obligations;
- Federal National Mortgage Association (FNMA) debt obligations;
- Student Loan Marketing Association (SLMA) debt obligations;
- Financing Corp. (FICO) debt obligations; and
- Resolution Funding Corp. (REFCORP) debt obligations.

(4) Certain federal funds, unsecured certificates of deposit, time deposits, banker's acceptances, and repurchase agreements having maturities of not more than 365 days, of any bank, the short-term debt obligations of which are rated 'A-1+' by Standard & Poor's. In addition, the instrument should not have an 'r' suffix attached to its rating and its terms should have a predetermined fixed dollar amount of principal due at maturity that cannot vary or change. Interest may either be fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index.

(5) Certain deposits that are fully insured by the Federal Deposit Insurance Corp. (FDIC). The deposit's repayment terms have a predetermined fixed dollar amount of principal due at maturity that cannot vary or change. If rated, the deposit should not have an 'r' suffix attached to its rating. Interest may either be fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index.

(6) Certain debt obligations maturing in 365 days or less that are rated 'AA-' or higher by Standard & Poor's. The debt should not have an 'r' suffix attached to its rating and by its terms have a predetermined fixed dollar amount of principal due at maturity that cannot vary or change. Interest can be either fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index.

(7) Certain commercial paper rated 'A-1+' by Standard & Poor's and maturing in 365 days or less. The commercial paper should not have an 'r' suffix attached to its rating and by its terms have a predetermined fixed dollar amount of principal due at maturity that cannot vary or change. Interest may either be fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index.

(8) Investments in certain short-term debt of issuers rated 'A-1' by Standard & Poor's may be permitted with certain restrictions. The total amount of debt from 'A-1' issuers must be limited to the investment of monthly principal and interest payments (assuming fully amortizing collateral). The total amount of 'A-1' investments should not represent more than 20% of the rated issue's outstanding principal amount and each investment should not mature beyond 30 days. Investments in 'A-1' rated securities are not eligible for reserve accounts, cash collateral accounts, or other forms of credit enhancement in 'AAA' rated issues. In addition, none of the investments may have an 'r' suffix attached to its rating. The terms of the debt should have a predetermined fixed dollar amount of principal due at maturity that cannot vary. Interest may either be fixed or variable. If the investments may be liquidated prior to their maturity or are being relied on to meet a certain yield, additional restrictions are necessary. Interest should be tied to a single interest rate index plus a single fixed spread (if any) and should move proportionately with that index. Short-term debt includes commercial paper, federal funds, repurchase agreements,

unsecured certificates of deposit, time deposits, and banker's acceptances.

(9) Investment in money market funds rated 'AAAm' or 'AAAm-G' by Standard & Poor's.

(10*) Stripped securities: principal-only strips and interest-only strips of noncallable obligations issued by the U.S. Treasury, and REFCORP securities stripped by the Federal Reserve Bank of New York.

(11) Any security not included in this list may be approved by Standard & Poor's after a review of the specific terms of the security and its appropriateness for the issue being rated.

In addition to the permitted investments listed above, guaranteed investment contracts are also eligible investments subject to certain terms and conditions. (See "Public Finance Criteria: Review Of Investment Agreements For Municipal Revenue Bond Financings" and "Public Finance Criteria: Joint Support To Investment Agreements"). ■

Investment Agreements For Municipal Revenue Bond Financings

Analysis of municipal revenue bonds often involves evaluating the security or pledged collateral, and the investments. Issuing entities that have operating revenues and other noninvestment sources to provide ample protection against defaults are usually exempt from formal restrictions on permitted investments in the ratings analysis (see "Public Finance Criteria: Investment Guidelines"). In transactions where full and timely payment of debt service is dependent on investment income, however, a more structured approach is necessary. Very often, these investments take the form of investment agreements, and many bond issues will have as many as three different funds invested:

- A short-term acquisition, proceeds or construction fund (where the bond proceeds are held prior to expenditure);
- The debt service reserve fund; and
- The revenue or "float" fund (where monthly receipts are held).

These three funds can be held in one or more agreements.

Those agreements that are deemed necessary for full and timely payment of debt service are subject for review as part of the ratings process. Review of an investment agreement involves consideration of the strength of the provider and the structure of the agreement.

Dependent Rating

The first aspect of Standard & Poor's Ratings Services assessment of the investment contract is the financial strength of the provider. The provider's certificate of deposit rating is used, and is an important component of the bond rating because the transaction is dependent upon performance of the investment provider for a portion of the revenues used to pay bondholders. In most cases, the long-term rating of the provider must be as high as the rating on the bonds. Note the eligibility of contracts to be jointly provided by more than one provider (see "Public Finance Criteria: Joint Support to Investment Agreements").

For highly rated transactions, two sets of rating guidelines can be used. The first set of guidelines applies to issuers seeking 'AAA' or 'AA' ratings on bonds with investment contracts:

- For investments with terms of less than one-year, the provider maintains a short-term rating of 'A-1+';
- For terms of at least one year but less than three years, the provider maintains a long-term rating of 'AA-' and a short-term rating of 'A-1+'; and
- For terms of three years or more, the provider maintains a long-term rating of at least as high as the long-term rating on the bonds.

The second set of guidelines extends the acceptable providers for transactions rated in the 'AAA' or 'AA' categories, for agreements with terms of three years or more, to include providers with both a long-term rating of at least 'AA-' and a short-term rating of 'A-1+'. To benefit from this, issuers must have legal provisions in the investment contract should the provider's rating fall below either of the two benchmarks. This ensures that a credit cliff does not occur and the rating on the bonds can be preserved despite a potential downgrade of the investment agreement provider below the required threshold. Upon a downgrade below 'AA-' or 'A-1+', the legal provisions under the investment contract should require the provider to do one of the following:

- Substitute to a provider with a rating of at least 'AA-/A-1+' willing to offer substantially similar rates and terms as the original agreement;
- Secure credit enhancement to the investment agreement from a provider rated at least 'AA-/A-1+';
- Collateralize the agreement to a level sufficient to maintain the rating on the bonds; or
- Terminate the agreement, only with the bond issuer's consent, and payment to the issuer of all invested principal plus accrued interest to the termination date.

Any of the provisions above should be resolved within 30 days of the downgrade of the provider.

The provision to terminate the agreement with issuer consent (fourth option) above is only acceptable to the extent the related bond document stipulates that in the event the issuer elects to terminate the investment agreement, the issuer takes appropriate rating notification actions. Standard & Poor's needs to review the alternate investment(s) for consistency with the original financing, and the ability of the alternate investment(s) to support the rating on the bonds. In all instances, Standard & Poor's will need to be notified to verify that one of the remedies will be utilized.

These guidelines shall not apply unless the provider, under the investment agreement, agrees to effect any of the (first through third options) above at its own cost, unless the termination option (fourth option) above is accepted by the issuer. Exceptions may occur only in certain instances where a substantial number of investment agreements with multiple providers lead to more than ample liquidity at a given rating level, as may be the case with some state housing finance agency issues under parity bond resolutions or state revolving fund programs. A likely scenario for termination to occur would be if market conditions result in reinvestment rates equal to or higher than that of the original agreement thereby providing sufficient investment earnings for the bond issue.

Unlike parity resolutions, stand alone issues typically have minimal excesses built into the structure and therefore are less likely to have the financial capacity necessary to withstand the consequences of a drop in prevailing interest rates—possibly requiring an upfront payment to enter into a substitute investment agreement providing similar rates and terms to the original agreement, or accepting a lower reinvestment rate. Without this "make-whole provision", the investment agreement would not be eligible to be used for bonds rated higher than the provider's rating.

Standard & Poor's views the performance of the provider under the make-whole provision as integral to preserving the bond rating. If it is assumed that prevailing interest rates have fallen and that the termination option is not practical, the agreement will continue using one of the remaining three options. The collateralization option requires not only sufficient levels and types of collateral, but also appropriate legal opinions that protect the collateral in the case of an insolvency of the provider (see below). The remaining options of finding a substitute provider or enhancement for the agreement may require costs for the provider depending on market conditions.

Following either of these sets of guidelines, bond issues rated in the 'AAA' and 'AA' categories may utilize investment agreements with eligible providers with ratings as low as 'AA-/A-1+'. Issuers should recognize that use of lower rated providers involves requirements that should be considered at the bidding stage so that the potential providers are aware of the additional requirements that make the agreements acceptable for rated transactions. Note that this criteria only applies to transactions rated in the 'AAA' and 'AA' categories. On transactions dependent on investment earnings, for bonds rated 'AA-' and below, Standard & Poor's applies a straight weak-link approach, whereby the rating of the bonds cannot be any higher than that of the lowest rating of any dependent provider.

In addition, transactions structured to have the investment agreement as the only security for the bonds, such as an escrow, cannot benefit from this criteria, as the bonds are solely dependent upon payment from the investment agreement provider. If there is no additional security for the bonds, the rating of the bonds is capped at the rating of the investment agreement provider.

General Terms

The second aspect reviewed is the structure of the agreement to ensure it works appropriately with the mechanics of the financing. Standard & Poor's reviews the general terms of the investment contract for consistency with the legal documents and the assumptions under the cash flows. Standard & Poor's will compare the interest rate under the investment agreement, basis for calculating interest, the interest accrual dates and payment dates under the contract. Additionally, the investment agreement's maturity date should match the maturity date of the applicable fund, or the cash flows should model Standard & Poor's then-current minimum reinvestment assumptions after the investment agreement maturity date. To the extent that investment agreements are obtained subsequent to the initial rating, Standard & Poor's will review all outstanding agreements each time the rating is reviewed to assure that the terms of the agreements are appropriate for the bond rating.

Withdrawal/Deposits

Certain bond financings present uncertainty given the possibility of prepayment of the collateral securing the bonds. To address the risks of the frequency and size of the prepayments, investment agreement providers, particularly in housing bond transactions, are increasingly becoming more restrictive in the amount of funds they will accept, the length of time they will hold such amounts, and the use of lockout periods in an effort to increase the predictability of the investments held with the providers. As a result, investment agreements often have limitations with respect to deposit and duration of the investment. Standard & Poor's will review the contract to ensure that the investment agreement and cash flows are consistent. To the extent the agreement places limits on the amount of the investment, for example, the cash flows should then model these limits by reflecting amounts above the limits held at minimum reinvestment rates rather than the investment agreement rate.

Additionally, certain bond structures, such as escrows, may include unscheduled bond payment events that require the trustee to withdraw all funds from the investment agreement prior to the expiration date. If, for example, bond proceeds are held invested during an escrow period, and the structure calls for the investment agreement to fund a mandatory redemption of the bonds should there be a failed remarketing, the trustee would have to withdraw all of the funds with limited notice to the provider. Standard & Poor's first reviews the agreement for any lockout provisions that could prevent the withdrawal of funds. The investment agreement will also likely include a withdrawal notice provision which Standard & Poor's reviews to verify the availability of funds to pay bondholders when necessary and in accordance with the legal documents. Remedies should be in place for any inconsistencies between the bond documents and the investment agreement.

Grace Period

While the rating of the provider takes into account the likelihood of the provider to pay under the contract, the default section of the investment agreement may incorporate a grace period that may not be factored into the payment structure of the bonds. Investment agreement providers typically build in a grace period to account for potential administrative delays. The provider is not deemed to be in default unless payment is not made when due and after a specified grace period, such as one business day after which the Trustee gives notice to the provider. Note that investment agreements involving guarantees may also have additional structural notice periods that can affect when funds are received. The structure should allow for these grace periods by adjusting the investment agreement interest payment dates to compensate and taking into account interest accrual periods.

Collateral

Following a downgrade event, the provider may opt to post collateral so as to maintain the rating on the bonds. Standard & Poor's determines the amount of collateral posted on a case-by-case basis at the time of posting and based on the type of collateral posted. In addition, the collateral must be pledged to the trustee and Standard & Poor's should receive a legal opinion stating that in the event of the provider's insolvency, the trustee will be able to terminate the agreement and sell the collateral without regard to the insolvency of the provider. ■

Joint Support To Investment Agreements

Standard & Poor's Ratings Services criteria for jointly supported obligations, whereby each obligor is fully responsible for the entire obligation, may also be applied to investment agreements. These agreements provide full or partial credit support in public finance transactions, and are important factors in determining the bond rating, especially in housing. Investment agreements also provide reinvestment of various funds of municipal issuers, such as bond proceeds.

As with any jointly supported bond, the multiple providers must each be fully and independently obligated for the entire amount, and all terms and conditions of the obligation under the investment agreement. Therefore, a default on the obligation under the investment agreement would only occur if

the multiple providers involved defaulted. The foundation for the criteria is that the risk that the multiple providers will default is less than the risk that either will. As a result, the credit quality of the investment agreement may be higher than the rating on either provider (see "Criteria Update: Joint Support Criteria Refined," RatingsDirect, Feb. 3, 2006). Standard & Poor's will examine each provider's agreement to ensure legal comfort with the type of obligation provided. Payments under the agreements should be made directly to the bond trustee.

The application of the joint support criteria to investment agreements creates additional flexibility, particularly for 'AAA' rated transactions, by expanding the pool of potential investment agreement providers. Strong credit quality could be derived like other jointly supported transactions, such as those with both a primary obligor and a letter-of-credit (LOC) supporting the bonds. The only distinction is that the jointly supported obligation is an investment contract rather than the obligation to make payment of bond debt service.

The rating criteria for investment agreements in bond transactions are outlined in Standard & Poor's current criteria (see "Public Finance Criteria: Review of Investment Agreements for Municipal Revenue Bond Financings"). To qualify for a bond rating at a certain level, the jointly derived rating of the providers should meet Standard & Poor's investment rating guidelines.

Pursuant to the joint support criteria, Standard & Poor's will apply the appropriate reference table based on the correlation between providers. To the extent the investment agreement is provided jointly by two banks, for example, Standard & Poor's would use the medium correlation reference table because both providers are in the same industry (and assuming they are not in the same region). If one bank was rated 'A-' and the other rated 'AA', the rating on the jointly supported investment agreement would be evaluated at 'AAA' thereby qualifying the investment agreement for use in a 'AAA' rated transaction. The same approach could be applied to short-term ratings by converting the indicated long-term rating of the providers into the corresponding short-term rating. It should be noted that monoline bond insurers remain ineligible for joint-support criteria, reflecting the significant correlation between the insurer and its portfolio of insured obligations.

Rating Dependency

Using investment agreements in rated bond transactions leads to the possibility of a change in the bond rating due to a change in the investment agreement provider's rating. Like any rating which is dependent on its parts being of at least equal credit quality, with jointly supported investment agreements, the bond rating becomes dependent on the jointly derived rating of the providers, and the correlation table used to derive the joint rating. Due to the nature of joint support, a change in the rating of one provider, however, does not necessarily lead to a change in the rating of the bonds. Using the example of the rated obligors above, if the rating on the 'AA' entity was lowered to 'AA-', the rating on the bonds could be affirmed because the jointly derived rating of the providers would still be 'AAA'. If the rating on the 'A-' entity was then lowered to 'BBB+', however, the jointly derived rating of the providers would be 'AA+' and the rating on the bonds may be lowered, unless remedies are taken to preserve the rating. Obviously, changes in other credit factors could separately affect the rating.

Downgrade Triggers

Jointly supported agreements

Should the bond issuer want to preserve the bond rating in case of any adverse change to the credit quality of one of the investment agreement providers, Standard & Poor's will evaluate the downgrade triggers of the agreement(s) to confirm they are at a rating level consistent with our current criteria and incorporate the jointly derived rating. Remedies may be in place to preserve the bond rating—for example, the agreement could provide that a substitute provider with a rating sufficient to maintain the rating on the bonds will be obtained. If similar remedies are not included, the rating on the bonds will likely drop to reflect the credit quality of the jointly supported investment agreement. Following a rating change of one provider, if the credit quality of the jointly supported agreement is adversely affected, the agreement should allow up to 10 business days to effect a remedy. If a remedy sufficient to preserve the bond rating is not completed, the bond rating will be lowered to the level of the jointly derived rating of the providers.

Non-jointly supported agreements

The application of joint support criteria may also be used as a potential remedy to preserve the bond rating if a provider's rating is lowered in all investment agreements, whether or not they initially use joint support. If a provider's rating is lowered below the level required for the bond rating, the agreement can specify that the provider enter into an agreement with another provider that will allow application of the joint support criteria in a manner that will maintain the then current rating on the bonds. The multiple providers must each be fully and independently obligated for the entire amount and all terms and conditions of the obligation under the investment agreement. ■

Defeasance

Standard & Poor's Ratings Services, on request, rates legally defeased bonds and certain economically defeased bonds. A legal defeasance occurs when the security lien of an indenture is released, and the debt has been legally satisfied even though the debt may not have been formally retired. In an economic defeasance, an issuer sets aside sufficient funds to satisfy debt obligations "in substance," but the debt is not legally discharged. The following criteria apply for both insured and uninsured bonds.

Legal Defeasance

In a legal defeasance, the trust indenture is replaced by an escrow deposit agreement, which governs the escrow of funds. The escrow has to be verified to ensure its ability to make full and timely debt service payments. Defeased bonds are eligible for 'AAA' ratings if the transaction meets Standard & Poor's criteria that addresses the legal structuring and credit quality of the escrow. Additional criteria must be met if a Forward Purchase Contract is included (see "Public Finance Criteria: Forward Purchase Contracts and 'AAA' Defeased Bonds").

Economic Defeasance

Economically defeased bonds of municipal issuers and conduits may receive 'AAA' ratings; however, typically, the highest rating assignable to the economically defeased debt of entities subject to Chapter 7 or Chapter 11 of the U.S. Bankruptcy Code or public-purpose issuers (such as private colleges and universities, hospitals, not-for-profit corporations, or other charitable institutions) is the existing rating on the obligor's long-term debt unless legal comfort regarding bankruptcy issues is provided.

Legal Defeasance Criteria

Standard & Poor's reviews the following documentation to analyze legally defeased transactions.

Escrow deposit agreement

Standard & Poor's reviews the escrow agreement to determine whether it establishes an irrevocable trust and has provisions addressing the following criteria:

- The escrow funds are invested in noncallable eligible securities (see "Public Finance Criteria: Investment Guidelines") that mature in amounts sufficient to make full and timely debt service payments. The escrow agreement should specify that reinvestment and substitution of the escrowed securities also must be in eligible securities.
- All money and earnings are pledged to the payment of the refunded bonds.
- Provisions intended to protect the integrity of the escrow are reviewed, such as limitations on the active management of the escrow, whether excess earnings and residuals revert to the issuer only after the final principal and interest payment has been made to bondholders and that neither the issuer nor the obligor are responsible for funding financial shortfalls in the escrow.
- If excess earnings or residuals are allowed to be removed from the escrow prior to maturity or earlier call date(s), Standard & Poor's will look to the rating or bankruptcy remote status of the entities involved in substitution and reinvestment procedures. Excess or residual earnings should only be removed from the escrow after a bond payment date and upon receipt of a report from an independent third-party accountant that verifies that the remaining funds will be sufficient to pay debt service in a timely manner.
- Substitution of escrowed securities may necessitate updated cash flow verification reports. If the substitution is due to the maturity of the escrowed security, then substitution into other eligible escrow obligations will not require an updated verification report. But if the substitution is of a non-maturing escrowed security, then the substitution should be accompanied by an independent third-party accountant's report to the trustee verifying the adequacy and accuracy of the new cash flows.
- If not held uninvested, interest earnings should be reinvested in eligible investments. However, we will not rely on reinvestment income in calculating the sufficiency of the escrow for principal and interest payments to bondholders.
- Only entities Standard & Poor's considers bankruptcy remote, escrow agent, or trustee may direct reinvestment and substitution.

- Payment of fees to the trustee, escrow agent, accountant or issuer may be made from the escrow only if they are provided for in the cash flow statement and the escrow deposit agreement.

Defeasing variable rate debt presents a unique situation as the interest rate on the bonds in escrow continues to reset, and the bondholders' put option may not be extinguished when the indenture is discharged. For additional criteria related to legally defeased variable rate debt, see the "Defeasance" section of "Public Finance Criteria: LOC-Backed Municipal Debt".

Finally, Standard & Poor's should be notified of any substantive changes in the structure of the transaction including, among other things, entering into a forward purchase contract or changing the definition of eligible securities.

Cash flow verification

A report provided by a third-party accounting firm that verifies the accuracy, adequacy, and timeliness of the funds escrowed to pay bondholders is reviewed. The report should verify that the anticipated receipts from escrow securities would be sufficient to pay principal and interest when due.

Legal opinions

Standard & Poor's may look for legal comfort on certain issues:

- For public-purpose and Bankruptcy Code issuers, a legal defeasance opinion that indicates that the lien of the prior indenture or resolution has been discharged and released.
- If cash contributions, rather than bond proceeds, fund all or part of the escrow an opinion indicating that, in the event of an insolvency of the contributor, the escrow fund and any payments on the defeased bonds would not be recoverable as a preference pursuant to Section 547(b) of the Bankruptcy Code.
- A bankruptcy opinion if excess earnings or residuals are allowed to be removed from the escrow prior to maturity or earlier call date(s) and the entity may be involved in substitution and reinvestment procedures.

Standard & Poor's does not require legal defeasance or preference opinions in connection with the defeasance of bonds issued by entities deemed municipalities (states, counties, or cities) that are eligible to file a bankruptcy petition under Chapter 9 of the Bankruptcy Code.

Economic Defeasance Criteria

Standard & Poor's reviews the following documentation to analyze economically defeased transactions:

- Escrow deposit agreement: The criteria are identical to those listed above under legal defeasance.
- Cash flow verification: The criteria are identical to those listed above under legal defeasance.
- Legal opinions: Issuers typically fall into one of four categories—-municipal, conduit, bankruptcy code, and public-purpose issuers. The legal opinions necessary to analyze an economically defeased issue are outlined below for each type of issuer and allow Standard & Poor's to assess the likelihood that an issuer will file or would be involuntarily filed under the Bankruptcy Code.

Municipal issuers

For those issuers whose status as a "municipality" under Chapter 9 of the Bankruptcy Code is uncertain, an opinion is requested to verify whether the issuer is a municipality eligible to file under Chapter 9 of the Bankruptcy Code.

Conduits

Conduits typically are municipally sponsored organizations, such as housing, health care, or economic development authorities. Standard & Poor's has determined that conduits have little incentive to file for bankruptcy protection. In cases where a legal defeasance opinion cannot be provided, but a rating of 'AAA' is desired, a bankruptcy opinion is requested to address cases where a non-bankruptcy-remote third party deposits funds through a conduit to defease bonds.

Bankruptcy Code issuers (Chapter 7 or 11)

Standard & Poor's will look for legal comfort that in an insolvency of the depositor, the escrow funds and any payments on the defeased bonds would not be recoverable as a preference under Section 547(b) of the Bankruptcy Code; will not be subject to automatic stay under Section 362(a) of the Bankruptcy Code; and would not be considered part of the estate of the depositor under Section 541 of the Bankruptcy Code in order for the defeasance rating to be higher than the existing rating on the obligor's long-term debt.

Public-purpose issuers

Public-purpose issuers are entities that are not considered municipalities and are not "monied, business, or commercial corporations" under Section 303(a) of the Bankruptcy Code. These include private colleges and universities, hospitals, not-for-profit corporations, or other charitable institutions. Although these entities are not subject to involuntary filing under the Bankruptcy Code, Standard & Poor's believes that the possibility of a voluntary filing exists. Therefore, the highest rating that can be assigned to the economically defeased debt of these type of issuers is the

existing rating on the obligor's long-term debt unless Standard & Poor's receives legal comfort on the bankruptcy concerns outlined above.

If these opinions cannot be provided, the highest rating that can be achieved is the long-term rating on the depositor.

Standard & Poor's will not rate economically defeased debt for corporations, partnerships, or other similar issuers higher than such entities' long-term rating. Although the entity has set aside sufficient funds to satisfy the obligation, the debt has not been legally discharged and, therefore, in the event of an insolvency of such entity, the escrow funds may be considered part of the bankruptcy estate, and payments to the bondholders may be interrupted. If a special purpose entity (SPE) that meets Standard & Poor's SPE criteria is used and the appropriate bankruptcy opinions are delivered, a higher rating may be achievable. ■

Introduction To Tax-Secured Debt

GO bonds generally are regarded as the broadest security among tax-secured debt instruments. GO bonds effectively create a link between public and personal debt: a homeowner unable to pay his property taxes will forfeit his house just as surely as if he could not pay his mortgage, and an unlimited-tax GO pledge would enable a trustee to invoke mandamus to force the issuer to raise the tax rate as much as necessary to pay off the bonds. GO bonds have other strengths as well: the property tax tends to be a steady and predictable revenue source for municipalities, and when a vote is required to issue them, bondholders have some indication of taxpayers' willingness to pay.

There is a broad range of security pledges among tax-secured bonds. For example, there are unlimited-and limited-tax GOs. Moral obligation bonds fall short of a full-faith and credit obligation, offering a best efforts pledge of the issuer (generally a state) to seek appropriations when needed. Leases are another form of obligation, whereby timely payment of principal and interest depends on annual appropriations by the issuer. Municipal note issues are divided into two major categories, bond anticipation notes (BANs) and cash flow notes, requiring different rating approaches. BANs are issued for capital purposes and generally require the issuer to access the capital markets to sell long-term bonds to retire them. Tax and revenue anticipation notes (TRANs) are short-term obligations of an issuer, due within one to three years of the date of issuance, and often used for annual cash flow borrowing.

Special tax and special districts come in a wide variety of forms and powers. Obligations are generally "tax-secured," but special tax and special districts' ability to raise taxes is often restricted, and is often reliant on future tax-receipts growth. Special tax debt includes security types such as sales, gas, or hotel taxes; while special districts are often secured by special assessments, tax increment, or other types of revenue pledges. In the following pages, Standard & Poor's examines in detail the security features, rating approach, and documentation requirements for these various types of tax-secured debt. ■

GO Debt

When a state or municipal issuer sells a general obligation (GO) bond, the issuer pledges its full faith and credit to repay the financial obligation. Unless certain tax revenue streams are specifically restricted, the GO issuer frequently pledges all of its tax-raising powers. Typically, local governments secure the obligation with their ability to levy an unlimited ad valorem property tax; state governments, which have different tax structures, usually pledge unrestricted revenue streams.

GO bonds remain essential financing instruments of tax-supported capital projects. Examining four basic analytical areas enables Standard & Poor's Ratings Services to assess the capacity and willingness of municipal governments to repay tax-secured debt. Those areas are:

- Economy,
- Financial performance and flexibility,
- Debt burden; and
- Management.

Economic Base

The economic base is one of the most critical elements in determining an issuer's rating. It incorporates local and national economic factors and trends. The foundation of an entity's fiscal health is its economy. Financial growth prospects and volatility of major revenue sources depend on the performance of the local economy, as do the affordability and range of services delivered by a government. An issuer's geography and proximity to transportation networks, cities, and markets play a

key role in economic development. The infrastructure of an area, including the road network, utility systems, and transportation facilities, will also be important. These two areas provide background about how a specific economy has developed to date, but also provide information on future growth prospects.

Demographic characteristics factor heavily into economic analysis. The population base is analyzed in terms of age, education, labor skills and competitiveness, and wealth and income levels, and how these factors are changing over time. Demographic analysis also considers the impact of annexations and the effect of migration patterns. Wealth characteristics are a highly critical element of a demographic review. High wealth and income characteristics are viewed very favorably and can contribute to superior debt-repayment capabilities. Common ratios used to analyze economic factors include per capita effective buying income, which measures resident incomes net of personal income tax and non tax payments and median household effective buying income, which measures after tax income on a household basis.

An entity's tax base is initially evaluated for size, structure, and diversity. Assessed-and market-valuation trends are analyzed historically, as is building-permit activity. The tax base composition is reviewed to identify proportionate contributions from residential, commercial, and industrial tax-revenue sources. To determine the degree of concentration, the leading taxpayers are profiled and assessed for their direct and indirect effects on the local economy. If a tax base is concentrated, in either taxpayer or employment sectors, there may be a vulnerability to any changes in one or a few taxpayers' assessments, especially when property taxes comprise a large portion of the revenue base. Significant changes in the tax base are analyzed to determine whether the causes are structural or cyclical. Common ratios used by Standard & Poor's to evaluate the tax base include total market value and market value per capita.

The composition, output, and diversity of the employment base are prime considerations in evaluating economic strength. The employment base provides the primary growth engine of a community and can be an attraction or a deterrent for continued economic development and viability. Specifically, the factors Standard & Poor's analyzes include, but are not limited to:

- The industry mix and employment by sector to identify diversification trends or structural changes in the economy over time. Specifically, contributions from the manufacturing, services, trade, construction, government, health care, higher education and agriculture sectors and how these have changed over time relative to national and state trends;
- Concentration in major employers or reliance on particular industries;
- Employer commitment to the community—importance of local facilities and employees to the overall strategy of local employers, business-development plans, age of plant, and industry prospects;
- Unemployment patterns and labor force growth, to gauge the cyclically of the underlying base;
- The regional patterns of employment and growth to the extent that a municipality participates in a regional economy; and
- The level of retail sales as well as growth trends over time, particularly when communities rely on sales tax revenues.

Specific comparisons of the general factors outlined above are made with available economic data. Where appropriate, these data also are compared with metropolitan statistical area (MSA), state, and national data. Historical trends and their likely development are much more valuable than data comparisons for a specific point in time.

Generally, entities with higher income levels and diverse economic bases have superior debt-repayment capabilities, reflecting better protection from economic changes or unexpected volatility than other communities. Nevertheless, a strong economy does not always ensure a strong ability to meet debt payments. It is extremely important for an issuer to be able to capitalize on its primary economic strengths in terms of revenue collection, leading to another highly critical factor in credit evaluation: the financial management and performance of an entity.

Financial Indicators

Financial analysis involves several areas:

- Accounting and reporting methods;
- Revenue and expenditure structure and patterns;
- Annual operating and budgetary performance;
- Financial leverage and equity position;
- Budget and financial planning; and
- Contingent financial obligations, such as off-balance sheet debt, pension liabilities and other post-employment benefits.

An analysis of these factors will present a clear indication of the financial strengths and weaknesses of an issuer. Such analysis also will provide the framework for judging capacity to manage economic, political, and financial uncertainties.

The first important variable in judging financial performance is the method of accounting and financial reporting. Based on the guidelines of Generally

Accepted Accounting Principles (GAAP), Standard & Poor's assesses an entity's financial reports. Emphasis is placed on the government's primary government/major funds (general, debt-service, and special-revenue funds), which under GASB Statement 34 are now called fund financial statements and its government-wide statements, which provide a broad overview that provides an all-encompassing view of the government's finances.

Further, Governmental Accounting Standards Board (GASB) interpretations of accounting rulings are considered in evaluating the organization of funds, accruals, and other financial reporting methods. GAAP reporting is considered a credit strength, and the ability to meet the Government Finance Officers Association's (GFOA) Certificate of Conformance reporting requirements also is viewed favorably. Enhancing public disclosure is a government's Comprehensive Annual Financial Report (CAFR), which includes significant financial data and various statistical data to supplement the accounting statements.

Issuers are expected to supply adequate and timely financial reports. Financial reports prepared by an independent certified public accountant are preferred. Lack of an audited financial report prepared according to GAAP could have a negative impact on an issuer's rating, since questions about reporting will be raised. If state agencies or other internal government units prepare financial reports, Standard & Poor's is interested in any deviation from GAAP standards and the independence of the auditors preparing the reports.

Operating-account analysis includes an examination of operating trends, focusing on the structure of revenue and expenditure items, primarily within the primary/major fund category including general fund and debt-service funds. If other funds are tax supported or include revenues related to general government purposes, they also have relevance in developing a complete understanding of financial performance.

Diverse revenue sources are preferable, as they can help to strengthen financial performance and enhance stability. The use of fees not only creates new revenue streams, but also places the burden for municipal services on the users of the services. Special taxes, such as sales or excise taxes, allow for further revenue diversification. Although a balanced composition of revenues gives an issuer the flexibility to meet all of its financial obligations, it does not necessarily protect against the impact of a general economic decline. For example, if a government's tax collections depend on several major revenue sources, the direct and indirect effects of an economic downturn can be broad enough to affect revenue performance. Revenue sources are examined over a three-to five-year period, with particular focus on unusual patterns in revenue performance that could lead to significantly different financial performance in the future.

Similarly, expenditure composition and stability are analyzed in the context of revenue patterns. Large expenditure items are identified and examined to determine if continued expenditure growth could endanger existing services or require additional budget actions to maintain balance. To the extent that certain spending items are extraordinary or nonrecurring, the effect on long-term financial performance is discounted; conversely mandated expenses can limit flexibility and decision-making. Discretionary spending, such as pay-as-you-go capital, is evidence of operating flexibility.

The effect of any transfers among other governmental and capital funds is considered in the review of financial performance. When inter-fund transfers support the general fund and/or debt-service fund, Standard & Poor's reviews the policy guidelines and historical transfer practices. Volatility in transfers that represents a deviation from past policy could be viewed as a sign of fiscal stress in both the transferring and receiving funds.

The balance-sheet examination focuses on liquidity, fund-balance position, and the composition of assets and liabilities. In Standard & Poor's consideration of appropriate fund-balance levels, several variables are important:

- The makeup and liquidity of the fund balance, particularly as related to the volatility and patterns of the revenue stream;
- The predictability of government spending;
- The availability of unencumbered reserves or contingency funds; and
- The ability of public officials to sustain a strong financial position.

The fund-balance position is a measure of an issuer's financial flexibility to meet essential services during periods of financial strain. Standard & Poor's considers an adequate fund balance and policies determining fund-balance goals to be credit strengths. A common ratio used to evaluate fund balance is the unreserved fund balance expressed as a percent of operating expenditures. This provides a measure of how much of the fund balance is not committed to spending and is available for contingencies.

With the implementation of GASB Statement 34, Standard & Poor's also evaluates issuers' Statement of Net Assets, which measures all assets and liabilities (similar to a private sector business) and the statement of activities, which presents how net assets have changed over the prior year. Over time increases or decreases in net assets provide an indicator of how a government's financial position is

changing. Increases in net assets may indicate an improved overall financial position while decreases in net assets may reflect a changing manner in which a government may have used previously accumulated funds.

The analysis of financial performance also takes into account the role of short-term financing and its implications. As available cash balances decrease, cash flow difficulties can become more prominent. Nevertheless, conservative financial strategies and management practices can enable an issuer to minimize cash flow difficulties.

In reviewing an issuer's cash management and investment practice, Standard & Poor's considers the types of investments, security precautions, and uses of investment income.

Debt Factors And Long-Term Liabilities

The analysis of debt focuses on the nature of the pledged security, the debt repayment structure, the current debt-service burden, and the future capital needs of an issuer. Manageable debt levels are an important consideration, since accelerated debt issuance can overburden a municipality while low debt levels may indicate under-investment in capital facilities.

Investment in public infrastructure is believed to enhance the growth prospects of the private sector. Neglecting critical capital needs may impede economic growth and endanger future revenue generation. Although some capital projects are discretionary and can be deferred in difficult economic periods, the failure to maintain existing facilities can create a backlog of projects. Eventually, when the backlogged projects are funded, the cost may prove burdensome to future taxpayers.

In difficult fiscal situations where municipalities face operating deficits, some entities choose long-term financing of accumulated deficits as a solution. Standard & Poor's believes that the "bonding out" of financial problems is not a permanent cure and may complicate the ultimate resolution of the fiscal strain.

The specific security pledged is analyzed. A GO pledge takes various forms that provide different degrees of strength. Unlimited ad valorem property-tax debt, secured by a full faith and credit pledge, usually carries the strongest security. However, in all ad valorem pledges, during a period of fiscal stress, debt service competes with essential services. Limited ad valorem tax debt, or a limited-tax pledge, carries legal limits on tax rates that can be levied for debt service. Standard & Poor's views this type of security more as a means to limit debt issuance than as a strict cap on revenues available to retire debt.

In a limited-tax situation, the tax base's growth, the economy's health, and the entity's fiscal balance position are often more significant credit factors than the limited source of payment. In fact, a limited-tax bond can be rated on par with unlimited-tax bonds if there is enough margin within the tax limit to raise the levy, or if other available balances or tax revenues are available for debt service. An enterprise system's revenues, such as water or sewer user charges, as well as a full faith and credit pledge, secure double-barreled bonds. Taxing power is used only if the enterprise's revenues are insufficient. Standard & Poor's approach is to review both security pledges.

GO bonds are considered self-supporting when the enterprise can pay debt service and operating expenses from its own operating revenues. Such a self-supporting enterprise could use the full faith and credit support of a municipal government without diminishing the credit quality of the government's GO debt.

The debt maturity schedule can become important in certain circumstances. Prudent use of debt dictates that the debt's term matches the useful economic life of the financed assets. An average maturity schedule for capital projects is one in which 25% of the debt rolls off in five years and 50% is retired in 10 years. A faster maturity schedule may be desired to avoid increased interest costs; however, it can place undue strain on an operating budget. Statutory provisions governing debt retirement are also important considerations in evaluating payout.

Standard & Poor's looks for realistic debt limitations that permit an issuer to meet ongoing financing needs. A city near its debt limit has less flexibility to meet future capital needs, but more importantly, may be unable to borrow money in the event of an emergency. Restrictive debt limitations often necessitate the creation of financing mechanisms that do not require GO bond authorization or voter approval.

Standard & Poor's examines the community's future financing needs; a capital improvement plan indicating both funding needs and anticipated funding sources is a useful planning tool for determining future borrowing needs. Municipalities should regularly review their critical capital needs and schedule capital improvements for assets' life. The history of past bond referendums is one indication of the community's willingness to pay for such improvements.

Standard & Poor's also measures the debt burden against a community's ability to repay. Three indicators of this ability are:

- The tax base;
- The wealth and income of the community; and
- Total budget resources.

Ratios used by Standard & Poor's to measure debt burden include:

- Debt to market value, which measures overall debt to all taxable property within the government's jurisdiction;
- Debt per capita, which measures overall debt by population;
- Debt as a percentage of personal income (which is available on the state level but not on the local level); and
- Debt as a percentage of operating expenditures.

Each of the first three debt burden ratios are also measured net of self-supporting obligations for the purpose of ascertaining the true debt obligation supported by no other sources.

In general, a debt burden is considered high when debt-service payments represent 15%-20% of the combined operating and debt-service fund expenditures. This benchmark will vary with the structure of government and the level of services that an entity provides.

Pension Liabilities

Pension liabilities remain a significant credit factor for state and local governments. Standard & Poor's views pension obligations as long-term liabilities that should be managed in a way that will not adversely affect the bond issuer's ability to make debt service payments. Although various debt instruments may have a lien position that is senior to pension obligations, benefit payments carry with them a political reality that adds to any legal protections. While debt levels are usually more predictable due to long-term capital plans and the largely fixed-rate nature of the obligations, unfunded pension liabilities tend to be more volatile.

It is important to consistently monitor the key variables of the issuer's retirement systems. Accordingly, Standard & Poor's reviews pension trends related to funding progress. This analysis includes changes in assets and liabilities, funded ratios, unfunded actuarial accrued liabilities (UAAL) and the relationship of the UAAL to payroll. Pension asset valuations can change, as can actuarial liabilities. The higher contribution requirements that result from unfunded liabilities could make any preexisting fiscal stress more acute, especially if the increase was dramatic. Therefore, Standard & Poor's will evaluate the sponsor's pension funding strategy, and the current and projected cost implications on its financial profile. As part of this analysis, Standard & Poor's will review the track record annual required contributions (ARC) and the percent of the ARC made. The historical and forecast trends in pension funding are as important, if not more so, than the specific liability level at a single point in time.

Other Post Employment Benefits Liabilities

GASB Statement 45 will require the disclosure of Other Post Employment Benefits (OPEB) in a manner similar to pensions starting in fiscal period beginning after December 15, 2006. Currently, OPEB expenditures are included in a government's general fund and detailed in an audit note, with funding generally on a pay-go basis. Under the new statement, the liabilities attributable to OPEB and the annual required contribution for employers would be actuarially determined and reported. GASB Statement 45 does not require funding of the liability. From a credit standpoint, OPEB liabilities and funding strategies will be evaluated in a similar way to pension obligations. This analysis will include a review of the historical and projected pay-go costs for OPEB, the newly quantified un-funded liabilities and current funded status, and the plan for managing ongoing annual required contributions. Also, the impact of projected annual OPEB costs on the current and future budgets will be assessed. This review would also include the legal and practical flexibility a specific government has in managing these obligations from both the asset and liability perspectives.

Management Factors

An understanding of the organization of government is critical. The powers of a municipality establish the entity's ability to plan for changes in the political, economic, and financial environment, and the capacity to respond in a timely fashion. The entity's degree of autonomy is affected by home-rule powers, as well as legal and political relationships between state and local levels of government.

The range and growth potential of services provided by the entity are also examined in relation to the capacity to provide such services. The ability of officials to implement timely and sound financial decisions in response to economic and fiscal demands can depend on the tenure of government officials and frequency of elections. The background and experience of key members of the administration are important considerations if they affect policy continuity and the ability to reformulate plans.

Financial management is a major factor in the evaluation of state and local government creditworthiness. Past performance against original plans, depth of managerial experience, and risk profiles of key leaders all have an impact on the bottom line.

Financial Management Assessment

Standard & Poor's analyzes the impact of financial management polices and practices through the use

the Financial management Assessment (FMA). The FMA attempts to provide a transparent assessment of a government's financial practices and to highlight aspects of management that are common to most governments in a consistent manner. The FMA is an analytic enhancement that improves the definition of our analysis of management practices and policies, and expand our methods of communicating analytic conclusions about policies and procedures.

A government's ability to implement timely and sound financial and operational decisions in response to economic and fiscal demands is an important component of credit quality. The FMA makes certain aspects of our analysis of management more transparent, specifically those concerned with policies and practices that are considered most critical to credit quality. FMAs are assigned only to general government tax-backed and annual appropriation-backed issues.

The FMA encompasses seven areas most likely to affect credit quality:

- Revenue and expenditure assumptions
- Budget amendments and updates
- Long-term financial planning
- Long-term capital planning
- Investment management policies
- Debt management policies
- Reserve and liquidity policies

The overall FMA assessments are communicated in our analyses using the following terminology:

- "Strong" indicates that practices are strong, well embedded, and likely sustainable.
- "Good" indicates that practices are deemed currently good, but not comprehensive.
- "Standard" indicates that the finance department maintains adequate policies in most, but not all key areas.
- "Vulnerable" indicates that the government lacks policies in many of the areas deemed most critical to supporting credit quality

The FMA focuses on a government's policies and practices. It is neither an evaluation of the competency or aptitude of individual finance professionals nor an evaluation of a finance department's ability to handle either ordinary occurrences or unique challenges. The purpose of the FMA is to highlight the most transparent aspects of management that are common to most governments in a consistent manner. Even with this narrow definition, other possible practices could be considered, such as accounting and disclosure practices, internal controls, and policies for knowledge retention and staff turnover. While each of these has the potential to affect credit quality, factors considered in the FMA are those that Standard & Poor's considers the most critical in determining credit quality.

It is important to keep in mind that the FMA is one component of a rating; we will continue to evaluate all of the other factors—economic, financial condition, debt and management. Given what the FMA measures, it is possible that an entity with a strong FMA may be better able to tolerate weakness in the basic credit areas, or conversely, may be better able to take advantage of improving conditions. As a result, the practices that are captured by the FMA could contribute to rating changes, or allow a community to better prevent a downgrade.

State Ratings

State credit ratings

Standard & Poor's analysis of states includes all of the factors considered in any GO rating. State governments have sovereign powers and therefore possess unique administrative and financial flexibility which translates to a higher credit profile for state ratings in many cases. Generally states have broad powers to establish their own tax structures and expenditure responsibilities. Tax structure, or the ability of a state to benefit from the economic activity within its boundaries, is an important rating factor, as well as the degree of flexibility existing in this structure, both legally and politically. States also enjoy flexibility in setting and modifying tax rates, deductions, exemptions, and collection dates. These discretionary powers can immediately and favorably influence a state's fiscal condition.

While states generally have broad service responsibilities, they also enjoy considerable discretion in establishing or changing disbursement dates and funding levels for state assistance. This affords a high level of control over budgets and cash flow which, given the absolute level of these disbursements, can positively impact fiscal standing. These sovereign characteristics can be limited, however. For some states, the voter initiative or referendum process is very active and its effects are important from a credit standpoint. Where decisions about specific tax/revenue levels and spending allocations are placed in the hands of the electorate, states have reduced flexibility to respond to changing economic or financial situations.

State/local relationships

States' relationships with their localities continue to evolve and are part of the credit review process for both levels of government. How services and programs are provided across governments and what the funding relationship has been over time are important considerations. Successful legal challenges to some states' funding of primary and secondary education have bolstered state aid to

schools, and in turn placed significant pressure on state budgets. Conversely shifting responsibilities to local government units can ease a state's financial burden, but will pressure credit ratings of local governments unless accompanied by new local revenues or mandate relief.

Special GO Situations

In addition to traditional general obligation ratings, Standard & Poor's rates a number of GO securities that carry many of the characteristics of general obligation analysis but may also have their own nuances. For example, in certain parts of the country, library, park, fire, forest preserve, municipal utility, and water and sewer districts issue bonds backed by some form of general obligation taxing powers. Analysis for this type of debt follows the same basic principals of GO tax backed analysis including the four factors (economy, debt, management and finances) but also factors in the uniqueness of the individual districts. These may include the limited service functions, and in some cases the limited revenue raising capabilities or specific millage limitations. Since service functions are often limited (such as providing library services or fire services), budgets are often smaller in size and capital intensive. Often times the fixed portion of the budget dedicated to debt service is a much larger component than would be typical for a larger, full service operating budget of municipality.

Many of these types of districts are often coterminous with the municipality or county they lie within. In some cases they lie within more than one municipal boundary. In those cases where they are coterminous and share the same economic base, it doesn't necessarily mean the rating will be the same. While the economic factors may be the same, management practices, financial position and debt profiles may be very different and could result in higher or lower ratings. In particular, financial position will be an important determinant in assigning the rating.

Certain districts also carry, in addition to their full faith pledge, the ability to levy rates and charges for specific services provided. In the case where user charges are also used, Standard & Poor's evaluates the GO factors while also looking at the revenue stream of the user charge and factors that into the rating. In some instances, the history of using user charges that translate into strong financial position has contributed to higher ratings. ■

Debt Statement Analysis

Debt analysis is a critical component of the rating process at Standard & Poor's Ratings Services. Debt analysis focuses on the nature of the pledge offered on various securities, the debt repayment structure, current and forecasted debt service burden and the magnitude of an issuer's capital needs. Debt position is measured in several ways, but analytic construction of the basic debt statement is critical to the evaluation. Differences often arise between the analytic approach to indebtedness and the statutory approach represented by issuers.

There has also been much debate about the inclusion of pension liabilities and other post employment liabilities on an issuer's debt statement. In terms of debt statement analysis, pensions and OPEB will not be included unless the municipality has issued debt to fund its liability. However, Standard & Poor's will analyze various measures of an entity's pension system and OPEB liability and in order to perform comparable analysis will show debt ratios both with and without debt incurred for pensions and OPEB.

Debt Statement Analysis

When Standard & Poor's examines the debt burden of a municipality it starts by looking at all direct debt, and any other analytic obligations of the entity. Debt types included in gross direct debt include:

- General obligation bonds;
- Any short term debt or commercial paper;
- Other tax secured obligations such as sales, gas or excise tax obligations;
- Authority, certificate or other capital lease obligations that are secured by lease rental or contract payments subject to appropriation;
- Moral obligation secured debt;
- Tax increment and special assessment secured obligations;
- Pension obligation bonds; and
- Any enterprise or revenue—based debt.

Operating leases, tobacco and GARVEE bonds (supported by federal revenues) will not be included in the debt statement analysis.

With this aggregation of direct debt, Standard & Poor's measures the full burden of debt on the population in relation to wealth. After this evaluation, deductions are made from the debt statement for self-support of certain types of debt. Once a net direct debt figure is determined, various ratios are again calculated

Self-support is an analytic judgment and will not necessarily match statutory calculation of self-support. The following are typically deducted:

- TANs, RANS, and TRANs;
- State aid reimbursements for well defined, long-standing programs;
- Federally supported GARVEE revenues;
- Enterprise debt secured by revenues only;
- Moral obligation debt that has not required any contribution to the debt service reserve fund from the morally obligated party; and
- Tax secured enterprise debt that is fully or partially self-supporting from the enterprise.

Self-Supporting Debt

Although a debt obligation may be exempt from a legal debt limitation, Standard & Poor's does not necessarily treat the obligation as self-supporting. Standard & Poor's will assume revenue secured debt for enterprise bonds (water, sewer, solid waste and electric revenue bonds), GO backed revenue bonds that have passed the coverage test, and state aid supported bonds are self-supporting.

If tax-secured bonds are paid from an enterprise fund, Standard & Poor's will give credit to partial self-support, and will factor that level of support into the overall debt burden. For example, if an issuer's GO backed water and sewer debt was below 1x, but managed to have 0.7x for the last three fiscal years, then Standard & Poor's would give self-support to 70% of the GO water and sewer debt. If the coverage tends to change from year to year; from 0.7x in fiscal 2003 to 0.5x in fiscal 2004, and 0.6x in fiscal 2005, Standard & Poor's will use the lowest percentage of the last three years.

In this case, Standard & Poor's would assume that 50% of the GO backed revenue bonds is self-supporting. Partial self-support does not apply to revenue bonds because they would be in covenant default. Standard & Poor's analyzes the system to make sure that system revenues are able to cover both revenue and GO backed revenue debt. Coverage from the enterprise fund revenues must provide at least 1x support for the last three fiscal years to be considered fully self-supporting and to be factored out of the direct debt of the municipality.

Bonds that are supported by special assessments, sales tax, gas tax, or tax increment financing (TIF) revenues will not be considered self-supporting, and will be included in the direct debt of the issuer. If these bonds have a dedicated millage to pay debt service, this will be taken into account and explained in the debt section of the issuer's credit commentary, but it will not be considered self-supporting.

Pensions And Other Postemployment Benefits

Standard & Poor's will continue to analyze an issuer's pension system(s) and the funding of its actuarial accrued liabilities (AAL). For information on pension and other postemployment benefits (OPEB) criteria please refer to the Public Finance Criteria: GO bonds.

In terms of the debt statement, if the issuer has sold pension obligation bonds then the bonds will be included in the debt statement and debt ratios will be calculated both with and without the pension obligation bonds. The same holds true for OPEB obligation bonds. However, Standard & Poor's will recognize in its analysis the comparison between an employer that has issued POBs and as a result has higher debt ratios but lower unfunded pension liabilities versus one that has not issued POBs and thus has lower debt ratios but higher unfunded pension liabilities. The analysis will take into account that the increased debt ratios are offset by the entity's improved funding ratio.

Debt Statement Presentation

For Standard & Poor's to achieve a thorough analysis of a community's debt levels, it is imperative that the issuer provides a comprehensive debt statement. Although debt statements will never be uniform due to the unique circumstances of the municipalities, there are certain essentials that make up a good debt statement.

From an analytic standpoint, a good debt presentation will communicate the nature of the pledged security, the debt repayment structure, the current debt service burden and the future capital needs of an issuer.

The debt statement should include a listing of obligations of both long-and short-term debt and maturity dates should be provided. Furthermore, the nature of the security should be concisely, but accurately defined. If the entity paying the debt service is different from the security, that should be defined as well. In terms of lease obligation, there is often a conduit authority set up to issue the debt for the obligor, therefore the debt statement should include this debt and indicate the appropriate authority for debt issuance.

Table 1 **Sample: Computation of Direct and Overlapping Debt**

(Mil $)	
Gross direct debt	
General obligation	252.9
Capital leases	27
Tax incremental financing	16.9
Sales tax	10.4
Total gross direct debt	307.2
Self-supporting debt	
General obligation water and sewer	25
Net direct debt	282.2
Overlapping debt	
General obligation	300
Other tax supported	150
Combined overlapping debt	450
Net direct and overlapping	732.2

Standard & Poor's will also ask the issuer to report another important measure of the debt burden on the issuer's operations—the debt service carrying charge. Pre-GASB 34, the debt service carrying charge, which is measured as the combined general fund and debt-service-fund debt service to operating expenditures (not including pension obligations), was an important measure of the issuer's management of debt repayment and financial flexibility. Post-GASB 34, the debt service carrying charge is measured as the combined primary governmental debt service to the primary government expenditures. The debt service carrying charge measures what percent of the issuer's expenditures are used for debt repayment, and is a useful indicator of financial flexibility.

Another tool that issuers use to manage debt is derivatives, such as swaps. Interest-rate swaps are used in conjunction with bond issues to save interest costs, increase financial flexibility, synthetically advance refund bond issues, and access different investor markets. Swaps also are used to lock in fixed rates of return on debt service funds and other floating-rate assets without sacrificing liquidity.

Table 2 **Sample Long-Term Debt Statement**

($ 000)

Maturing in FY:	GO bonds principle	Interest	Total	TIF bonds* principle	Interest	Total	Total	Sales tax revenue bonds principle	Interest	Total
2006	43,265	22,518	65,783	5,393	3,033	8,426	1,979	2,390	915	3,305
2007	42,675	19,064	61,739	5,094	2,908	8,002	2,098	446	598	1,044
2008	34,125	15,664	49,789	3,866	3,008	6,874	2,298	468	574	1,042
2009	18,770	13,332	32,102	2,575	3,305	5,880	2,434	488	550	1,038
2010–2014	9,445	11,926	21,371				2,558	503	525	1,028
2014–2019	50,115	47,640	97,755				15,839	2,488	1,932	4,420
2020–2024	54,540	31,112	85,652				16,012	2,363	1,140	3,503
2025–2030							9,322	1,240	470	1,710
Total	252,935	161,256	414,191	16,928	12,254	29,182	52,540	10,386	6,704	17,090

Changes in Outstanding Long-Term Obligations

	GO Bonds	TIF Bonds	Sales Tax	Capital Leases	
Outstanding/ July 1, 2005	258,888	17,049	10,721	Year Ended June 30	
New issue	22,621			2006	15
Principal retired	(28,574)	(751.000)	(335.000)	2007	13
Accretion				2008	12
Other				2009–2024	26,960
Outstanding/ June 30, 2006	252,935	16,298	10,386	Total minimum payments required	27,000

*TIF—Tax increment financing.

However, swaps expose issuers to counterparty credit risk, termination risk, basis risk, rollover risk, and for many housing bond issuers, amortization risk. Therefore, Standard & Poor's will review swap transactions in conjunction with the issuer's overall debt profile and will assign a Debt Derivative Profile score. For information on the Debt Derivative Profile Criteria please refer to Criteria: Debt Derivative Profile.

In terms of capital appreciation bonds (CABS), Standard & Poor's will use the accreting value that is presented by the issuer in the audited financial statements. Since this includes interest payments, Standard & Poor's will gauge whether the value artificially inflates the debt position by 10% or more, and will explain in the debt section of the credit commentary the sinking fund and pay out of the CABS.

Overlapping Debt

Another important measure of debt that should be included in a debt statement is the overlapping debt issuance (or underlying debt for counties). A comprehensive debt statement will include a separate section on overlapping debt and the percentages applicable to the municipality. The rationale for this is that the burden on the community is for all debt issued. Therefore, the community is responsible for the debt of the school district to the same extent as the city and the county. The taxpayers are obligated to pay taxes to each entity, and this is one of the most important measures of how the current obligation affects the community.

Similar to the presentation of direct debt, the overlapping debt section should also include all securities, not just the general obligation bonds. A comprehensive overlapping debt section would include bonds secured by special assessments, gas tax, and sales tax, among others.

Table 3 **Sample: Revenue Bonds and Other Debt**

($ 000)

	—Water and sewer—		—Solid waste—	
Maturing in FY:	**Principle**	**Interest**	**Principle**	**Interest**
2006	1,090	2,237	8,403	1,856
2007	1,121	2,181	5,208	1,119
2008	1,152	2,124	1,204	1,077
2009	1,210	1,065	1,151	1,019
2010–2014	6,886	8,871		
2015–2019	6,275	7,090		
2020–2024	9,197	2,868		
2025–2030	5,298	592		
Less:				
Unamortized discount & deferred amount	(1,226)			
Premium	479			
Total	31,482	27,028	15,966	5,071
Changes during the fiscal year	**Water and sewer**	**Solid waste**		
Oustanding as of July 1, 2005	33,532	24,967		
New issue				
Principle retired	(2,050)	(9,001)		
Other				
Oustanding as of June 30, 2006	31,482	15,966		

Future Debt/CIP

Standard & Poor's closely scrutinizes an issuer's CIP to evaluate future debt statement changes Again, Standard & Poor's examines the tax-supported obligations and revenue obligations and their potential impact on the issuer's future operations, and the potential burden to the community. A typical CIP presents the expected projects for the next five fiscal years, a list of the projects and their cost, and the funding source—whether funded internally, by an outside governmental agency, or debt financed. As well, the CIP would communicate whether the project was discretionary or non-discretionary. In addition, the issuer should also communicate the remaining borrowing capacity, tax rate and levy capacity, or other revenue capacity of the obligor/issuer.

Debt Example

For example, table 1 describes what Standard & Poor's includes in the analysis of the gross debt position for a city. Under gross direct debt, Standard & Poor's included the $252.9 million general obligation bonds and the $27 million lease debt, since both are direct obligations of a city, and the debt service payment is derived from the city's operations. As well, the other tax-supported debt includes $10.4 million sales tax revenue bonds and $16.9 million tax increment financing bonds and is also added to the direct debt obligation of the city.

Under the net direct debt, Standard & Poor's subtracted the city's $25 million general obligation water and sewer debt because system revenues were paying the debt service. (See self-supporting debt section). Therefore, the city's net direct debt position totals $282.2 million.

Table 2 shows the debt statement presented to Standard & Poor's by the city. The debt statement includes $252.9 million in general obligation debt, $10.4 million in sales tax revenue bonds, $16.9

million in tax increment financing bonds and $27 million in capital leases. Of the $253 million general obligation debt, the city proved that the $25 million GO water and sewer obligation was self-supporting, having more than 1x coverage for more than three consecutive fiscal years, and this portion of general obligation debt was not included in table 1. The city's total net direct debt was $282.2 million.

Although not included in the debt statement, the city has $31.5 million in water and sewer, and $15.97 million in solid waste debt outstanding. The coverage of water and sewer debt has been more than 3x for the last three fiscal years, and the coverage of solid waste was 1.25x for the last three fiscal years. Therefore, Standard & Poor's is assured that operating revenues are not supplementing the enterprise funds, and the enterprise fund is not in covenant default. The city's enterprise debt presentation is shown in Table 3. ■

Special Tax Bonds

The key feature of the special tax criteria, which centers on those bonds that are secured by a lien against a non-property tax, is that the tax rate is generally fixed. Pledged tax revenues will rise and fall based only on the economic activity being taxed. In many cases, the use of special tax bond proceeds may also be unrelated to the economic activity that is taxed.

The four most prevalent taxes used to support special tax bonds are:

- Sales tax
- Highway user tax (including gas tax)
- Hotel tax, and
- Income tax

Many other variations are also included in special tax revenues, from cigarette taxes to rental car taxes. Pledged revenue streams will be evaluated based on their unique merits, but all special tax bonds share common characteristics. In general, bond credit quality will depend on:

- The size and depth of the economic base;
- The stability, diversity, and magnitude of the pledged special tax revenue stream;
- The level of debt service coverage—both coverage of annual debt service and coverage of future maximum annual debt service; and
- Bond covenants, such as funding a debt service reserve; restrictions on additional parity debt issuance; or whether excess revenues after payment of debt service flow back to the bond issuer or are retained under a closed flow of funds exclusively for early debt retirement.

Standard & Poor's is refining its special tax criteria as it relates to sales tax, income tax, and gas tax revenue bonds to place greater emphasis on fundamental economic factors and less on legal features regarding additional debt issuance and reserve funds when, from a practical perspective, prospects are good that debt service coverage will remain high regardless of the legal provisions in bond covenants.

Enhanced recognition of fundamental economic activity for sales tax revenue bonds is supported by retail sales data collected over past recessions, which has generally reaffirmed the stability of sales tax revenues during adverse economic cycles, particularly for large economic bases. As such, higher rating levels can be sustained at lower coverage levels for certain municipalities.

Likewise, the stability of fuel sales during recent and previous price spikes support the relative inelasticity of fuel demand even during periods of high fuel prices. Highway user tax ratings are also buoyed by the fact that a large portion of pledged revenues are typically derived from stable transportation related sources, such as motor vehicle registration fees and motor vehicle license fees, and usually cover a large statewide population base.

In particular, legal tests for additional sales tax parity debt will be weighed less heavily where municipalities rely on excess sales tax revenues to fund general fund operations. In such cases, there is a disincentive to issue significant amounts of additional sales tax borrowing, regardless of legal protections. For these issuers, heavy sales tax bonding could have the effect of crowding out funding for essential ongoing municipal operations. Analytically, this unlikelihood allows us to place less emphasis on the additional bonds test.

The additional bonds test is also less significant for municipal issuers with a long history of debt restraint and little potential future financing needs. In contrast, additional bonds tests may retain their traditional importance when an authorized sales tax

is dedicated only to capital funding or when capital needs are large. Debt service reserves also take on less importance in cases where debt service coverage will be maintained at very high levels, such as 2x maximum annual debt service or higher. In these cases, debt service reserves equal to half of maximum annual debt service, ones only funded when coverage falls below a specified level, or in some cases not funded at all, may be sufficient.

Special Tax Ratings Can Exceed A GO Rating

A special tax bond rating can exceed that of a municipality's GO rating in certain circumstances—when an issuer's base shows broad economic diversity, revenues show good stability in economic downturns, debt service coverage levels are strong, and legal covenants provide strong protection or are analytically less relevant. Special tax ratings may rise above an issuer's GO rating, since as a practical matter, the pledge of special tax revenues may place bondholders ahead of unsecured GO bondholders. Chapter 9 of the U.S. Bankruptcy Code specifically provides that a municipal bankruptcy filing, "does not operate as a stay of application of pledged special revenues, which includes special excise taxes, to payment of indebtedness secured by such revenues". Although case law is limited by the small number of municipal bankruptcy filings, it would appear sales tax bondholders would have a strong priority interest in the event of municipal distress, allowing sales and special tax ratings to exceed a GO rating. However, heavy sales tax bond issuance could potentially weigh down a GO rating. Special tax supported debt is included in Standard & Poor's calculation of an issuer's direct GO debt burden ratio, and could result, in unusual cases, in a downgrade of a GO rating when high debt service costs hamper the ability to balance a general fund budget.

Economic Concerns

The health of the local economy is central to the rating process. As it does when rating other types of municipal issues, Standard & Poor's initially evaluates the diversity and growth potential of an economy. A poorly performing or concentrated economy may limit the upside potential of a bond rating, despite high debt service coverage. The main emphasis is on the breadth of the tax base, both by diversity of retailer, and on the items taxed. Generally, levies on the widest range of items earn higher ratings than those on limited categories of goods and services, (for example, a tax only on restaurant sales may somewhat narrow the tax base, as might a sales tax jurisdiction dependent on a limited number of auto retailers, while inclusion of retail grocery sales may provide greater tax stability). Standard & Poor's reviews cyclical factors, such as tourism, that could cause fluctuations in tax receipts. A large and diverse employment base will provide some protection against swings in retail purchases of area residents. A larger geographic jurisdiction also mean less likelihood that a resident will visit a retailer outside an issuer's taxing jurisdiction if a retailer closes down.

Under certain conditions, the diversity of retailers can be another rating factor, particularly for narrow retail bases. For instance, in a very small town, a large portion of revenues may come from one shopping mall or an auto dealership that may face future out-of-town competition, or whose proprietor may fold. Standard & Poor's may ask for a list of the top 10 retail outlets as a percentage of total sales to help allay concerns of retail concentration, or provide retail sales by economic sectors. As an example, a concentration in auto dealerships may indicate especially cyclical retail sales. Confidentiality laws may preclude the release of actual names of the largest retail generators. In such cases, Standard & Poor's can review retail figures without the release of the specific name of the retailers. Large population bases may be assumed to contain a diverse retail base, while smaller municipalities may be deemed to carry some risk of concentration when precise retail concentration figures are unavailable.

One positive factor regarding sales taxes is that revenues continue to be remitted when a sales tax vendor declares bankruptcy, but remains in operation; conversely, however, tax revenue will come to a halt if the retail store closes or relocates outside a jurisdiction. In such cases, it is helpful that nearby alternative shopping outlets are still in town. Sometimes, even major cities can suffer when a large retail mall opens in a suburb, drawing off shoppers. For this reason, high retail sales per capita are closely analyzed.

Implications Of Growth Trends

Growth trends may depend on the type of taxes. One of the strongest credit features of sales-tax revenues is that they are inflation driven. Revenues and debt service coverage will increase in inflationary periods, even when a local economy does not grow in real terms. On the other hand, gas taxes are usually derived from a per gallon tax that does not grow with inflation. Nevertheless, gas taxes also tend to remain relatively stable in recessions and depend more on population growth. Income tax receipts also show general stability over time, especially for large economic bases, due to the broad-based nature of the tax. Each type of special tax will be examined on its own merits for possible future growth and cyclicality.

In general, projections of sales tax or special tax revenues tend to be imprecise and depend on a number of assumptions about such variables as the level of future construction. Although Standard & Poor's reviews future projections of sales tax or other pledged revenue growth, it does not usually use them as a major factor for a rating. Recognizing the uncertainties in forecasting precisely when new growth will occur, Standard & Poor's typically bases its ratings primarily on historical revenues generated from an existing economic base that will cover future maximum annual debt service.

Although rating criteria focuses primarily on historical revenues and their ability to cover future maximum annual debt service, pledged tax growth rates are still examined. Standard & Poor's will not try to determine the reasonableness of an exact economic forecast, but note when situations where growth will likely continue based on historical growth trends and ongoing economic conditions. Debt service coverage wholly dependent on high future economic growth, particularly sustained long-term annual growth, suggests a greater risk profile. However, some credit may be gained for rapidly growing areas, if near-term growth assumptions appear reasonable.

Standard & Poor's usually asks for at least five years of historical tax revenues or, if a sales or special tax is newly imposed, five-year, pro forma tax data based on historical retail sales from jurisdictions with overlapping sales-tax levies. Pledged tax data that are merely estimated based on sample surveys lack historical rigor.

Debt Service Coverage And Ratings

A common question asked of Standard & Poor's is, what level of debt service coverage will result in a desired rating level? The answer is that there is no fixed level of coverage that will result in a given rating because coverage levels are only one factor in the rating process, which also includes an assessment of likely additional debt issuance and a municipality's economic vitality, diversity, and cyclicality. Higher coverage levels may somewhat offset concerns within the other rating factors, but each rating must stand on its own. Higher ratings generally enjoy higher debt service coverage; however, rating level variations typically correlate more closely with population levels, as a proxy for economic diversity.

Higher coverage can offset a weaker economic base, if coverage levels can be expected to be maintained. Accordingly, issuers may choose to structure in higher coverage and legal features to raise credit quality and offset a weaker economic base. The degree of coverage desired will depend on the desired rating level and the historical and expected fluctuation in sales taxes over an economic cycle.

Variable rate debt, or deals involving swaps with a variable rate should address the potential for interest rate fluctuations and the transaction should show strength during a variety of stress scenarios. A fixed asset stream, such as a sales tax, is potentially vulnerable to variable interest rates, unless initial coverage is sufficient at the time the bonds are issued. One good feature about variable rate sales tax debt is that periods of high interest rates are also often coincident with periods of high inflation, potentially allowing revenues to grow to meet the increased debt service.

Legal Protections

Additional parity bonds tests protect against dilution of future debt service coverage through the issuance of additional parity debt. The strongest additional bonds tests specify that historical revenues must cover future maximum annual debt service, plus an extra debt service coverage cushion.

Special tax bonds, as well as other types of fixed tax debt, typically have no 'rate covenant' to raise tax rates in the case of a debt service shortfall. As such, there may be somewhat less restraint on issuing additional parity bonds than other types of revenue bonds, unless excess tax revenues are needed for other essential operations, as is often the case for sales tax revenues that flow into a municipality's general fund.

Typical additional sales and income tax parity bond coverage tests range from 1.2x historical coverage of debt service to 3x or more, with most tests in the 1.25x-1.5x range. Hotel and gas tax additional parity bonds tests, as well as those for tax revenues with more cyclical revenue streams typically range higher. Some weaker additional bonds tests use average annual debt service coverage instead of maximum annual debt service, although this may be offset by a higher required coverage multiple. Still weaker additional bonds tests may use only projected revenues. Some additional bonds tests allow future variable rate issuance. If so, the additional bonds test coverage multiple ideally would be sufficient to protect against possible future swings in interest rates. If the additional bonds test coverage multiple is low, the use of prevailing short-term interest rates when calculating future debt service for purposes of the additional bonds test would not be as favorable as using some extra factor anticipating a rise in rates. A good alternative might be to use instead prevailing long-term rates, or prevailing long-term rates plus an extra adjustment factor, allowing a coverage margin for a potential rise in interest rates.

Additional bonds tests regarding subordinate lien debt would ideally be calculated using historical sales tax revenue, divided by combined maximum annual debt service payments of both senior and junior lien debt. Some junior lien tests use only net revenues after prior payment of senior lien debt, and this can effectively dilute the additional bonds test to a lower coverage multiple, unless the required junior lien coverage multiple is high. Analytically, Standard & Poor's discounts this method of coverage calculation and employs a combined coverage ratio to evaluate junior lien debt. Rating distinctions between junior and senior lien are not automatic. Junior lien sales tax debt may be rated on par with senior debt if the senior lien is closed, or if no additional senior lien debt is otherwise expected. No distinction may also be made if combined current and expected future coverage levels are so high that the importance of the lien position becomes minimal given the resulting low risk of insufficient coverage. On the other hand, if junior lien debt service coverage is significantly lower than on senior lien debt, there could be a greater rating distinction.

A debt service reserve fund that is fully funded from a portion of bond proceeds, or through a surety agreement with an investment-grade rated entity, may add liquidity in times of stress but does not enhance fundamental credit quality.

Most special tax bonds typically have an open flow of funds, whereby revenues not needed to pay debt service revert to the municipality. If excess revenues are used to fund municipal operations, this can be a disincentive to issue additional debt, as payment of increased prior debt service might restrict the monies available to fund municipal operations. In such an example, a city might be more likely to maintain high debt service coverage even in the event of weak legal protections regarding additional parity debt issuance. As such, an open flow of funds may help support a higher sales tax bond rating where the excess revenues are essential to fund municipal operations, even when the additional bonds test is not particularly strong.

Sometimes bond legal provisions specify a closed flow of funds. In this case, excess tax revenues, after payment of debt service, can typically be used only for bond redemption. This provision can dramatically reduce average maturity and quickly raise future coverage, if at the same time no additional parity bonds are allowed. As such, a much lower coverage could be accepted for an equivalent rating in the initial years, if the risk is mostly in the out years, when effective coverage could grow to a dramatically higher level with any sort of economic or inflationary growth and debt is continuously retired, or defeased early.

Certain specialized tax revenue streams entail special considerations.

Hotel Tax Bonds

Hotel tax bonds are secured by lodging room fees—either a percentage of room rentals, or a fixed tax per room. In practice, few hotel tax bonds pledge purely hotel tax revenues: many also include sales taxes on restaurant sales or car rental fees, with similar tourism based analytical concerns. Hotel tax bonds often fund capital facilities for convention centers, which typically need regular renewal or expansion.

The approach to analyzing hotel tax revenue bonds, and food and beverage tax revenue bonds, follows the general special tax criteria. However, because the hotel tax base is narrower and more cyclical than broad revenues streams, such as general sales taxes, higher coverage levels and bondholders' legal protections may be needed for equivalent rating levels. Specific considerations for hotel tax bonds include the issuer's ability to generate hotel taxes by attracting overnight visitors, the nature of such visits (discretionary trips versus nondiscretionary trips), historic hotel occupancy levels, and planned expansion.

Additional key areas of the hotel tax bond analysis include:

- The historic demand for hotel rooms within the taxing jurisdiction;
- Occupancy rate trends;
- The number of room rentals; and
- Average room rates over a period of several years.

A distinction also is made between the nature of travel to a given community. Although discretionary travel—vacations and business trips—are affected by economic cycles, vacations exhibit greater sensitivity. A feasibility study is helpful in tracking demand trends. These studies typically use historical patterns to estimate future tends. Standard & Poor's often finds analysis of historical hotel tax trends more valuable than predictions for the future. A debt service reserve fully funded from bond proceeds to the maximum annual debt service takes on added importance for a cyclical hotel/motel tax revenue bond issue, as well as one secured by restaurant and beverage taxes. Hotel/motel tax revenue bonds or food and beverage tax revenue bonds also typically have a higher range of 1.5x-2x for their additional bonds test, unless the issuer's hotel market is especially broad and diverse. One of the strengths that hotel tax and food and beverage tax revenue bonds share with sales tax bonds is their response to inflation. Pledged tax receipts and debt service

coverage increase during inflationary periods even if the source of the revenue stream exhibits no real growth.

Highway User Tax Bonds

Highway user tax bonds are issued primarily by states to fund statewide highway and road construction, although local bonds are sometimes secured by state distributions of highway user tax revenues to local municipalities. A state constitution may limit the spending of transportation related fees to transportation uses, which typically tend to be very capital intensive. The broad statewide collection of revenues for most of these bonds often affords strong credit quality.

Highway user revenues collected by states are typically motor-fuel taxes, vehicle-registration fees, license fees, penalties and fines, and in some cases motor vehicle ad valorem fees. Some states add federal grant monies to the pledged revenue stream, which may make the revenue stream vulnerable to changes in federal programs, especially since federal grant programs must be periodically reauthorized. Higher debt service coverage may be needed to offset some of this increased vulnerability.

An examination by Standard & Poor's of pledged fuel taxes during periods of rapid increases in the price of gasoline has indicated that sales of fuel are relatively insensitive to price in the short run, although they may vary somewhat over a long period of years by causing a gradual shift to more or less fuel efficient vehicles as consumers trade in vehicles. Another difference with sales tax revenue lies in the nature of fuel taxes. Unlike sales tax bonds, whose revenues increase with inflation, fuel tax bonds are generally based on per gallon sales, and do not increase with inflation.

The relative importance that a state government places on highway construction, and its commitment to such programs, can be significant factors in the rating process. States that have established highway programs by statute and the ability and willingness of state administrations and legislatures to increase highway user tax rates as a means to fully fund perceived requirements are important considerations.

Generally, statewide revenue sources are considered more stable than revenues based on point of sale within a small locality. Those states that distribute highway user tax revenues to localities on a per capita basis, instead of actual local sales, can serve to enhance a rating by providing stability. Other state revenue distribution formulas that are more complicated could serve to enhance or weaken a pledge of state distributed revenues. If states have frequently changed their distribution formulas in a way that could reduce local revenues that are pledged to bonds, it may become a credit concern. Standard & Poor's examines the revenue-distribution formula, historical changes to highway user tax allocations, and the frequency of tax rate increases as a factor in determining revenue stability.

Because highway user taxes are generally dedicated for the purpose of future infrastructure needs, there may be a greater presumption that a state would issue significant amounts of future highway user tax debt, and the additional bonds test may in some cases take on greater significance than for sales tax debt where an issuer needs to use excess sales taxes for general operations.

Income Tax Bonds

Income tax bonds are primarily found in the state of Indiana, although there are a few prominent examples in other parts of the country. Statistics show that the gross personal income of a municipality's populace is generally very stable over time, most likely due to the broad based nature of the tax, and also goes up with inflation, as do sales taxes. Standard & Poor's evaluates the size and depth of a municipality's economic base and its previous income tax fluctuations. Local income taxes tend to have a narrow range of tax rates, while state income taxes may be based on a more progressive tax rate schedule that could potentially fluctuate more in a downturn, although this may be offset by a larger and more diverse state economy. A distribution of statewide income taxes to localities determined by population would usually be considered a more stable source of pledged revenue than income taxes collected purely locally. However, both sources of income taxes may be considered very stable when the municipality covers a broad economy. ■

Non Ad Valorem Bonds

Non ad valorem debt has become a popular alternative to GO bonds for many reasons. In addition to bypassing referendum requirements, many issuers believe that non ad valorem bonds spread the burden of repayment more equitably among residents and non-residents, including tourists and business travelers. This is attributable to the fact that many non ad valorem revenues are user-based, including sales and other special taxes, intergovernmental revenue sources, charges, and fees.

Because some non ad valorem revenues, such as sales taxes, are economically sensitive, pledging several of them together may reduce the overall volatility of the bond repayment revenue stream, and give the issuer access to more favorable interest rates. However, a broad-based non ad valorem revenue pledge is not, by definition, stronger than an individual pledge. One must consider the issuer's overall debt profile, as discussed below.

Many cities and counties use a secondary pledge of non ad valorem revenues to enhance the creditworthiness of debt secured by a more narrow, and possibly volatile revenue source that would potentially have a weaker credit rating on a stand-alone basis. This pledge takes the form of a direct payment of non ad valorem revenues to fund debt service, or a deficiency make-up provision to fund debt service or replenish a debt service reserve if the primary revenue source is insufficient.

Standard & Poor's Ratings Services generally views the covenant to budget and appropriate available non ad valorem revenues as being second only to a full-faith-and-credit pledge in terms of creditworthiness, and has rated most such debt one notch below an issuer's GO bond rating if certain legal provisions are present.

The general creditworthiness of the issuer provides a basic underpinning for its non ad valorem bond rating. Accordingly, if no published GO rating exists, Standard & Poor's assigns a shadow GO bond rating that it will release to the general public only at the issuer's request.

Determining the creditworthiness of non ad valorem debt for the purpose of assigning a rating entails a blended approach of assessing the nature and strength of the pledged revenue stream and what other competing claims there may be on the non ad valorem revenue stream. Below is a summary of the major facets on which investors should focus.

General Creditworthiness

As in a GO bond analysis, main areas of interest include the nature of the issuer's economic base; financial controls and performance; investing policies and performance; administrative factors, such as taxing authority; and debt management, including capital planning procedures.

Pledged revenues

Differences exist in bond/legal documents providing for non ad valorem debt. One common thread is: statement of the issuer's "covenant to budget and appropriate legally available non ad valorem revenues." Therefore, how "legally available non ad valorem revenues" is defined is of critical importance.

Legally available generally means that obligations payable from one or more specific non ad valorem sources are net of amounts necessary to fund "essential government services." Reviewing the mix of revenues and their historical performance is an important part of the analysis. It is also important to verify that the specific revenues under the pledge are authorized for the duration of the debt service obligations outstanding. The expiration of a major non ad valorem tax source could be a significant credit weakness. The funds subject to the non ad valorem pledge should include at least the main governmental fund of the issuers, which, in most cases, is the general fund. A general fund-only pledge is usually just as strong as one that makes no fund distinction, as most unrestricted non ad valorem revenues are accounted for in the general fund.

One advantage of the general fund-only pledge, from an issuer's point of view, is that new sources of revenues can be placed in other funds for other uses, rather than automatically becoming subject to the lien on non ad valorem revenues. However, once a revenue is considered pledged, the issuer should not be able to reroute it to other uses to the detriment of bondholders. Depending on the timing of the receipt of pledged non ad valorem revenues and when debt service is due during the issuer's fiscal year, a debt service reserve fund may be appropriate.

Prior-lien obligation

Debt secured by one of the revenue sources included in the non ad valorem pledge is seldom noted in the non ad valorem bond resolution. It is important that there be disclosure and analysis of all bond issues that may have a prior lien on any of the pledged non ad valorem revenue sources (such as a

sales tax bond issue), as well as a comprehensive assessment of all bonds or other obligations outstanding that may have a direct or indirect pledge of non ad valorem revenues. To find out debt amounts, provisions for additional bonds, and other information concerning prior lien or parity debt, one may have to consult the relevant bond resolutions or other financing documents. This information can be very important in drawing meaningful conclusions about whether non ad valorem revenues will be sufficient to offset debt service through the life of the bonds.

If the issuer does not have any debt outstanding secured by non ad valorem or other revenue sources, it may opt to issue some in the future. It is therefore important to have a clear understanding of the issuer's long-term capital spending plan.

Anti-dilution test

Provisions for anti-dilution are similar to additional bonds test requirements common to revenue bond issues. Usually, the issuer is permitted to issue additional non ad valorem bonds only to the extent that pledged revenues of a given fiscal year are greater than some multiple of debt service. An anti-dilution test based on historical rather than projected revenues, and maximum annual debt service rather than some other measure, usually provides better protection for bondholders.

Debt service coverage

Coverage should be calculated based on available non ad valorem revenues after paying maximum future debt service on prior-lien bonds and should include other debt obligations secured by the non ad valorem pledge. Additional calculations should be made to estimate coverage in the event that the issuer uses all of its prior-lien bonding authority (issues up to the maximum allowed by additional bonds test under prior-lien resolutions). ■

Lottery Revenue Bonds

Strong growth in lottery sales nationwide, reflecting the overwhelming popularity of the games, and ample legislative support provide assurance as to the stability of lottery revenues as a source of debt service payments. Lottery receipts for rated transactions have shown strong growth and only small dips during isolated downturns over the last 10 years. To date, lottery revenues show little apparent effect from the growth of casino gambling. The stability of these receipts from a legally imposed statewide monopoly can support strong ratings for properly structured lottery revenue bonds.

The ratings for lottery-secured bonds incorporate a review of historical operations and collections of lottery game receipts, as well as an evaluation of the legal covenants for the bonds. The level of pledged revenue coverage of future maximum annual debt service, and the legal covenants restricting additional debt issuance are very important credit considerations. Before assigning a rating to lottery-backed bonds, the stability and magnitude of the pledged revenue stream are closely evaluated.

Competition

The growth in public gaming's popularity has led to increased competition for gaming dollars among many states. The extent to which other gaming that is not used to secure the debt exists in the state, as well as the availability of gaming in nearby states, can reduce pledged revenues. For these reasons, effective management of a diversity of gaming products is an important consideration. As a competitive strategy, many state lotteries vary the composition of gaming products, odds, and pay-offs every year. State lotteries that offer a variety of instant and online gaming products, as well as the larger prizes possible for small states from multistate pools, are better able to maintain interest, popularity, and participation among state lottery players. The ultimate measure of the success of these management factors is the historical growth and stability of lottery revenues.

The novelty associated with the introduction of a new game or a variety of new games can boost lottery sales. However, it would be considered a major credit strength if the revenues for any new or additional games also were pledged for the bonds. This will ensure that the implementation of new games does not diminish the strength of the pledged revenue stream and, most important, dilute coverage. If this concern is not addressed, the addition of new and alternative games that are not pledged to debt service will lead to a decline in pledged lottery revenues and debt coverage.

Lottery Management

Standard & Poor's Ratings Services appraisal of management focuses primarily on industry expertise, experience, and quality. Attention is placed on the historical effectiveness in developing and promoting hands-on, innovative approaches to keep the state's lottery games competitive. A well-seasoned team that is well informed of developing industry innovations in marketing and vending technology, foresees potential challenges, and can adapt to a rapidly changing environment, is a positive rating factor. Also important is the autonomy of the management body.

Typically, management and control of a state lottery is the responsibility of an administrative team appointed by the governor and confirmed by the state legislative body. The team directs the adoption of rules, oversees the operation of the lottery, and is responsible for the honest and fair operation of the games.

Financial Operations

To assess a state lottery's financial position, Standard & Poor's analyzes trends in historical revenue growth with particular attention paid to cyclical fluctuations, overall volatility, and length of history. Historical pledged revenues that provide higher coverage offer some protection from cyclical factors.

Based on the relative inexpensiveness of lottery games as an entertainment item and the attraction of potential winnings, state lottery games have remained popular and have been somewhat insulated from recessionary cycles.

Lottery revenue projections depend on a number of underlying demographic and economic factors, including state population, state income, statewide employment, and job growth trends. Although Standard & Poor's considers future projections of lottery revenue growth, it does not use projections as a major basis for determining a rating.

Legal Provisions

Lottery-backed debt typically is secured by a pledge of net revenues after collections, payment of prize money, and administrative expenses, as well as certain allocations to the state general fund. Variability in the distribution procedure can be mitigated by statutorily controlling expenses and by establishing allocation formulas or caps.

Lottery-secured debt typically has an open flow of funds, whereby net revenues not needed to pay debt service will revert to the state general revenue fund for other purposes so that the pledge of new or additional lottery revenues will not hamper funding of other state programs.

The lien position of pledged revenues is very important. If there is no formal cap or dedication of revenues, Standard & Poor's will analyze the state's historical financial position and how revenue shortfalls, if any, were met in order to gauge the potential that a state may be compelled in the future to redirect a greater share of lottery revenues for general fund purposes.

The additional bonds test is important, as it ensures a minimum level of debt service coverage of future maximum annual debt service before additional debt can be incurred. Additional bonds tests should be historical in nature, specifying that revenues must cover future maximum annual debt service on historical and proposed debt by a fixed percentage before new bonds can be issued. All other things being equal, a higher additional bonds test and coverage level usually lead to a higher rating, unless the issuer's lack of adequate revenue collection history or revenue volatility becomes a limiting factor. If an additional bonds test allows for the issuance of variable rate debt or a bullet maturity that will need refinancing, the additional bonds test coverage multiple ideally would be sufficient to protect against possible future swings in interest rates. If the additional bonds test coverage multiple is low, the use of prevailing short-term interest rates when calculating future debt service for purposes of the additional bonds test would not be as favorable as using some extra factor anticipating a rise in rates. A good alternative might be to use instead prevailing long-term rates, or prevailing long-term rates plus an extra adjustment factor, allowing a coverage margin for a potential rise in interest rates.

Given the discretionary nature and quality of the pledged revenue stream, a debt service reserve fully funded from bond proceeds is a rating factor. ■

Documentation Requirements

- Official statement
- Trust indenture
- State authorizing legislation
- Audited historical revenues for 10 years, if available

Special-Purpose Districts

Tax Increment Bonds

Tax increment financing, sometimes called tax allocation bonds, has been issued in a majority of states, although California redevelopment agencies continue to account for the bulk of national volume. Tax increment financing is secured by taxes generated from the increase in property value in a district after a redevelopment project has begun. As such, it does not raise the tax rate on district taxpayers, but merely reallocates tax revenues that would otherwise flow to pre-existing taxing entities in favor of a redevelopment agency that issues debt. Tax revenues produced from pre-existing property before the tax increment district was formed continue to flow through to the underlying taxing entities as before; only the taxes attributable to the increase in property values flow to the redevelopment agency and are pledged to bondholders.

Tax increment bonds benefit from several favorable structural elements compared to other special district debt. Unlike special assessment and Mello-Roos bonds, no additional tax burden is created for taxpayers, and tax collection rates are generally less of a concern, unless project area tax payments are concentrated in a few taxpayers. In addition, while undeveloped land in a special assessment or Mello-Roos district can lead to high debt burdens, undeveloped land in a tax increment district is generally a favorable factor, since tax revenue will increase to the extent new development occurs and taxable property values grow. In contrast, revenues do not increase for special assessment or Mello-Roos debt when property values rise because those taxes are not based on land value, although development may lead to more favorable value to debt ratios.

The main credit risk for tax increment districts is that tax rates and the pace of private development in a project area lie outside the control of the redevelopment agency issuing the debt. Actual tax rates generating the tax are set by the underlying taxing entities—cities, counties, school, park districts, and others—that set their tax rates without consideration of the needs of the redevelopment agency. Changes in state tax law, or assessment practices, can dramatically influence tax increment revenue.

Tax increment district bond pitfalls

A typical investment-grade tax increment district already generates sufficient revenues to cover future maximum annual debt service (MADS) at the time of the sale of bonds, a feature sometimes called "coverage in the ground". However, the experience of southern California during the 1990s shows that many different factors can subsequently reduce tax increment revenues. Some of the common pitfalls of these bonds include volatility in commercial real estate values during an economic downturn, particularly for warehouses and hotel properties, widespread tax appeals that can overwhelm county assessment offices, a residential real estate bust, construction risk on projected projects, state tax law changes, plant closures, concentration in a few taxpayers, purchase or foreclosure of land by tax exempt entities, and a high tax increment volatility ratio for recently formed project areas.

Project area analysis

Standard & Poor's Ratings Services analysis focuses first on general economic factors that may affect the economic growth of the project area, such as a municipality's population, employment, and income level. Building permits may indicate overall city construction trends. Nonetheless, the general character of a city is not necessarily a barometer of the conditions within a localized project area. In this respect, a site visit may help give credence to rapidly improving economic conditions that are not reflected in assessed valuation numbers. One way to get a description of a new project area is to read the redevelopment agency's plan, which outlines prior economic conditions and project objectives.

Taxpayer concentration

One weakness of many project areas is their small size, leading to taxpayer concentration. Standard & Poor's has no size limit on investment-grade rated project areas. Generally, smaller districts will have weaker credit characteristics and, thus, lower ratings. A larger project area, generally one of over 150 acres, is usually more diverse and more creditworthy. Standard & Poor's analyzes taxpayer concentration by comparing assessed valuation of the

top taxpayers to project area incremental value—not project area total value—because revenues rise or fall based on incremental valuation. It is not uncommon to see each of the top taxpayers representing more than 100% of incremental project area valuation in newly formed project areas, even though top taxpayers may appear deceptively diverse when compared to total project area assessed valuation.

Generally, Standard & Poor's requests the assessed valuations of the top 10 taxpayers. It is typical for 40% or more of the incremental tax base to be held by the top five taxpayers, based on the relatively small size of most project areas. Taxpayers may also not appear overly concentrated when considered individually, yet they may still comprise just one shopping mall or condominium development. Market factors can swing the value of such shops and homes together as a result of their common location and function, apart from fire or natural hazard risks of adjacent buildings. Districts concentrated in a particular type of property, such as aircraft or computer equipment capable of being moved to other locations, may also have other vulnerabilities, even if they are diverse by taxpayer. If payment of debt service is essentially dependent on just a few taxpayers making their tax payments, it may be difficult to achieve an investment-grade rating unless those taxpayers demonstrate creditworthiness, and the property is essential to its operations. Even in the case of a rated taxpayer, however, the property should be highly essential to the taxpayer to get the benefit of the credit rating assigned to the taxpayer. An example would be an important generating plant of a rated investor owned utility.

Assessment practices that may at first appear to "guarantee" tax collections have been shown through experience to not always be reliable. A financially strong company can still remit smaller-than-expected tax payments by appealing its assessment (which can take three years or longer to resolve), not rebuilding after a fire, or delaying initial construction. Taxpayer bankruptcy proceedings can also temporarily forestall legal foreclosure or tax assessment sales, since federal bankruptcy law supercedes local law.

Historical assessed valuation growth

Standard & Poor's prefers to examine at least four years of project area assessed values, when available. One of the virtues of tax allocation bonds is the typically high growth rate of assessed valuation within most new project areas. However, a recent base year may cause deceptive percentage rises in incremental assessed valuation because of the comparison to small early-year incremental values (see the tax volatility ratio chart). Total project area assessed valuation may be a more meaningful indicator of growth trends. In a few states, fire, demolition, or conversion to tax-exempt property may be used to decrease the frozen base assessment—increasing incremental assessed value—without new construction.

Future assessment growth

An important indicator of future assessment growth is the acreage available for new development. A fully developed area, with no redevelopment potential, effectively limits the possibility of assessed valuation growth. However, project areas with large undeveloped land areas are not assured of attaining growth. Construction strikes, changes in market conditions, or higher interest rates can suddenly cancel or delay even the most promising development.

Construction risk, when present, is such a risk factor that most investment grade-rated tax allocation bonds already demonstrate coverage of maximum annual debt service by historical tax revenues (Standard & Poor's will consider next year's tax levy an "historical" revenue if it is based on the current assessor's assessment roll and the current tax levy), although exceptions have been made when debt service could be covered with only limited amount of future growth that seems especially likely. Historical coverage of debt service alone, however, does not necessarily guarantee an investment-grade rating.

Tax Increment Information Requirements

To rate tax increment debt, the following standardized information is usually required:

A preliminary official statement, including:

- Number of project area acres and a description of the land uses within the project area.
- Five year project area assessed valuation history, if available.
- Project area tax rates and underlying taxing entities.
- Base year assessed valuation.
- Debt service schedule.
- Ten largest taxpayers and each of their assessed values.
- Tax collection rates.
- Major pending assessment appeals.
- When sub-areas of a project area, if any, might expire before bond maturity.
- Cumulative project area tax limit, if any, and how much has been collected under it to date.
- Description of tax-sharing agreements with underlying taxing entities, if any is senior to debt service. If they are, disclosure of any that could cause an increase in prior payments in a future year.
- Additional bonds tests and other legal covenants.
- Bond Indenture.
- If there is a consultant's report, a copy should be provided.

Management

Policy control of a redevelopment agency usually lies in a city council, with an executive director responsible for implementation. The agency holds broad authority to acquire, develop, and administer property, as well as eminent domain powers. Often a major portion of tax allocation bond proceeds is used to acquire and consolidate parcels of land.

Examples Of Different Base To Total Project Area Assessed Valuations

Different volatility with same initial coverage and assessed valuation

	Low volatility	**High volatility**
	Project area A	Project area B
Total assessed value	$500 million	$500 million
Base increment	$100 million	$400 million
Incremental assessed value	$400 million	$100 million
Tax rate	1.00%	1.00%
Pledged revenues	$4 million	$1 million
Maximum annual debt service	$2 million	$500,000
Coverage	2.0x	2.0x
If project assessed value fell 10% Project assessed valuation	$450 million	$450 million
Incremental assessed value	$350 million	$50 million
Pledged revenues	$3.5 million	$500,000
Coverage	1.75x	1.00x
Base assessed value to total value volatility ratio	0.2	0.8

Tax Increment Bond Volatility Ratio

The mathematical formula used to compute incremental tax revenues does not treat all project areas equally on a general decline in assessed values. Tax increment project areas containing a small amount of incremental valuation in relation to their total assessed value will show greater volatility revenues. This is often the case for recently formed project areas. Thus, two project areas, with the same amount of total assessed value, can have unequal loss of tax increment revenues, even when losing the same amount of total assessed value.

Standard & Poor's uses a revenue volatility ratio to highlight the speed at which revenues can fall in the event assessed values decline. The ratio consists of the project area's base assessment to total assessment. This ratio can serve as a proxy for the speed with which tax increment revenues will rise or fall in the event of a fluctuation in assessed value. Standard & Poor's expresses the volatility ratio of base assessment to total assessment as a decimal fraction between 1.0 and 0.0. A higher number represents more volatility. In other words, revenues will rise or fall more rapidly with a small change in project area assessed valuation when the ratio is high. The ratio is incorporated as part of Standard & Poor's rating process.

The ratio serves as a convenient flag for the most vulnerable districts in times of real estate decline. Most of the tax allocation bonds that experienced troubles during California's real estate downturn of the 1990s had high volatility ratios.

On the other hand, a high volatility ratio can also cause a quick increase in revenues and coverage in the event of even modest assessed value increases.

In the example, project areas A and B have the same assessed value and tax allocation coverage, but would respond very differently to a 10% decline in overall project area AV. Project area A has a low base-to-total assessed value volatility ratio of 0.2, while Project area B displays higher revenue volatility with a change in assessed valuation, with a volatility ratio of 0.8. Project area A, which is older and has a smaller base valuation, suffers a much smaller decline in coverage, from 2.0x to 1.75x if total assessed valuation declined 10%. Project area B's debt service coverage falls from 2.0x to 1.0x with the same percentage decline in assessed value because it was more recently formed and has a high base valuation relative to total assessed valuation.

The volatility ratio is specific to each project area, and is independent of the amount of debt issued by a project area.

One alternative way to look at this volatility ratio is to examine its inverse. The inverse represents the percentage that total project area assessed valuation must fall to produce zero tax increment revenues. Thus, a high volatility ratio of 0.8 means total assessed value would have to fall 20% before there would be no more tax increment revenues.

Questions for management may encompass additional debt plans, unusual features of the redevelopment plan, and the land use breakdown when the plan is completed.

Legal considerations

Standard & Poor's analysis of the legal structure of a tax allocation bond focuses on the security pledge, flow of funds, debt service reserve fund, and provisions governing the issuance of additional parity debt. The flow of funds is usually simple. Tax increment pays debt service, makes up debt service reserve deficiencies, and then revenues are released for any purpose. Lack of a fully funded reserve is viewed as a negative rating factor in view of the low debt service coverage of most tax increment bonds.

Additional debt issuance is likely over the life of a bond issue. Tests for additional bonds requiring 1.25x coverage of maximum annual debt service by historical revenues, or revenues to be realized as a result of the most recent finalized assessment rolls, are considered a typical provision. However, stricter additional bonds tests may enhance credit quality. Provisions allowing adjustments to revenues based on construction in progress or a consultant's projection can severely weaken the additional bonds test. The coverage multiple required under the additional bonds test is examined in relation to the number of taxpayers excess cash flow could cover in the event of delinquencies among major taxpayers, assuming a redevelopment agency bonded out to the limit of its additional bonds test. Thus, no one additional bonds test or coverage level can guarantee a specific rating.

More established diverse districts have issued debt with less than a 1.25x additional bonds test without a negative impact on their credit rating as their tax volatility ratio declined and their taxpayer concentration diminished. Standard & Poor's weighs a more permissive test against taxpayer diversity, historical and projected growth trends in assessed valuation, the nature of such growth, and the need and likelihood for additional debt issuance. On the other hand, higher debt service coverage and stronger additional bonds tests may offset weaknesses in district economic diversity.

Aside from an issue's legal structure, Standard & Poor's evaluates tax increment authorization laws and litigation. Standard & Poor's examines all new state authorizing legislation for potential problems. Litigation frequently accompanies tax allocation issues, especially in states newly authorizing such financing, because public entities losing the tax revenues have an incentive to sue. Taxpayers and overlapping units often contest the constitutional validity of new tax allocation legislation; counties may wish to postpone the loss of revenues, and taxpayers may want to delay eminent domain proceedings.

Some tax increment bonds also have a pledge of a city's GO. Standard & Poor's will rate such double-barreled securities based on the higher of the GO or tax increment rating, since both are pledged to debt repayment.

Financial operations

Primarily, financial factors include an analysis of fluctuating tax rates, delinquent collection rates (for the project area, not the city), and historical debt service coverage. No specified level of coverage leads to a particular rating, since taxpayer concentration or legal factors may be much more important. When a particular weakness is identified, it is useful to check coverage sensitivity to such vulnerabilities. For example, if an issuer experiences poor property tax collection, coverage levels and additional bonds tests can be raised to compensate. The lower of the additional bonds test coverage level, or current revenue coverage of maximum annual debt service, is used for analysis. Projected coverage based on construction growth is not always reliable, but worth considering.

Various mathematical considerations concerning the ratio of base to total assessed valuation also may affect the volatility of the revenue stream in the event assessed valuation declines (see chart on the tax volatility ratio). In general, the smaller a district's base valuation is compared to its total valuation, the lower the revenue volatility.

Cumulative tax limits

Project areas in California are subject to a cumulative cap on tax increment that can be collected from a project area over the life of the project area. Sometimes, higher-than-projected tax increment can cause the cap to be reached before final bond maturity. If this appears to be a significant possibility, Standard & Poor's would prefer a covenant by the redevelopment agency to annually review the total amount of tax revenues remaining and to escrow revenues or not accept tax monies if it would cause the tax limit to expire before final bond maturity.

Special Assessment Bonds

Special assessment bonds are secured by a special tax, such as a street front-footage assessment, which is levied in relation to the benefit a property receives from an improvement. As a consequence, the tax is not based on the actual value of a property and debt burdens, as a percent of the market value of a parcel, can vary greatly from one parcel to another. Since each taxpayers' tax payments are usually fixed and can not be raised to cover the

delinquency of any other taxpayer, credit analysis must focus on the exposure to the weakest properties, even if overall average property value to debt ratios are strong districtwide.

In particular, special assessments on undeveloped land may create burdensome tax payments for those properties. Undeveloped land typically carries property value-to-debt ratios of 3:1 or less, while developed properties are generally closer to 20:1. Standard & Poor's expects investment grade special assessment bonds to be able to at least withstand two separate sensitivity analyses: (1) a multi-year tax delinquency by the 2-5 largest special assessment taxpayers; and (2) a permanent delinquency by all special assessment taxpayers with under a 5:1 value-to-overlapping debt ratio, absent special circumstances.

Sources of money to cover potential delinquencies may come from reserve funds, an ability to raise taxes to a limited degree, over-collateralization of tax payments, back-up support from a city's general fund (often found in Arizona), cross-collateralization with other special districts, a senior/subordinate bond structure, or other revenue sources.

Special assessment bonds have proven very popular in growing areas such as California and Florida, where existing residents may be reluctant to pay for infrastructure improvements in new housing developments. However, special assessment financing is used throughout many areas of the country. Examples of projects funded by special assessment bonds include water and sewer lines, lighting improvements, roadways, and sidewalks.

Financing special assessment projects

The special assessment process is often quite simple. In most cases, property owners in a limited area, or their local representatives, petition for the creation of a special assessment district. A project is specified that will directly benefit property owners within the district and be paid for by fees or assessments based on a measurement related to the benefit, such as street frontage or square footage owned. Bonds are sold to finance the project(s), and security is provided by the assessments.

Most improvements provided by special assessment bond financing are related to local infrastructure, although bonds have been sold to finance parking lots, landscaping, and public parks. These improvements benefit district property owners by improving the quality of their neighborhood and contributing to greater property values.

Usually, bonds are used only for the construction of the project and not for maintenance. Often, the municipality will absorb the maintenance cost, since the project generally is tied into a citywide system, such as water and sewer services.

Standard & Poor's believes that the lack of excess cash flow coverage typical for most special assessment bonds may create risks, particularly for undeveloped districts. However, potentially speculative elements can be mitigated through such factors as:

- An ability to raise assessment tax rates to a limited degree;
- The existence of excess cash flow from reserve earnings, refunding savings, or a senior subordinate cash flow structure;
- Strong taxpayer diversity, and a debt service reserve that can cover simultaneous delinquencies of at least the top two taxpayers;
- The ability to sell tax liens to cover delinquencies, although this is restricted under federal law if a taxpayer declares bankruptcy;
- Particularly strong value-to-lien ratios;
- A lien on parity with or ahead of ad valorem taxes;
- Legal protections within the bond structure;
- Economic incentives for timely payment of special assessment obligations; and
- Low risk associated with the particular project.

Major criteria considerations

District makeup and economic base—A district largely undeveloped or concentrated in one type of industry is viewed negatively. A special assessment district tied to a stable and diversified economic base is desirable. The effects of employment levels, wealth indicators, and regional trends on payment of assessments are evaluated. A wholly residential district usually exhibits little taxpayer concentration, a very favorable situation if fully developed.

Method of assessment collection. Special assessments collected at the same time and with the same foreclosure methods of ad valorem taxes are preferred. Standard & Poor's also may regard incentives for early payment and disincentives for late payment as positive features. For example, penalties for late payment and discounts for early payment may be worthwhile, depending on their effect on cash flows.

Value-to-debt ratios. High property value-to-debt ratios, preferably above 7:1 for investment-grade ratings, increase the likelihood of making assessment payments on a timely basis. Also, the marketability of property in the district points to added security if properties must be sold as a result of foreclosure or bankruptcy. Value to lien ratios must be examined on a parcel-by-parcel basis for top taxpayers, since tax levies cannot typically be raised on the strong taxpayers to pay for the weak, rendering overall district value to lien ratios problem-

atical in many cases. Standard & Poor's prefers value to lien ratios using county or city assessed valuation, although independent appraisal reports may be evaluated also if deemed reasonable.

Lien position. A lien on parity with or ahead of ad valorem taxes is desirable. Preferably, the general property tax bill should be combined on the same statement as the special assessment tax bill to help collection rates.

Treatment of property sales. Liens should remain in place upon transfer of property or be extinguished by an immediate acceleration of all outstanding, current, and future special assessments on the property.

Foreclosure/bankruptcy provisions. Assessment collections should not be hindered by foreclosure, bankruptcy, or sales of tax certificates or tax deeds. Action should be taken on a timely basis to ensure that sufficient funds are available to make scheduled debt service payments. The marketability of property is also a concern here; property should have sufficient value that bids will appear for foreclosed property. Requirements allowing and requiring foreclosures to proceed on an accelerated basis compared to that for general property taxes is considered favorable.

Clear right to issue. Public hearings and a deadline for discussion are necessary, within legal requirements, so that there are no legal challenges possible once bonds are offered.

Term and redemption of bonds. The debt service schedule is usually flat or declining over time and should be within the useful life of the project and improvements.

Special Assessment and Mello-Roos Information Requirements

To rate a Special Assessment or Mello-Roos bond the following information is usually required:

A preliminary official statement, including:

- Size of district.
- General description of the district with estimated build out dates.
- Land use within the district broken out by percent of the tax from taxpayers with less than a 5:1 value to lien ratio, less than 10:1, and greater than 20:1.
- Largest 10 district taxpayers with their assessed values and share of the pledged tax.
- Description of the formula used for generating the pledged tax.
- Debt service schedule.
- Tax collection rates.
- Overlapping tax rates and overlapping debt.
- Median home values in the district.
- Bond Indenture, Bond Resolution, or Fiscal Agent's Agreement.
- Consultant's or Appraiser's report, if any.

Debt service reserve. A reserve fund or other security feature that provides for payment of debt service is essential in the event that assessments are not received on a timely basis. The amount of the debt service reserve and the way that it is funded are important, because funds to cover any revenue shortfall are expected to be available at all times.

Cash flow runs. Sensitivity tests that demonstrate the bond structure's strength in the event of delinquency of the largest taxpayers are necessary in evaluating the ability of the bond structure to withstand unexpected events. Standard & Poor's normally expects some excess cash, either in a debt service reserve or through excess cash flow, be available to cover a delinquency by at least the top two to five taxpayers, unless the top taxpayer has itself been rated by Standard & Poor's.

In some cases, Standard & Poor's commercial mortgage group can evaluate the credit quality of an individual development for assessment bond purposes and the rating can be based on a single taxpayer or retail development. Usually, however, Standard & Poor's requests information determining the maximum number of taxpayer delinquencies a district can handle before defaulting and compares this to the concentration of the top taxpayers. Where extremely high taxpayer diversity exists, such as in fully developed residential districts, the debt service reserve alone may be able to cover the permanent loss of the top five taxpayers for a number of years, mitigating excess cash flow needs.

California's Mello-Roos Districts

Mello-Roos bonds, also known as Community Facilities District bonds, are specific to California. They are similar to special assessment bonds in that they levy a charge that is not based on property value, but dissimilar in that they usually have the ability to raise the tax rate up to a maximum level to cover taxpayer delinquencies. Most Mello-Roos districts levy a tax per dwelling unit or per acre, based on development status, but there is no real restriction on the type of tax, other than it cannot be based on property value.

The different types of taxes allowed under the Mello-Roos Act raise varying credit quality considerations, but certain key concerns are common to all Mello-Roos bonds. Probably the greatest credit risks occur in the district's initial phases, when the taxpayer base is concentrated and debt-to-assessed value (loan-to-value) ratios are high because land may be owned by a few developers and largely undeveloped (see Undeveloped Special Districts). As development occurs, credit quality should improve to the extent that ownership becomes more diverse, and loan-to-value ratios decrease. Upon a refunding, several years after a district's creation, credit

quality could be vastly improved. Even relatively undeveloped land could receive a favorable initial rating if the area is characterized by numerous taxpayers, good loan-to-value ratios, and flexibility to cover taxpayer defaults by raising tax rates.

Generally, investment grade Mello-Roos districts will show at least close to 1x cash flow coverage of debt service from parcels within the district that have an assessed valuation to debt ratio of at least 5:1, with no major taxpayer concentration among these higher value to lien taxpayers.

Easy to implement

Mello-Roos financing is attractive for two reasons. First, unlike special assessment bonds, it allows the financing of general-purpose projects, such as police stations, which may be outside Mello-Roos district boundaries. A second attraction is Mello-Roos districts' easy implementation in undeveloped areas. The Mello-Roos Act declares district landowners to be the voters when 12 or fewer voters reside in a Mello-Roos district, an interpretation that could be subject to future legal challenge if there are actual residents present.

Because districts may be formed in any size or shape, even from noncontiguous parcels, it is relatively easy to form and obtain 'voter' approval of a Mello-Roos district in undeveloped or industrial areas. Different governments, such as school districts or cities, may form separate overlapping Mello-Roos districts as long as each governmental entity is authorized to perform the different service being provided. Practically speaking, district boundaries can be drawn to guarantee that fewer than 12 voters reside in a district or that residents support district formation.

Any type of tax may be imposed in a Mello-Roos district, as long as the tax burden can be evaluated at the time of voter approval and is not levied against property values. Taxes can be designed to mimic property taxes closely, even though by law they can't be imposed solely on the value of a property. For example, a district could tax the number of homes, street frontage, or number of acres. Even a per capita tax can be imposed, using taxes that are fixed or fluctuate up to a cap. An acreage tax or an equivalent dwelling unit tax, are the most popular form of taxation. Taxes may kick in on different dates, and maximum permitted tax rates often escalate 2% per year to accommodate an increasing debt service schedule. Generally, undeveloped land (usually owned by developers) is not taxed, or taxed very little, while future homeowners support actual debt service. As long as bonds are outstanding, the tax cannot be repealed.

The many possible Mello-Roos tax structures create different risks depending on their structure. However, all districts have some features in common. The strongest districts have economic diversity, with numerous taxpayers and high value-to-loan ratios, and levy a well-designed tax that covers a broad tax base. Such a district could receive a favorable credit rating if the existing tax base can produce favorable coverage of future maximum annual debt service, and an additional bonds test locks in the coverage.

The best additional bonds tests use the maximum permitted tax rate on the existing tax base to calculate a minimum coverage requirement on future maximum annual debt service. Weak additional bonds tests may require only an appraiser's report, subject to possible error, estimating a certain minimum value-to-lien ratio. Additional bonds tests based on building permits granted, while stronger than a wholly projected test, are weaker than tests based solely on revenues from owner occupied homes as determined by a certificate of occupancy or the county assessor, due to the time lag between receiving a permit and actually completing a structure.

Concentration of district taxpayers is a particular risk for small or start-up districts. If payment of debt service depends on payments from a few taxpayers, there are obvious vulnerabilities. Apart from the normal cash flow problems caused by delinquency of a major taxpayer, a federal bankruptcy law filing by a taxpayer can indefinitely forestall local foreclosure action. Taxpayer concentration is particularly important, because most districts were originally formed by a few developers holding undeveloped land. The ability to raise tax rates may mitigate concentration risk if additional levies could cover delinquencies by major taxpayers. Sometimes maximum tax rates are designed to increase a certain percent every year to match an increasing debt service schedule. If so, inflation assumptions should be carefully scrutinized in such a case to ensure that homeowners would not be subject to possibly onerous taxes in later years

Many types of taxes can be imposed and pledged to debt service; therefore, Standard & Poor's will examine each Mello-Roos bond issue on a case-by-case basis. Major rating considerations include:

- Surrounding economic characteristics;
- The nature of the development and the developer's track record;
- Tax-to-property value relationships, with emphasis on the percentage of the tax generated by parcels with value to lien ratios above 5:1;
- Restrictions on additional parity debt;
- Existence of overlapping districts;
- Project feasibility;
- Nature and diversity of items taxed and the tax structure;

- Cash flow timing and sensitivity to taxpayer defaults;
- County assessment and collection practices; and
- The property value added by the funded project.

Certain types of development are subject to more risks than others. For example, multifamily housing projects are more cyclical in their sales patterns than single-family homes, and preleasing may mitigate office building construction risk.

In general, the nature of development risk may introduce varying degrees of speculative characteristics to undeveloped districts owned by just a few developers. However, credit quality may improve rapidly as development occurs, and homes or commercial development are sold off. The ability to raise tax rates, while limited by reform legislation, still provides Mello-Roos districts with potentially better credit quality characteristics than most special assessment districts, with which they share many similarities. A number of formerly speculative "raw land" districts now have developed to the point where their credit quality is quite favorable. However, investors still need to do their homework to make sure that potential additional debt and fundamental economic factors would still support a higher rating as a district develops.

Some Selected Common Characteristics Of Special Assessment And Mello-Roos Bonds

'A'

District is fully or close to fully developed (80% or better), diverse taxpayer base; strong economic location; good maximum annual debt service coverage; debt service reserve may be fully or partially funded, but must cover the loss of the top five taxpayers for life of the bonds; high value to lien ratios of grater than 20-to-1; strong legal protections regarding additional debt issuance, and prompt property foreclosures.

'BBB'

District is mostly developed (70% or better); some taxpayer concentration but expected to be reduced as development continues; adequate economic base with good prospects for continued economic growth; adequate maximum annual debt service coverage of at least 1.0x; debt service reserve may be fully or partially funded but must cover the loss of the top five taxpayers for seven to ten years; moderate overall value to lien ratios of at least 10-to-1; strong legal protections regarding additional debt issuance, and prompt property foreclosures.

Non-Investment Grade — District is only partially developed; significant taxpayer concentration with the top ten taxpayers accounting for more than 50% of assessed value; developing economic base with uncertain prospects for economic growth in the future; failure of the debt service reserve to cover the loss of the top five taxpayers for at least ten years; low overall value to lien ratios of at less than 10-to-1 and a significant amount of properties with value to lien ratios of 5-to-1 or less; adequate legal protections regarding additional debt issuance, and prompt property foreclosures.

Undeveloped Special Districts

Standard & Poor's has extended its criteria for special districts, Mello-Roos (Community Facility District), and special assessment districts to include noninvestment-grade debt and more clearly delineate the types of development risk involved in largely undeveloped special districts.

Such distinctions are important, since the nature of real estate and construction risk can vary widely among undeveloped districts. Special districts with debt rated below investment-grade display an even greater degree of unique variety than more highly rated debt. Nevertheless, certain commonly found situations would compare in terms of creditworthiness (see chart, "Some Selected Common Characteristics Of Special Assessment And Mello-Roos Bonds"). Fundamentally, creditworthiness for special districts depends on prospects for strong real estate values, reasonable debt levels, and taxpayer diversity.

Legal covenants

Strong structural legal protections regarding taxpayer foreclosure, debt service coverage, or debt service reserves cannot, in and of themselves, raise a rating into the investment-grade category unless favorable real estate conditions exist. Legal covenants providing meaningful bondholder protection must lock in the economic benefits of a strong tax base against future issuer actions, such as additional debt dilution or poor tax collection procedures, but the tax base must exist first.

Therefore, a Mello-Roos bond with a weak tax base will not necessarily be able to improve its bond rating with strong structural legal covenant protections, since there is little to protect. Conversely, a Mello-Roos district with a strong tax base may be prevented from obtaining a higher bond rating by weak structural protections.

If development occurs, creditworthiness may improve dramatically in an undeveloped district. However, weak legal protections, written in at the time of bond sale, may limit upside rating potential even if the tax base develops as planned. Investors still need to examine legal covenants closely in almost all situations, even before development occurs.

In particular, a fully funded debt service reserve may buy an issuer some time during periods of heavy foreclosures, but cannot cover against ultimate losses. Other legal provisions of importance include:

- Maximum permitted tax rates;
- Additional bonds tests; and
- The timing of foreclosures and tax rate changes.

There are also key legal differences between unlimited tax special districts, Mello-Roos debt, and special assessment debt, although undeveloped districts share similar real estate development risk. Special district and Mello-Roos bonds usually have

the flexibility to raise tax rates to cover a taxpayer foreclosure loss. This is a key strength of special district and Mello-Roos debt over special assessment bonds. Special assessment bonds usually have just 1x coverage of annual debt service by yearly special assessments and lack any ability to raise tax rates. In such cases, the bond may be only as strong as the ability to receive ultimate repayment from the weakest property taxed.

Exceptions exist. Sometimes debt service reserve earnings can cover foreclosure losses of the top taxpayers if the top taxpayers are small, compared with the total tax base. Another exception occurs in Florida, where the state allows the special assessment tax rate to be raised in some cases, up to a limited amount. This feature makes these Florida special assessment bonds resemble California's Mello-Roos bonds—a positive feature.

Land appraisals

Appraisals of vacant land by private consultants may be problematic. The difficulty is that they are based only on a value at a point in time, and built on a set of assumptions that developers will follow the expected use of the land. If plans do not materialize as anticipated, or new landowners change their expected use of the land, actual values for vacant land could change appreciably. For this reason, private appraisals of raw land can often be considered unreliable. Standard & Poor's looks at the reasonableness of appraisal assumptions and sometimes may discount appraisal conclusions. There are wide distinctions between different types of development districts, and investors more than ever need to distinguish the strong credits from the weak. In particular, investors may want to determine if legal features could preclude a bond from ever moving into the investment-grade categories. The accompanying table, while it does not cover every case, should provide helpful guidelines. Some positive factors, such as debt service coverage, can offset other negative factors, such as taxpayer concentration.

District Size

Standard & Poor's does not have a minimum size limit for an investment-grade rated special district; rather size affects a special district in that a small size may increase taxpayer concentration. A large district concentrated in a few taxpayers may not be as creditworthy as a small district with little tax base concentration in the top taxpayer. A special district consisting only of a 500-unit single-family housing development, for example, may achieve an investment-grade category rating, depending on the particulars of local real estate conditions. ■

State Credit Enhancement Programs

State Enhancement Programs

State credit enhancement programs generally fall into four categories or program structures. Those categories are:

- Intercept/Withholding
- Standing or Annual Appropriation
- State Guarantee
- State Permanent Fund

The type of program and the contractual relationship between the state and the program participant dictates whether a program rating or outlook will change due to a related state rating action. Not all programs fit neatly into the four categories mentioned above. In these cases, whenever there is a state rating change, a program review will also take place to determine if there is a need to adjust the program rating or outlook.

In general, credit enhancement programs are designed to give bondholders additional security for particular general obligation and lease bonds. While the criteria differ depending on the program's structure and the specifics of a state's statutes and constitutional provisions, all programs typically include the following features:

- An independent paying agent, which acts as the state's notification agent in the event of a potential default;
- Sufficient coverage and liquidity of a revenue stream to be used for a debt service deficiency that is independent of the issuer; and
- State oversight of program participants to ensure a well-managed program.

Intercept/Withholding Programs

Intercept or withholding programs operate on the strength and availability of state aid, which can be diverted to a paying agent in the event a local government cannot make its full and timely debt service payment. Standard & Poor's Ratings Services rates intercept or withholding programs that meet

certain requirements at a level one notch off of the state's GO rating—on par with the state's appropriation rating—reflecting the appropriation nature of the intercept or withholding mechanism. Accordingly, if the state rating changes so will the program rating. Other programs do not meet these requirements and are rated more than one notch off the state's rating. These program ratings will not change due to a change in the state rating unless and until they converge with the state's rating.

One category of intercept programs rated on par with appropriation debt are programs structured to provide full and timely payment of debt service directly to a paying agent, regardless of the amount of undisbursed state aid due to the entity at the time of intercept. Programs that fall under this category are:

- California Infrastructure Bank School Aid Intercept Program
- Colorado State Aid Intercept Program
- Massachusetts Qualified Bond Act
- Mississippi State Aid Capital Improvement Bond Program
- Missouri Direct Deposit of State Aid Program
- New Jersey Qualified Bonds Program

Although the specific structure of each program varies, these programs are also characterized by strong state oversight in addition to the other characteristics mentioned above.

Other intercept or withholding programs provide for payment of debt service only up to an amount equal to remaining undisbursed state aid. However, some of these programs are rated on par with appropriation debt because they require that participant's available state aid cover debt service by at least 2x maximum annual debt service (MADS), reducing the risk that available state aid will be insufficient to fully cover debt service. In order to achieve an appropriation-equivalent rating, Standard & Poor's requires that the coverage multiple be set equal to at least 2x MADS. Standard & Poor's considers this level of coverage to mitigate the risk of available state aid being insufficient when debt service is due. Programs that qualify for this rating based on coverage requirements include:

- Georgia State Aid Intercept Program (resolution enhanced—see program detail)
- Ohio State Aid Intercept Program
- Indiana State Aid Intercept Program (resolution enhanced—see program detail)
- Kentucky State Aid Intercept Program
- Kentucky State Aid Intercept Program for Commonwealth Universities

Those intercept or withholding programs that do not provide for full and timely payment of debt service or do not have the additional strengths discussed above are not viewed by Standard & Poor's as equivalent to state appropriations. Consequently these programs are rated lower than the state rating and their ratings will not necessarily change due to a change in the state's rating or outlook; however, in the event a state rating is downgraded to a level at, or below, the program rating, the program rating may be lowered to a level at or below the revised state rating. Programs in this category include:

- Georgia State Aid Intercept Program
- Indiana State Aid Intercept Program
- New York State Aid Intercept Program
- Pennsylvania State Aid Intercept Program
- Virginia State Aid Intercept Program

Standing Or Annual Appropriation Programs

Appropriation programs are dependent on a state's ability to use its cash reserves to make up any debt service deficiency for a participating local government's debt service payment. There is a distinction made between standing appropriation programs which are rated on par with the state's GO rating and annual appropriation programs which are subject to appropriation risk and are notched one notch below the state GO rating level. Standing appropriation program ratings are not subject to appropriation risk and reflect both the state's sovereignty and its constitutional obligation to fund education.

For both standing and annual appropriation programs, the state's credit quality is directly linked to the program's rating. Consequently, the program rating will move in tandem with its related state rating, keeping the relative rating differential between the program and state rating constant. The program's rating outlook will always reflect the state's outlook.

Standing appropriation programs:

- Minnesota State Standing Appropriation Program
- Minnesota County Credit Enhancement Program
- Texas Higher Education Bond Program
- West Virginia Municipal Bond Commission Program

States with Annual Appropriation Programs:

- New Jersey Fund for the Support of the Free Public Schools Program
- South Carolina Education Finance Program

State Guarantee Programs

Currently only four states have constitutionally-created state guarantees of eligible school general obligation bonds. In the event of a debt service shortfall of a participating school district, the state must use its general fund reserves or, in the case of Michigan and Oregon, issue general obligation bonds, if necessary, to make up any debt service deficiency in

order that the bondholders receive full and timely payments. In this instance, the state and program ratings are the same. The program rating and outlook will be adjusted as state rating and/or outlook changes occur.

State Guarantee Programs:

- Michigan State School Bond Loan Fund Program
- Oregon School Bond Guarantee Program
- Utah School Bond Guaranty Program
- Washington School Bond Guaranty Program

State Permanent Fund Programs

Ratings on programs structured on the basis of permanent fund support do not have any direct link to the corresponding state's rating. These funds are constitutionally created, and the corpus of the fund is leveraged to provide a guaranty of a participating local government's debt service. The program rating is based on an analysis of the legal structure of the fund, investment policies, liquidity, and operating guidelines. In the event of a rating action on the state, any changes in the credit quality of the program will be determined independently of the state rating.

State Permanent Fund Programs:

- Nevada School District Bond Guarantee Program
- Texas Permanent School Fund Program
- Wyoming School District Bond Guarantee Program

State Programs

Two enhancement programs in California do not fit into the four categories listed above including: the California Construction Loan Insurance Fund and the California Motor Vehicle License Fees Program. The Construction Loan Insurance Program is managed by California's Office of Statewide Health Planning & Development, and ultimately provides for the issuance of state debt to pay debt service if other funds available in the insurance fund are not sufficient to make debt service. The program is rated on par with the state's GO rating and will move in tandem with the state rating. The Motor Vehicle License Fee Program was created by statute, and guarantees an intercept of monthly license fee revenues collected by the state and transferred to cities and counties for various purposes. The security provided by these funds is independent of the credit quality of the state, and any change in the program's rating will be determined separately from the state rating.

Program Description In Alphabetical Order:

California Motor Vehicle License Fee Program ('A')

Governing statute: This program was authorized in 1990 under Assembly Bill 1375 and updated in 2004 to hold the program harmless against reductions in MVLF revenues in fiscal 2005 and beyond. This rating does not move in conjunction with the state rating.

Eligibility: The program is open to cities and counties to guarantee payment of GO bonds or lease obligations through their allocation of motor vehicle license fees.

Program provisions: Upon notification to the state from a trustee that a required payment was not made from other sources, the California State Controller is directed to make the payment from the community's share of license fee revenues. Given the historical volatility in statewide license fee revenues and the distribution formula's direct link to populations, only cities or counties with a population of at least 2,500 are eligible to participate in the program. The local unit also must demonstrate that its allocation of license fee revenues in each of the five preceding fiscal years will cover maximum future debt service at least 2.5x. The issuer must covenant not to similarly guarantee payment on other obligations, unless the 2.5x coverage level can be achieved on the new total future maximum debt service.

Final state legislation treats the loss of MVLF tax revenue differently for cities and counties. Cities will receive a partial replacement of lost revenue through state general fund appropriations in an amount that will grow based on what the prior MVLF tax would have produced. Counties will instead receive a portion of their lost MVLF revenues from a new local property tax allocation, and this new revenue source will grow only to the degree that local property taxes grow.

The cities' MVLF debt service intercept is held harmless under the legislature's recent bill AB 2115, amending state code Chapter 610, section 6e. This section provides that MVLF property taxes will constitute successor taxes for purposes of the MVLF intercept program.

Counties' MVLF debt service intercept is held harmless under separate legislation, SB 1096, amending Chapter 211, government code Section 25350.55, which requires a county auditor to intercept MVLF-related property tax payments in favor of debt service under the intercept program, instead of intercepting MVLF revenues.

Additional Standard & Poor's requirements: To qualify for the program rating, the financings must account for the monthly distribution of license fee revenues, and the timing delay associated with the notification requirement. To receive the program rating issues must be structured to provide for monthly lease or sinking fund payments, include a fully funded debt service reserve, and have a paying agent, trustee, or similar representative acting in a

fiduciary capacity to promptly notify that state of a locality's failure to make the required payment.

California Health Facility Construction Loan Insurance Program ('A+')

Governing statutes: The program began in 1969 and is managed by the Office of Statewide Health Planning & Development. The rating moves in conjunction with the state rating.

Eligibility requirements: The program is open to health care institutions participating in the California Health Facility Construction Loan Insurance Program.

Program provisions: The bonds are guaranteed by the insurance fund but the ultimate backing for the loans is the full faith and credit of the state. Thus, Standard & Poor's assigns the state's GO rating to participants in the California Health Facility Construction Loan Insurance Program. The Health Facility Construction Loan Insurance fund (HFCLIF) is funded by a one-time fee, not in excess of 3% of the principal and interest payable over the life of the loan. These reserves, along with the HFCLIF, are the only financial resources available to make up payment deficiencies in the portfolio prior to any state involvement. In the event of a default, the state can continue to make regularly scheduled debt service payments or issue debentures having a total face value of and bearing interest at the rate of the respective bonds that they replace.

Five days before an interest payment date, the trustee must notify the office of any deficiencies. The office must make up any shortfall three days before the payment date—first by drawing from the debt service reserve fund, and then, from the Construction Loan Insurance Fund. Since the inception of the program, there has been one default that was cured by payment from the Construction Loan Insurance Fund.

California Infrastructure Bank School Aid Intercept Program ('A+')

Governing statutes: The program began in 2005, and is managed by the state's California Infrastructure Bank. The interception of state aid, if necessary, is authorized under state law AB 1554, as amended by AB 1303. The statutory provisions intercept state general fund money distributed to local school districts under Proposition 98, as well as various forms of state categorical aid. Proposition 98 is a voter initiative, passed in 1988, that amended the state constitution to require, among other provisions, that the percentage of state general fund revenues devoted to K-14 school spending be no less than the prior year, unless overridden by a two-thirds vote of the state legislature. Proposition 98 school aid constitutes a continuing appropriation, even in the event of a late state budget. State statutory law prohibits school districts participating in the program from filing for federal bankruptcy protection. This program rating moves in conjunction with the state.

Eligibility requirements: Only school districts that have received emergency state loans to remain in operation participate in the program. The state uses the intercept program to refinance loans made to the failing districts. Schools receiving emergency loans must consent to state oversight until the loans are repaid.

Program provisions: Each bond issue under the program is separately secured under a separate lease and bond indenture. Each lease requires the respective school district to make lease payments equal to debt service, plus operating costs for its leased asset, usually school buildings and land. When school districts participate in the program, they provide the state controller with a schedule of future lease payments, and the state controller intercepts state school aid in an amount equal to debt service and remits it directly to the bond trustee, before providing the balance of state aid to the individual school district.

Proposition 98 state aid to school districts is apportioned under a statutory formula that sets a revenue limit per pupil for each district, and backfills state aid to the extent local property tax revenue does not achieve the revenue limit. Revenue limit state aid is distributed in seven equal monthly installments from July through January in the last three to five business days of each month. It is anticipated that each school district's rental payments, under its individual lease, will be due the last day of July, August, September, October, November, and December. The program rating assumes debt service will be structured to be paid February 15 and August 15, consistent with existing debt issued under this program. Under the state statutes, the state controller transfers pledged lease rental payments to the trustee prior to transferring other state aid funds to a participating district. Rental deficiencies from interceptable state aid, if any, are rolled over into the next month. School districts are still required to make pledged lease payments from their general fund if interceptable state aid is not sufficient.

Lease payments, and hence interceptable state aid, may be abated under the respective school district leases to the extent there is damage or destruction to the leased assets. To cover for this risk, participating school district leases will need to have pledged leased assets equal at least to the par value of the bonds and require under their leases casualty insurance, excluding earthquake insurance, equal to the replacement value of leased structures. Due to

the absence of earthquake insurance, leased assets will need to pass Standard and Poor's seismic risk screening model. The leases will also need to contain provisions whereby the California Infrastructure Bank is required to actively monitor insurance in force and take action if it appears a casualty insurance policy is about to expire. The leases will also need to require two years' worth of business interruption insurance. Associated indentures are expected to require a debt service reserve equal to the lesser of maximum annual debt service, 10% of the par amount of bond issuance, or 125% of average annual debt service. The leases will also require maintenance and operations expenses for the leased assets to be paid by the participating school districts.

Standard & Poor's requires at least 2x coverage of annual lease payments by state aid in order to maintain the program rating upon the initial rating.

Colorado State Aid Intercept Program ('AA-')

Governing statutes: House Bill 1214 created a state aid withholding program to provide credit enhancement for Colorado school district bonds. Based on the provisions of this law, Section 22-41-110 of Colorado Revised Statutes, school districts must apply to the state to use this program as bond security. This rating moves with that of the state.

Eligibility requirements: Eligible financings include GO bonds issued by a school district on, or after, July 1, 1991, as well as electorate-approved, non-terminable leases and installment contracts. To qualify bonds for the program, a school district must file an issuance resolution, a copy of the bond offering document, and its agreement with an independent paying agent. In 1997, the state clarified that it will cover debt service payments even if it determines that a district is unlikely to repay the advanced funds. Therefore there is no requirement that existing state aid cover future maximum annual debt service as long as it is expected that district will continue to participate in the withholding program and be eligible for future state equalization.

Program provisions: If a paying agent has not received a debt service payment by the business day before the due date, the agent will notify the state treasurer and the school district. After notification, the state treasurer will contact the school district to determine whether payment will be made. If the district cannot make the payment, the state treasurer will forward the amount necessary in immediately available funds to the paying agent to be applied only to debt service, even if the state determines it is unlikely to be repaid in full by the district's available state aid under Article 53 over the following 12 months.

The state treasurer's policy stipulates that payment will be made by 1 p.m. on the due date to allow for timely payment to bondholders. Upon payment by the state, the state treasurer will notify the department of education, chief financial officer of the school district, and General Assembly. The department of education will initiate an audit to determine the reason for nonpayment and, if necessary, develop control measures that will prevent future nonpayment.

Georgia State Aid Intercept Program ('AA+' or 'A' depending on legal protections)

Governing statutes: Georgia's voluntary state aid intercept program authorized by House Bill 792 in 1991, allows the state to guarantee repayment of a local school district's GO bonds. Eligible financings include any bonded indebtedness that the local school district elects to have covered by the program. The AA+ rating moves with that of the state; the A program will not likely move with the state's rating.

Eligibility requirements: To participate in this program, a school district must, at the time of debt issuance, irrevocably authorize by resolution the State Board of Education to withhold aid payments for debt service purposes when necessary.

Program provisions: Under the program, the paying agent must notify the board if monies held in the sinking fund are insufficient to make timely payment of principal and interest no later than the 15th day of the month before the scheduled debt service payment date. Upon notification, the state transfers to the paying agent the lesser of an amount sufficient to make the debt service payment, or the balance of any funds due the local school district under any state education appropriation authorized for the current fiscal year.

Districts whose eligible principal and interest payments are expected to exceed their average monthly state aid payment are advised by the state against the selection of July 1 and Jan. 1 as the debt service due dates.

Additional Standard & Poor's requirements: To receive a rating under the basic program, Standard & Poor's requires minimum historical state aid coverage of at least 1x on maximum debt service.

Resolution based enhancements: Resolution based enhancements strengthen the structure of the program and make the program more similar to state appropriation debt. Consequently, a school district may qualify for a rating on par with the state's appropriation debt if it includes certain structural elements in its bond resolution. An amendment to the Georgia constitution in 1996 allows school districts to share in the 1% Special

Purpose Local Option Sales Tax (SPLOST) revenue used by most of the state's counties. In recognition of the additional security provided by voter-approved SPLOST moneys and the state's increased commitment to fund education, the addition of structural elements to an individual school district's bond resolution can result in a program rating on par with the state appropriation rating. To be eligible to receive this higher program rating, a school district must incorporate one of two debt service coverage conditions in its bond resolution:

For bonds that carry the additional security of the state aid intercept:

- Maintenance of at least 2x state aid coverage of maximum annual debt service; and
- An additional bonds test requiring at least 2x state aid coverage of maximum annual debt service for all outstanding and subsequent bonds issued under the program.

OR

For bonds issued under the state aid intercept program that carry the additional security of the SPLOST:

- Maintenance of at least 1.5x state aid coverage of maximum annual debt service;
- An additional bonds test requiring at least 1.5x state aid coverage of maximum annual debt service for all outstanding and subsequent bonds issued under the program;
- At least 1x SPLOST coverage of annual debt service at the time of issuance, and projected 1x coverage for the life of the bonds; and
- An additional bonds test requiring at least 1x SPLOST coverage of debt service for all outstanding and subsequent bonds issued under the program with the additional SPLOST security.

For all bonds issued under the state aid intercept program, the debt service schedule should conform to the intent of the program's authorizing legislation. The debt service schedule should be established taking into account the availability and timing of state aid payments and be in accordance with the recommendations of the state board of education.

For SPLOST-supported bonds, Standard & Poor's will review the methodology used in calculating available SPLOST revenues. A five-year historical and projected schedule is required for review at the time of sale. An analysis of the schedule will be performed, taking into account actual performance and any new occurrence that could affect future sales tax collections. In general, Standard & Poor's would not expect to see sales tax projections that exceed historical performance without identifiable reasons.

Indiana State Aid Intercept Program ('AA ' or 'A' depending on legal protections)

Governing statutes: Based on Section 20.5.4.10 of the Indiana Code, the state treasurer is required to withhold state aid if a school corporation is unable to pay GO debt service requirements. The withholding guarantee also applies to lease rental payments made by a school corporation to meet a school building corporation's debt service. The 'AA-' rating moves with the state's rating; the 'A' rating will not likely move with the state.

Eligibility requirements: All school corporations are eligible for the program rating, provided state aid levels are equal to or greater than maximum annual debt service requirements.

Program provisions: If the school corporation is unable to meet its debt service obligation, the state treasurer must make the payment from the corporation's appropriated state aid for that calendar year. Payment is made directly to the paying agent on a school corporation's GO debt, and to the building corporation when lease rental payments are insufficient. If the next state aid payment does not cover the obligation, the balance is deducted from the following allotment. As required by state statute, deducted aid is first taken from the state's property tax relief funds to a school corporation, second from all other state aid funds except tuition support, and third from tuition support to the school corporation. Strong state budget and tax levy oversight decreases the likelihood that revenues will be insufficient for debt service and enhances the quality of the program. The state board of tax commissioners is statutorily required to review GO and lease rental property tax levies annually. If the proposed levies are insufficient, the board will establish a levy to meet the school corporation's obligations.

Resolution based enhancements: Indiana school district bonds and school corporation leases issued under the state aid intercept program will be assigned a higher rating if the following elements are added to the structure of a bond issue:

- State aid coverage of maximum annual debt service on outstanding and proposed program bonds must be at least 2x.

In addition, the school bond resolution must include provisions requiring:

- Transfer of debt service payments to the paying agent at least five business days in advance of the debt service due dates; and
- An independent paying agent or bond registrar with immediate notification and claimant responsibilities to the state, in the event a debt service deposit is not made or is insufficient.

As is the case with Indiana's basic program rating, the higher rating will carry a provisional ('pr') designation until the project construction certificate is received, since payments are contingent on successful project completion.

Kentucky State Aid Intercept Program ('A+')

Governing statute: State legislation revised in 1994 (KRS 157-611, 157-615-157-620) expanded Kentucky's debt service withholding mechanism to cover all school district general obligation and lease-secured bonds. This rating moves in conjunction with the state's rating.

Eligibility requirements: Prior to the 1994 legislative change, the Kentucky program was limited to school debt issues with at least partial debt service participation by the Kentucky School Facilities Construction Commission. The revised legislation now covers all school district general obligation and lease-secured bonds if the district meets the following criteria: a) it must levy a minimum equivalent tax rate of 25 cents as defined by KRS 157-615; and b) all new revenue generated by any tax increase required to meet the minimum equivalent tax rate must be placed in a restricted account for school building construction bonding and on June 30 of each year the district shall transfer all available local revenues to a restricted account for school building construction.

Program provisions: The program is based on the requirement for the state to withhold appropriated state aid if a school district is unable to meet debt service requirements. In connection with each program bond issue, it is the duty of the commission to send to each board of education at least thirty days before the due date of any payment a notice of the amount to become due and the date thereof and to require acknowledgement thereof; and to receive from the board of education in the event of failure, satisfactory evidence that sufficient funds have been transmitted to the commission or its agent, or will be so transmitted for paying debt service and administrative costs when due, as provided in the lease, to notify and request that the department withhold from the board of education a sufficient portion of any un-disbursed funds then held or set aside or allocated to it, and to request that the department transfer the required amount thereof to the commission for the account of the board of education.

Additional Standard & Poor's requirements: A school district's current annual state aid must cover maximum annual debt service by at least 2x.

Kentucky State Aid Intercept Program for Commonwealth Universities ('A+')

Governing statute: State Legislation revised in 2004 (KRS 160A.550-164A.630) establishes a debt service withholding mechanism to cover debt obligations of the commonwealth's universities. This rating moves in conjunction with the commonwealth's rating.

Eligibility requirements: The legislation covers all debt issued by the commonwealth's state universities. The commonwealth's Office of Financial Management, (a division of the Finance and Administration Cabinet), reviews all debt issuance by the commonwealth's state universities, and reviews indentures to ensure inclusion of notification guidelines and responsibilities of the Secretary of the Finance and Administration Cabinet.

Program provisions: Under KRS 164A.608, if a university is unable to pay the required principal and interest payments due or fails to transmit to the paying agent bank or trustee the debt service or any payment when due as required by the bond issuance resolution, the paying agent bank or trustee shall notify the secretary of the Finance and Administration Cabinet in writing and request that the cabinet withhold or intercept from the governing board a sufficient portion of any appropriated state funds not yet disbursed to the institution to satisfy the required payment on the bonds. If the secretary determines that the institution is in risk of defaulting on the payment of the bonds, the secretary shall notify the governing board and within five (5) days remit payment to the paying agent bank or trustee such funds as are required from the appropriation to the institution. Thereafter, the governing board shall, to the extent that it is otherwise legally permitted, take action within sixty days (60 days) to adopt a resolution to generate additional revenues, such as increasing minimum rents, tolls, fees, and other charges, in order to positively adjust remittances to the funds accounts.

Additional program requirement: Provisions contained in the bond indenture must require the university to make sufficient sinking fund payments thirty days prior to debt service due date. If insufficient monies are available 30 days prior to the debt service due date, the trustee must be directed to transfer funds from a debt service reserve (to be funded at maximum annual debt service) to the sinking fund to forestall a default on the bonds. Ten days prior to the debt service due date, the trustee must notify, in writing, both the university and the commonwealth's Secretary of the Finance and Administration Cabinet of such an event and request that amounts be remitted to the trustee pursuant to KRS section 164.608 to cure such deficiency or to restore the amount transferred from the debt service reserve.

If, 10 days prior to the debt service due date, insufficient funds are available to make the debt service payment, or if the debt service reserve has been utilized to forestall a default, then such inci-

dences qualify as an event of default that triggers the intercept, with the exercise of such and remittance of such prior to the debt service due date, representing a cure of the event of default.

In addition to the terms to be included in the bond indenture, Standard & Poor's requires that qualifying universities demonstrate a minimum of 2x coverage of maximum annual debt service on all outstanding debt (regardless of the indenture under which it is issued) from general fund appropriations from the commonwealth for the current fiscal year and the two most recent fiscal years. Furthermore, maintenance of the 'A+' rating will be dependent on maintaining a minimum coverage of 2x.

Massachusetts Qualified Bond Act ('AA-')

Governing statute: Under the Qualified Bond Act (Massachusetts General Law, Chapter 44A), the state treasurer pays debt service directly to the paying agent and withholds the amount of the payment from the borrower's annual state aid appropriation. This rating moves in conjunction with the state's rating.

Eligibility requirements: Approval by the State Emergency Finance Board, which oversees and monitors the program, is required. The program covers all pre-approved local debt issued by cities, towns and regional school districts.

Program provisions: The entity's treasurer certifies to the state treasurer the maturity schedule, interest rate, and dates of payment on the bonds within 10 days of issuance. If necessary, the state treasurer pays debt service and after payment withholds from the distributable aid payments or any other amount payable to the municipality or school district (all state aid is subject to annual appropriation) a sum sufficient to cover debt service. Entities participating in this program are required to appropriate and to include in their tax levies amounts necessary to pay qualified debt service. There is no coverage requirement in the Massachusetts law; however, state aid has historically been substantially higher than the amount of qualified debt service, resulting in multiple times coverage.

Michigan State School Bond Loan Fund Program ('AA')

Governing statutes: Section 16 of Article 9 of Michigan's constitution (adopted in 1963) created the Michigan School Bond Loan Fund Program to provide districts access to funds to avoid a default on qualified debt. This rating moves in conjunction with the state's rating.

Eligibility requirements: For a bond to be eligible for the School Bond Loan Fund Program, it must be a voter-approved qualified bond. The proceeds must be used for capital expenditure purposes, but not for maintenance. To participate in the program, a school district must apply for qualification of each bond issuance. The district must complete the qualification application forms and substantiate that the planned improvements are needed and the costs are reasonable. In order to borrow from the bond loan fund, the district is required to levy minimum property tax millages for debt service and for general operating expenses as the minimum local property tax effort.

Program provisions: If a school district fails to meet its debt service obligation for qualified debt, the state treasurer is notified and pays the required debt service. The loan from the bond loan fund becomes an obligation of the district, with the loan repayment scheduled as part of the district's annual debt service. Access to the loan fund is also available as a property tax relief mechanism for qualified principal and interest payments. In effect, borrowing from the fund to limit property tax levy requirements extends the debt retirement term. If the balance in the state's loan fund is insufficient to cover obligations, the state is required to make loans from the general fund and issue general obligation bonds if necessary to raise sufficient funds. Since the fund is an obligation of the state, the guarantee program is rated on par with the state's GO debt.

Minnesota State Standing Appropriation Program ('AAA')

Governing statutes: Authorized by Minnesota Statutes, Section 126C.55, the Minnesota program was designed to correct potential school district default situations and is backed by a standing appropriation from Minnesota's general fund. This rating moves in conjunction with that of the state.

Eligibility requirements: All school districts are eligible to benefit from this enhancement. To apply for participation in the School District Credit Enhancement Program, the school district files a school board resolution with the commissioner of education. Upon acceptance into the program, a participation certificate is issued to the applying school district.

Program provisions: A participating district must covenant to notify the commissioner of the department of a potential default as soon as possible, but not less than 15 business days before the debt service due date. A district must also covenant to deposit with a paying agent sufficient funds to make payments on its bonds at least three business days before the debt service due date. The school district must enter into a paying agent agreement that requires the paying agent to inform the commissioner of education if it becomes aware of a default, a potential default or if there are insufficient funds on deposit with the paying agent three business days before the debt service due date. Once a school district elects to

enter this program and is accepted by the state, it cannot rescind its application as long as any debt obligation of that issue is outstanding. Upon notification to the commissioner of education, the commissioner of finance will issue a warrant authorizing the commissioner of education to pay the paying agent the amounts necessary on or before the date payment is due. The amounts needed for this purpose are appropriated to the Department of Education from the state general fund.

Minnesota County Credit Enhancement Program ('AAA')

Governing statutes: Authorized by Minnesota Statutes, Section 373.45, the Minnesota program was designed to provide a state guarantee of the payment of principal and interest on a county's GO or lease debt obligations issued after June 30, 2000 for the purpose of funding the construction of jails, correctional facilities, law enforcement facilities, social services and human services facilities, or solid waste facilities. This rating moves in tandem with that of the state.

Eligibility requirements: In order to qualify for participation in the County Credit Enhancement Program, the bonds must be issued after June 30th, 2000 and the county must apply to the Public Facilities Authority prior to issuing the bonds. The county must also enter into an agreement with the authority obligating the county to be bound by the provisions of Minnesota Statutes, Section 373.45 Subd. 3.

Program provisions: A participating county must enter into an agreement with the Public Facilities Authority obligating the county to:

- Deposit with the paying agent three days before the date on which the payment is due an amount sufficient to make that payment;
- Notify the authority, if the county will be unable to make all or a portion of the payment; and
- Include a provision in the bond resolution and county's agreement with the paying agent for the debt obligation that requires the paying agent to inform the commissioner of finance if it becomes aware of a potential default in the payment of principal or interest on that issue or if, on the day two business days before the date a payment is due on that issue, there are insufficient funds to make the payment on deposit with the paying agent.

The provisions of this agreement are binding to an issue as long as any debt obligation of the issue remains outstanding.

After receipt of a notice of a potential default in payment of principal or interest in debt obligations covered by this agreement, and after consultation with the county, the paying agent, and after verification of the accuracy of the information provided, the authority shall notify the commissioner of the potential default. The notice must include a final figure as to the amount due that the county will be unable to repay on the date due. Upon receipt of this notice from the authority, the commissioner shall issue a warrant and authorize the authority to pay to the paying agent for the debt obligation the specified amount on or before the date due. The amounts needed for the purposes of this subdivision are annually appropriated to the authority from the general fund.

If Minnesota makes a guarantee payment on a participating county's behalf, the county is obligated to repay the state with interest and would be required to levy a property tax if necessary, to make such repayments.

Mississippi State Aid Capital Improvement Bond Program ('AA-')

Governing statute: The program was created under the state's Accountability and Adequate Education Program Act of 1997, which allows school districts to authorize the state board of education to withhold an amount of the district's Mississippi Adequate Education Program (MAEP) funds and pledge these funds for debt service on capital improvement bonds. The authorization that allowed districts to pledge MAEP funds for debt service expired on June 30, 1998. This rating moves in conjunction with that of the state.

Eligibility requirements: To qualify for the program, districts had to request that the state Department of Education directly deposit their MAEP funds with an independent paying agent and specify this in the bond resolution. Upon state approval of this request, the state irrevocably agreed to perform this function as long as program debt is outstanding.

Program provisions: State funds are deposited directly to a paying agent in advance of the debt service due date and these monies are held in investments that meet Standard & Poor's criteria. Bond issues using this security were sized according to the amount of MAEP allocation each district received (up to $160 per pupil based on average daily attendance) and bond maturities could not exceed 20 years. MAEP funds had to provide at least 1x debt service coverage. The state, by statute will take all actions necessary to ensure that the amount of the district's MAEP funds pledged to repay state aid capital improvement bonds will not be reduced as long as the program bonds are outstanding.

Missouri Direct Deposit of State Aid Program ('AA+')

Governing statutes: In 1995, the Missouri Legislature adopted Senate Bill 301 that established a program to assist Missouri school districts with

their financing needs. This rating moves in conjunction with that of the state.

Eligibility requirements: Any school district is eligible to apply to the state to use the program as an additional bond security. Program guidelines specifically exclude any type of obligation other than GO bonds. Conditions for state approval include a state aid coverage requirement plus the district entering into a binding direct deposit agreement with the state to divert monthly state aid to a trustee-held debt service fund. To enter the program, districts must meet coverage requirements of state aid in each of the past three fiscal years covering maximum annual debt service by at least 1.5x and agree to the state making direct deposit of its monthly state aid payments to a state-selected direct deposit trustee. Once debt has been issued using this program, the district cannot pledge state aid as a primary or parity security to any non-program obligation as long as any program debt is outstanding. Participating school districts waive all rights and privileges to institute any action authorized by any act of Congress relating to bankruptcy.

Program provisions: The Missouri program provides for a first-dollar claim on monthly state aid, which will be directly deposited to a master bond trustee. Program oversight and management is the responsibility of the Missouri Health & Educational Facilities Authority (HEFA), as is the ability to establish operating guidelines. HEFA also pays certain issuance costs for participating school districts. Under the program, a school district enters into a direct deposit agreement with the state to fund a debt service payment account for either individual issues or participation in a HEFA-issued pooled financing. Upon application approval, a district can use this security enhancement for new and refunding issues.

The state aid flowing to the direct deposit trustee are the first dollars of the district's monthly state aid payment. The trustee, in turn, remits to each independent district paying agent the required principal and interest at the required times. HEFA, the Department of Elementary and Secondary Education, the Office of Administration, and the treasurer's office coordinate activities to operate the direct deposit mechanism. The direct deposit payments will be made in 10 level monthly increments, with payments starting the month of the bond issue close. If any monthly payment is insufficient to meet the 1/10th monthly increment requirement, the next direct deposit will make up the shortfall and include that month's required payment. Although the annual debt service payments will be made out of the first 10 months of a participating district's state aid, the direct deposit account has access to its entire annual state aid appropriation, if needed.

To eliminate the risks associated with late state budget adoptions or mid-year state aid reductions, debt service payment dates cannot be in the ending or beginning months of the state's fiscal year. All direct deposit funds and HEFA-held moneys will be invested in securities that meet Standard & Poor's investment criteria.

Nevada School District Bond Guarantee Program ('AAA')

Governing statutes: The Nevada permanent school fund was established under Article 11, Section 3 of the Nevada Constitution, to hold the proceeds of federal lands granted to the state by the U.S. Congress for school purposes, estates that escheat to the state, and fines collected under the state's penal laws. The constitution specifies that proceeds of the fund may be pledged only for educational purposes. Interest earnings may be apportioned to the various county districts for educational purposes. Nevada Revised Statutes' chapter 387 enables local school districts to apply for a guarantee of debt service from the state's permanent fund under the Nevada School District Bond Guarantee Program. This rating is independent of that of the state.

Eligibility requirements: The state treasurer will enter into a guarantee agreement with a school district only if the executive director of the department of taxation submits a written report to the state board of finance, indicating that the school district has the ability to timely service of its debt obligations.

Program provisions: Program debt is backed by the constitutional pledge of the permanent fund's assets. There is a statutory requirement that limits the program's guarantee amount to 250% of the lesser of cost or fair market value of the fund's assets. Additionally, the program limits the amount of bonds that may be guaranteed for any individual school district to no more than $25 million outstanding at any one time. A state board of finance policy limits permanent fund investments to U.S. Treasuries and agencies and specifies a minimum liquidity requirement. The minimum liquidity requirement is defined as the cash flow necessary to support 10% of guaranteed bonded indebtedness and such securities must mature within one year. Finally, legal features structured into the guarantee agreements provide for the early deposit of school district's debt service payment with the state treasurer or a designated paying agent, and immediate notification to the state treasurer if such payment is not made. The guarantee agreement requires that the district transfer debt service amounts to the state treasurer or a designated paying agent, not later than five business days prior to each scheduled payment date. If there is a shortfall, the treasurer pays the deficiency to the paying agent from guarantee

funds at least one day prior to the debt service due date. If the guarantee is triggered, the state treasurer will withhold subsequent payments of money that would normally be distributed to the district from local school support taxes and the state distributive account to replenish the permanent fund.

New Jersey Additional State Aid Bonds Program ('AA-')

Governing statute: The New Jersey Additional State Aid Bonds Program is authorized by New Jersey Statutes 18A: 64A-22.1. Additional state aid bonds require the state to appropriate funds to pay debt service for school district bonds and for county GO bonds issued on behalf of community college districts. This rating will move in conjunction with that of the state.

Eligibility requirements: In order to participate in the program, the board of chosen freeholders of a county where a college is located must receive a certification from the state treasurer authorizing them to issue bonds or notes in an amount not to exceed 50% of the total cost of the project and not more than $265 million in principal. The board of chosen freeholders may issue bonds or notes within one year of receiving this certification from the state treasurer.

Program provisions: Within 10 days of issuing bonds secured by this program, the county treasurer or the treasurer of any other legally empowered issuer shall provide the state treasurer with a debt service schedule and the name and address of the paying agent. The state treasurer will appropriate and pay to the county, on or before the payment date, an amount equal to the payment due. The county, or other legally empowered issuer, shall use these funds solely for the timely payment of debt service to the paying agent.

New Jersey Fund for the Support of the Free Public Schools Program ('AA ')

Governing statute: The New Jersey Fund for the Support of the Free Public Schools Program is authorized by the Article VIII, Section 4 of the New Jersey Constitution. This rating will move in conjunction with that of the state.

Eligibility requirements: Local school bonds issued by school districts, municipalities, and counties are eligible for this program.

Program provisions: The program pledges a portion of a fund's assets for a school district's debt service should it be unable to meet principal and interest payments. The bonds carry a specific contractual relationship between the bondholder and the state fund. The treasurer acts as agent for the fund and, if needed, applies monies from the support fund to purchase maturing principal and interest due from the bondholder; these payments and purchases continue as long as the issuer remains unable to meet its debt service obligations.

New Jersey Statutes 18A:56-19, as amended, requires two reserve accounts to be maintained in the fund. The old school bond reserve account will be funded in an amount equal to at least 1.5% of aggregate school district debt issued by counties, municipalities, or school districts prior to July 1, 2003. The new school bond reserve account will be funded in an amount equal to at least 1% of aggregate school district debt issued on or after that date. In the event that the amounts in either the old school bond reserve account or the new school bond reserve account fall below the amount required to make payments on bonds, the amounts in both accounts are made available to make payments for bonds secured under the reserves. On or before September 15th of each year, fund trustees determine the aggregate amount of school purpose bonds outstanding and are responsible for maintaining appropriate reserve levels based on the market value of reserve investments. If at that time, the funds on deposit fall below the required levels, the State Treasurer is required to appropriate and deposit into the school reserve such amounts as may be necessary to meet fund level requirements. To ensure sufficient liquidity, at least one-third of the obligations in the fund must be due within a year. Fund assets are direct or guaranteed U.S. government obligations and are valued annually.

New Jersey Qualified Bond Program ('AA-')

Governing statute: New Jersey Statutes 18A:24-93 authorize the state treasurer to intercept a portion of city, township, and other local municipality qualified state aid to pay debt service on qualified bonds directly to the trustee. This rating moves in conjunction with that of the state.

Eligibility requirements: To qualify for this program, the issuer municipality must receive state approval for the planned capital improvements and the scheduled debt service.

Program provisions: The statute authorizes the state treasurer to intercept a portion of city, township, and other local municipality qualified state aid to pay debt service on qualified bonds directly to the trustee. The state treasurer forwards withheld amounts to the paying agent for payment of debt service on or before each principal and interest payment date. The balance of this state aid is then remitted to the appropriate municipalities.

Additional Standard & Poor's requirements: A municipality's state revenue must be at least equal to 1x maximum annual debt service.

New York State Aid Intercept Program ('A')

Governing statute: Section 99b of the state finance law authorizes the aid withholding and specifies the procedures that would be followed should the state be required to make a debt service payment for a program participant. This rating will not typically move with that of the state.

Eligibility requirements: All school districts are eligible for this program.

Program provisions: Upon notification of a default by a school district, the state comptroller is required to deduct from the next state aid payment due to the school district an amount sufficient to meet any deficiency in debt service. If this aid payment does not cover the obligation, the balance would be deducted from the succeeding allotment. The funds would be forwarded directly to the paying agent, and the comptroller would notify the school district of the payment. A technical default can occur on New York school district GO bonds, as the state finance law contains no provisions to activate the mechanism before actual default. However, the minimum guarantee program reflects the fact that a prompt cure of any such default is assured.

Additional Standard & Poor's requirements: A school district's annual state aid must cover maximum annual debt service by at least 1x.

Ohio State Aid Intercept Program ('AA' or 'AA-' rating depending on required coverage levels)

Governing statute: Pursuant to section 3317.18 of the Ohio Revised Code and section 3301-8-01 of the Ohio Administrative Code, the Ohio Credit Enhancement Program lets a school district enter into an agreement that allows the state to withhold state education funds due to the district under chapter 3317 of the revised code and apply those funds to the district's debt service payments. Section 3301-8-01 of the Ohio Administrative Code was revised in March 2004 to require 2.5x maximum annual debt service coverage levels. Prior to that time, the required coverage under the program was 1.25x. The ratings on bonds secured by the prior version of the enhancement program will be evaluated on a case-by-case basis, and issues that meet the Standard & Poor's requirement of 2x maximum annual debt service coverage will be upgraded to a 'AA' rating. Those that do not meet this coverage level requirement will continue to be rated 'AA-' For bonds issued after the program was amended in March 2004, the 'AA' rating applies. Both ratings move with the state's rating.

Eligibility requirements: To be eligible, a district must meet all program criteria including having the approval of both the state department of education and the office of budget and management to use the security. Districts applying for inclusion in the program must provide financial information to the department of education and the office of budget and management, including assessed value and taxpayer concentration information, audits and budgets, and schedules of proposed and outstanding debt. The program excludes noninvestment-grade rated issuers and requires an extensive review of the credit quality of unrated districts. The district must have an underlying credit rating determination by Standard & Poor's. Upon state approval, the contract between the state and local school district is irrevocable as long as any program debt is outstanding. At the time of state approval for program participation, projected state aid for the current fiscal year must be at least 2.5x the maximum annual debt service on the enhanced debt. In addition, on each debt service date during the current or any subsequent fiscal year, projected state aid remaining for that year must cover the remaining debt service for the year by 1.25x.

Program provisions: The district must certify to the state department of education and the paying agent whether or not it can make its full debt service payment 15 days before each debt service due date. Ten business days before the due date, the district must deposit with the paying agent an amount sufficient to make the debt service payment. If the district has failed to make a sufficient deposit, the paying agent will immediately contact the state department of education. In the event a district is unable to make a sufficient debt service payment and the payment will not be made by a credit enhancement facility, the department of education will pay the paying agent the lesser of the amount of the debt service due or the amount of state aid due to the district for the remainder of the fiscal year. This payment will be made at least one business day prior to the debt service payment date.

Oregon School Bond Guarantee Program ('AA-')

Governing statute: The Oregon legislature passed the school bond guaranty act in 1997 (Oregon Laws 1997, chapter 614). This rating will move in conjunction with that of the state.

Eligibility requirements: Participation in the program is voluntary and open to all common school districts, union high school districts, education service districts, and community college districts in the state.

Program provisions: The amount of debt that can be guaranteed by the state at any one time is limited to 0.5% of true cash value of taxable property in the state. The program is administered by the Oregon State Treasury, which has established administrative rules prescribing application procedures and qualification guidelines. Upon determination of a district's eligibility, the state treasurer issues a certificate of qualification valid for one year from

the date of issuance, which may be applied to any or all GO bonds, including GO refunding bonds, issued by the district during that period.

Participating districts are required to submit to the state department of education audited financial statements and budget documents annually, as well as report any material changes or events that might affect their eligibility for participation in the program.

The business administrator of a participating district is required to transfer to its paying agent moneys sufficient to cover each debt service payment at least 15 days prior to the scheduled payment date for guaranteed bonds. If unable to do so, the district must notify the paying agent and the state treasurer. The paying agent must notify the state treasurer if sufficient funds are not transferred to the paying agent at least 10 days prior to the scheduled debt service payment date. The state treasurer will transfer sufficient funds to the paying agent to make the debt service payment no later than the scheduled payment date if sufficient funds have not been transferred to the paying agent.

A participating school district for which the state has made a guarantee payment is obligated to repay the state, with interest and, in certain instances, an additional penalty. The state may obtain such reimbursement from moneys that otherwise would be used to support the district's educational programs. The state is authorized to intercept any payments from its general fund, the state school fund, income from the common school fund, and any other operating moneys provided by the state to the district. If the state treasurer determines that intercepted funds, interest, and penalty payments will be insufficient to provide timely reimbursement, the state may require the district to meet its repayment obligations with the help of the state attorney general's office. Legal remedies include compelling the district to levy a property tax to pay debt service on its bonds and other obligations when due.

In the event the state is required to make a debt service payment on behalf of a participating district, if sufficient state funds are not on hand or available for such purpose, the state treasurer may obtain a loan from the common school fund or other qualified state funds. The constitutional amendment allows the state to issue property tax-supported GO bonds to provide funding to satisfy its guarantee obligations under the program, including the repayment of borrowed moneys from the common school fund.

Pennsylvania State Aid Intercept Program ('A' or 'A+' depending on legal protections)

Governing statutes: Pennsylvania's state aid intercept program is based on the withholding provisions of Act 150, which amended section 633 of the Public School code. Standard & Poor's also assigns a program rating to lease bond obligations of Pennsylvania's public school building authority based on the provisions of Sections 785 and 790 of the Pennsylvania Public School Code. This 'A' rating will not typically move in conjunction with that of the state; the A+ rating will move with the state's rating.

Eligibility requirements: The program automatically applies to all school districts.

Program provisions: Under these provisions, the secretary of education automatically withholds state aid from any school district that fails to meet debt service or fails to pay lease rentals due a municipal authority or nonprofit corporation. The withheld amount is the lesser of unpaid principal and interest or lease requirements, or the amount of state aid remaining for the fiscal year. These funds are transferred directly to the bond trustee, or the municipal authority or nonprofit corporation. The secretary of education requires a school district's annual financial report to include debt service payable during the fiscal year.

Additional Standard & Poor's requirements: To receive a program rating, Standard & Poor's requires minimum historical state aid coverage of at least 1x on maximum eligible debt service. To satisfy the debt service coverage requirement, the district must consider the timing and amount of debt service payments and state aid receipts. Amending the bond resolution regarding the notification timing in the event of a potential default can help enhance the program rating.

Resolution based enhancements: A school district may receive a higher program rating if it includes certain structural elements in its bond resolution. Amendments to the Pennsylvania public school code enacted in 1998 allow a school district to voluntarily structure its bonds so that a failure to make a required sinking fund deposit prior to the debt service payment date triggers the intercept of the district's receivable state education aid. Prior to the amendment, this intercept was triggered only when a school district failed to pay or provide for the payment of debt service at the date of maturity or mandatory redemption, whether or not the district established a sinking fund.

The ability to leverage state aid receipts under the amended legislation into a higher program rating is contingent on the school district's inclusion of structural provisions in the bond legal documents. These provisions must specify notification and timing requirements such that the state is notified of an impending shortfall, state aid is withheld, and the necessary funds are transferred to the fiscal agent prior to the debt service payment date. As with the basic enhancement program, the district must demonstrate at least 1x coverage of maximum

annual debt service by remaining state aid appropriations to qualify for the higher program rating. Increased debt service coverage is not required to achieve the higher program rating, because the timing of district receipt of state aid is largely statutorily defined.

South Carolina Education Finance Program ('AA')

Governing statute: The South Carolina program is based on 59-71-155 of the 1976 South Carolina Code. This rating will move in conjunction with that of the state.

Eligibility requirements: The program applies to school district general obligation bonds and does not require a special application to use this program as security-it is effective for all school bonds issued.

Program provisions: Under the program, county treasurers are required to notify the state treasurer 15 days in advance of a district's debt service payment date if insufficient funds are available for full and timely payment. The state treasurer monitors the situation until the third business day prior to the payment date. If amounts are still insufficient at that time, the state treasurer requires the county treasurer to use state distributed school district revenue to make up the deficiency or the state could advance general fund moneys for that purpose. The maximum amount of state general fund moneys available to be applied to a potential default is based on the total appropriation under the Education Finance Act for that year.

South Dakota State Aid Intercept Program ('A')

Governing statutes: The 1988 amendments to Title 13 of South Dakota Codified Laws authorize lease purchase agreements between the facilities authority and school districts. If a school district is unable to meet lease rental requirements to the facilities authority, Chapter 19 of Title 13 of the state's statutes permits the secretary of education to withhold state aid from the school district. This rating will not typically move with that of the state.

Eligibility requirements: Local school districts are eligible for the program. Due to South Dakota's GO debt limitations for school districts; major capital projects are funded by proceeds of bonds issued by the South Dakota Health & Educational Facilities Authority.

The structure of a lease purchase agreement between the facilities authority and a school district must meet statutory requirements. The school district has no option to cancel the agreement and must annually levy a capital outlay millage, which is limited to three mills. The capital outlay millage is the revenue source for lease rental payments. The millage is continuously levied for the life of the lease, eliminating the risk of non-appropriation. The lease is a net lease, entitling the trust agent and the facilities authority to full lease rental payments. Lease rentals are due to the trustee 45 days before debt service payments are due.

Program provisions: Lease rental payments are due to the trustee 45 days before debt service payments are due. If local revenues are insufficient to meet the lease rental requirements, the trustee notifies the facilities authority, as lessor. The authority requests the state Board of Education to direct the defaulting district's state aid to the trustee for payment of unpaid lease rentals. State aid is distributed three times per year (on or about August 15, January 15, and May 15th). Distribution is approximately 1/3, 1/3 and 1/3. The first distribution is an estimate because average daily attendance is not calculated until October so adjustments are made to subsequent payments. Lease payments are due 1/1 and 7/1. Debt service dates are 2/15 and 8/15.

Additional Standard & Poor's requirements: State aid must be at least equal to maximum annual debt service.

Texas Permanent School Fund Program ('AAA')

Governing statutes: The Permanent Fund was created by the state constitution to support public schools, with income generated from state-owned land and mineral interests. A voter-approved amendment to the Texas Constitution allows the Texas Permanent School Fund to guarantee qualified school district bonds. The 1983 amendment, Article VII, Section 5 of the constitution, extends the use of the endowment to ensure bondholders of timely debt service payments. This rating is independent of that of the state.

Eligibility requirements: School districts apply to the Commissioner of Education to qualify bonds for the permanent fund guarantee. The commissioner reviews district economic conditions, academic accreditation record, debt and capital needs and financial performance to determine potential future liabilities against the fund. Standard & Poor's requires evidence of the bond guarantee endorsement before assigning the enhanced Rating.

Program provisions: The amount of debt that can be guaranteed by the permanent fund is limited to the lesser of: a) 250% of the lower of cost or current fair value of the assets in the fund, excluding real estate; or b) 250% of the lower of cost or fair value adjusted by a factor that excludes additions to the fund since 1989. In the event of a default, the school district must notify the commissioner not later than five days before the maturity date of the guaranteed debt. The commissioner will then pay

debt service to the paying agent and direct the state to later withhold district state aid to repay the Permanent Fund.

Standard & Poor's rating reflects the fund's strong asset quality and the legal provisions limiting the maximum amount of debt that may be guaranteed by the fund, which is twice the cost or market value of the fund. Additionally, the state's substantial oversight of the qualifying districts enhances the guarantee program.

Texas Higher Education Bond Program ('AA')

Governing statutes: In addition to the programs that benefit elementary and secondary education, an amendment to the state's constitution enhances debt obligations of certain public institutions of higher education. In accordance with Article VII, Section 17 of the Texas Constitution and the 1985 Excellence in Higher Education Act, there is a continuing annual appropriation of $100 million to support higher education. This rating moves with that of the state.

Eligibility requirements: Since 1985, the 26 state universities that do not benefit from the Permanent University Fund—those outside the University of Texas system and the Texas A&M system, each receive a portion of the annual $100 million appropriation. To participate in the program, universities must adhere to the Excellence in Higher Education Act of 1985.

Program provisions: The act allocates the annual appropriation among the universities according to a formula based on:

Student enrollment capacity needs;

- Facilities condition;
- Institutional complexity;
- Existence of medical units; and
- Compliance with the Texas desegregation plan.

A maximum of 50% of each qualified institution's allocation may be pledged for debt service on bonds, while the remaining portion will be used directly for capital improvement projects. According to Vernon's Civil Statutes Article 4357, a university's board of

Standard & Poor's Rated State Credit Enhancement Programs

State	Debt Type Covered	Rating	Outlook	Enhancement
California	Eligible city and county bonds	A	Stable	Motor Vehicle license fee and leases
California	Eligible health care bonds	A+	Stable	Construction Loan Insurance Fund
California	School districts that have received emergency state loans	A+	Stable	State aid withholding law
Colorado	Local school bonds	AA-	Stable	State aid withholding law
Georgia*	Eligible local school bonds	A	Stable	State aid withholding law
Georgia*	Eligible local school bonds	AA+	Stable	State aid withholding law with additional coverage of 1.5x state aid and 1x SPLOST or 2x state aid
Indiana*	Local school bonds, leases	A	Stable	State Withholding Law
Indiana*	Local school bonds, leases	AA	Stable	State Withholding Law with enhanced coverage provisions
Kentucky	Local school bonds, leases	A+	Stable	State aid withholding law
Kentucky	Commonwealth Universities	A+	Stable	State aid withholding law
Massachusetts	All pre-approved local	AA-	Stable	State direct deposit of state aid to paying agent
Michigan	Qualified local school bonds	AA	Neg	Constitutional School Bond Loan Fund; state general fund support
Minnesota	Eligible local school bonds	AAA	Stable	State standing appropriation law
Minnesota	Eligible counties	AAA		State standing appropriation law
Mississippi	Eligible local school bonds	AA-	Stable	State direct deposit of annual adequate education program funds to paying agent
Missouri agent	Eligible local school bonds	AA+	Stable	State direct deposit of state aid to paying
Nevada	Eligible local school bonds	AAA	Stable	Permanent School Fund
New Jersey	Local school bonds	AA	Stable	Constitutional Fund for the Support of Free Public Schools

trustees or a university system's board of regents must file a claim in the amount of the next debt service payment with the state comptroller. Filing of a claim will enable the bond trustees to receive a warrant for payment directly from the state at least 15 days prior to the principal and interest payment date. Bonds issued under Article 7, Section 17 of the state constitution are payable solely from these constitutional appropriations. Each issue must also be in serial form, offered for competitive bidding, and be approved by the state attorney general. Once approved, bonds are incontestable. The legislature may review the level of the appropriation and, with a two-thirds majority of both houses, reduce the amount of the constitutional appropriation for the succeeding five years. However, the legislature may not reduce the appropriation so as to impair the payment of the obligations created by the bonds or notes issued in accordance with Section 17 of the constitution.

Utah School Bond Guaranty Program ('AAA')

Governing statutes: Utah voters approved Proposition 4 in 1996, a state constitutional amendment providing a state general obligation guarantee on qualified local school district debt. The constitutional amendment allows for the implementation of the state's school bond default avoidance program under the Utah School Bond Guaranty Act. This rating moves in conjunction with that of the state.

Eligibility requirements: The state treasurer determines the eligibility of each school district for the program on consultation with the state superintendent of public instruction. Criteria for eligibility include the ability of a school district to meet its debt service obligations without state support.

Program provisions: Once a school district enters the program, the state's full faith and credit and unlimited taxing power are pledged to guarantee

Standard & Poor's Rated State Credit Enhancement Programs (continued)

State	Debt Type Covered	Rating	Outlook	Enhancement
New Jersey	Additional state aid bonds	AA-	Stable	State appropriations for school districts and community colleges
New Jersey	All pre-approved local qualified municipal debt	AA-	Stable	State direct deposit of state aid to paying agent
New York	Local school bonds	A	Stable	State aid withholding law
Ohio*	Eligible local school bonds	AA	Stable	State aid withholding law with 2x MADS coverage
Ohio*	Eligible local school bonds	AA-	Stable	State aid withholding law
Oregon	Qualified local school bonds	AA-	Stable	State guarantee
Pennsylvania*	Local school bonds	A	Stable	State aid withholding law
Pennsylvania*	Local school bonds	A+	Stable	State aid withholding law with enhanced resolution provisions
South Carolina	Local school bonds	AA	Stable	State aid withholding and general fund make-up provision
South Dakota	Local school bonds	A	Stable	State aid withholding law
Texas	Approved local school bonds	AAA	Stable	Constitutional Permanent School Fund
Texas	Higher education bonds	AA	Stable	Direct and continuing state appropriations
Utah	Qualified local school bonds	AAA	Stable	State guarantee
Virginia	All local G.O. debt	A	Stable	State aid withholding law
Washington	Qualified local school bonds	AA	Stable	State guarantee
West Virginia	All local G.O. debt	AA-	Stable	Continuing state appropriations to cover deficiencies
Wyoming	Eligible local school bonds	AAA	Stable	Common School Account, Permanent Land Fund

*See program detail.

timely payment of principal and interest on the district's bonds. Local school district debt guaranteed by the state under the program will not count against the constitutional limit on the state's GO debt.

In order to qualify for a program rating, each school district's issuing bond resolution must provide for adequate and timely notice to the state treasurer, by an independent third party, of impending shortfalls in debt service. Once a state guarantee payment is triggered, the state treasurer will intercept state monies due the school district until the drawn amount is reimbursed to the state. Guarantee payments must be repaid by the school district to the state with interest, and in some cases with additional financial penalties. For additional liquidity, the state treasurer can borrow money from the state's Permanent School Fund to meet a guarantee payment, as well as use other resources.

Virginia State Aid Intercept Program ('A')

Governing statutes: Section 15.1225 of the Code of Virginia authorizes the governor to immediately intercept state aid appropriated for municipalities to pay principal and interest on GO debt in the event of default. This rating will not typically move with that of the state.

Eligibility requirements: The program automatically applies to local governments.

Program provisions: Bondholders must notify the governor of default by a local government. The governor is authorized to withhold debt service payments up to amount of state aid appropriated and payable. The funds would be forwarded directly to the paying agent. A technical default can occur since the notification can occur post default and the state law contains no provisions to force the mechanism before actual default.

Because Virginia's GO bond guarantee program is based on the governor's authority to withhold aid payments to local municipalities, the rating for the program reflects the state's creditworthiness and the legislative appropriations for local municipalities.

Additional Standard & Poor's requirements: To receive the guarantee program's rating based on the withholding provision, a municipality must demonstrate that state aid for each of the last five years was at least 1.25x future maximum annual GO debt service. Each bond issue also must have a paying agent, trustee, or similar fiduciary representative to promptly inform the state of a default.

Washington School Bond Guaranty Program ('AA')

Governing statutes: In November 1999, Washington voters passed by a vote of 60% to 40% a constitutional amendment that allows the state to provide a backup general obligation pledge to local school district voter approved GO bonds. The program is authorized in chapter 39.98 of the Revised Code of Washington.

The program provides pledges the full faith and credit of the state of Washington to the payment of voter-approved school district GO bonds. Upon request and receipt of a certificate evidencing the state guaranty from the Washington State Treasurer's Office, Standard & Poor's rates Washington state local school bond issues on par with the state rating and the rating will move in conjunction with that of the state.

Eligibility requirements: A school board electing to use the guarantee program must pass a resolution authorizing the district to apply to the state treasurer's office. This resolution can be included as part of the district's bond election resolution or can be a separate resolution. Following a successful bond election the district must submit an eligibility request to the state treasurer's office. The state treasurer's office reviews the request and determines eligibility.

Program provisions: If during the term of the bonds, the county treasurer is unable to apply funds sufficient to make debt service payments on district bonds guaranteed under the program, the county treasurer notifies the state treasurer who would immediately transfer sufficient funds to make the required debt service payment. The state treasurer's office would recover from the district any funds paid on the district's behalf as well as any interest, recovery costs or penalties.

West Virginia Municipal Bond Commission Program ('AA-')

Governing statutes: The program is authorized by Chapter 13, Article 3 of the West Virginia Code. West Virginia's Municipal Bond Commission is the successor to the state's Sinking Fund Commission. This rating will move in conjunction with that of the state.

Eligibility requirements: The program covers all local GO debt.

Program provisions: The bond commission serves as the bond trust agent, administering the GO debt sinking funds for the state's school districts and municipalities and oversees debt service. All funds collected to meet debt service on a municipality's general obligation bonds are turned over to the commission for payment of debt service.

In addition to this statutory provision, the commission's administrative guidelines include notifying the local government unit 35 days before a debt service payment if funds on hand are insufficient for debt service. If sufficient funds are not on hand 15 days before the debt service payment, the entity is contacted again. Since 1921, the state legislature has made an annual blanket appropriation in the budget authorizing the governor to meet any defi-

ciency in the state sinking fund because of a school district or governmental unit's failure to meet its debt service obligations. The rating for West Virginia's program reflects the state's strong debt service oversight and the legislature's replenishment provision for the bond commission's sinking fund.

Wyoming School District Bond Guarantee Program ('AAA')

Governing statutes: Local school district bonds are eligible to be guaranteed by the Wyoming School District Bond Guarantee Program under Chapter 13 of the state's Farm Loan Board rules and regulations and Wyoming state statutes 9-4-701(j). This rating will move in conjunction with that of the state.

Eligibility requirements: School districts applying for qualification under the program must first provide the Office of State Lands and Investments a letter from a nationally recognized rating agency indicating that the bonds would be of at least investment-grade quality. Applications for bond issues over $5 million must be accompanied by the precise underlying rating before the guarantee can be granted.

Program provisions: No more than $300 million in school bonds may be guaranteed by the pledged guarantee fund, a very strong 3:1 leverage ratio. Bonds guaranteed under this program are backed by $100 million from the state's Common School Account. The $100 million guarantee fund is a fungible subset of the Common School Account. The Common School Account is a state trust fund derived from mineral royalties on lands dedicated for school income and is, in turn, a non-fungible subset of the state Permanent Land Fund. While only $100 million is pledged from the Common School Account, and amounts over $100 million in the Common School Account could be dedicated in the future to other school programs, current implementation rules charge investment losses first against the non-obligated part of the Common School Account. This provides an even greater guarantee cushion, as the pledged fund would garner the last non-obligated $100 million in the fund in the event of investment losses.

The Common School Account can be used only for school purposes and currently contributes investment income for yearly distributions to schools. The state treasurer's investment policy sets guidelines intended to maximize yield within the constraints of maintaining book value. Outside money managers can be hired to manage a portion of investments. Outside managers' transactions are reported monthly and performance is judged quarterly. Each outside manager is expected to maintain an average portfolio credit quality of at least 'AA'. Up to 5% of a portfolio may be invested in unrated securities, provided that these securities are judged by the Board to be at least of investment-grade quality. No more than 5% of the portfolio may be invested in obligations of any single issuer other than the U.S. government. Investment allocations may change over time, but have historically been conservative. In addition, the guarantee program rules require that an amount at least equal to 10% of guaranteed bond principal be invested in U.S. government securities of three years' maturity or less to ensure liquidity. Debt service payments are not accelerated in the case of an underlying school district's default, preserving the liquidity of the guarantee fund.

Program rules provide adequate time for guarantee funds to cover debt service payments when due, if needed. An independent paying agent is required to notify the State Treasurer not less than five days before a debt service payment date if it becomes aware of a potential default on a guaranteed debt obligation. Program rules also require a school district to notify the state treasurer on its own 15 days before a due date, if it projects that it will not be able to pay debt service. If there is a debt service shortfall, the treasurer must pay the paying agent an amount to cover the shortfall at least one day before the debt service due date. The state requires a defaulting school district to repay the Common School Account for any draw, including lost interest on the fund. ■

Appropriation-Backed Obligations

Appropriation-backed obligations come in various forms; the most prevalent are lease revenue bonds, certificates of participation, and service contract bonds. Municipal appropriation-backed obligations frequently are used to avoid constitutional or other legal restrictions on the use of GO debt. Appropriation-backed obligations may also be the most expedient and flexible financing method for many governments. For these obligations, timely payment of principal and interest depends on annual

appropriations by the issuer. Because lease or service contract payments are not binding on future legislatures or councils, appropriation-backed obligations are generally not considered "debt" under issuers' technical and legal definitions. As a result of the appropriation risk those appropriation-backed obligations that meet Standard & Poor's Ratings Services criteria are rated one notch off the GO ratings, as a reflection that appropriation-backed obligations are not legally debt and do not bear the same legal protections as GO bonds.

However, analytically, these instruments are considered obligations of the entity and are fully reflected in the debt statement and ratios. As a result, failure to make an appropriation will result in a downgrade of both the appropriation-backed obligation and the general obligation of the entity, as a reflection of the willingness of an entity to make good on its obligations.

Standard & Poor's does not consider the essentiality of a particular project in the evaluation of an appropriation-backed obligation. Instead, the willingness to pay for that project is a part of the analysis performed in the assessment of the general creditworthiness of the issuing government. Additionally, the necessity of a security interest being granted in the leased property is not required. A security interest is a common feature in which the governmental obligor grants the lessor, or the trustee, as assignee of the lessor—title or a first lien on the leased property for the life of the bonds. In the event the government obligor chooses to exercise its right of nonappropriation, the lessor, or its assignee, has the right to take possession of the leased asset. For many projects, even if a security interest is granted, it is questionable as to whether the lessor or its assignee can effectively take possession of the projects, as in the case of a prison, a government center, a school or any other facility that serves the basic functions of that government.

Government Obligor's General Creditworthiness

The government obligor's general creditworthiness evaluation is based on traditional GO analysis, and includes factors such as:

- Overall debt structure and burden;
- Economic and tax-base factors;
- Financial flexibility, performance, and position; and
- Administrative and management factors.

If the government obligor were a utility district, university, hospital, or other not-for-profit entity, the relevant rating criteria used in assessing credit quality for those types of entities would be applied.

Appropriation And Term Features

For master leases or service contracts, where numerous operating departments may be involved, a centralized appropriations process helps to ensure the timely payment of obligations.

The following appropriation features are important to the evaluation of the transaction's structure:

- The useful life of the financed property or project matches or exceeds the term of the contract.
- The term of the contract matches the term of the bond issue or certificates of participation, avoiding exposure on renegotiation; if state law prohibits long-term appropriation-backed obligations, term renewal should be automatic.
- The lease or contract payments represent installments toward an equity buildup in the financed property. At the end of the financing term, ownership of the asset should transfer to the government obligor automatically or for a nominal fee.
- The government obligor agrees to request appropriations for lease or contract payments in its annual budget.

The government obligor unconditionally agrees to make rental or purchase option payments as agreed. Such payments should not be subject to counterclaim or offset because of a disagreement over any aspect of the transaction. A clear statement that "notwithstanding any other provisions to the contrary, appropriation-backed obligation rental payments are triple-net not subject to counterclaim or offset" is preferable and should be included in the contract. However, language that indicates that those payments are absolute and unconditional and can't be reduced for any reason is allowable A triple net appropriation-backed obligation is one that designates the government obligor as a tenant being solely responsible for all of the costs relating to the asset being leased. The costs could include any upgrades, utilities, repairs, taxes or insurance requirements.

For California lessees, while the lessee covenants to appropriate lease payments, those payments are subject to abatement in the event the leased property is not available for use. As such, Standard & Poor's requires that, as it does with all abatement and non-date certain appropriation-backed obligations, both a review of the construction risk associated with the project and the presence of business interruption insurance.

Underlying revenues in support of appropriation-backed securities

In certain circumstances, a government may legally pledge specific tax revenues to meet its appropriation-backed obligation payment. If the pledged revenues are not available for any purpose other than those consistent with the appropriation project, such as economic development or a convention center, the appropriation risk is significantly mitigated

and the rating assignment will be determined by the credit characteristics of the pledged revenue source, not the appropriation risk.

Maintenance and insurance

The government obligor should agree to maintain the financed property in good repair and to insure it against loss or damage in an amount at least equal to the purchase option value or replacement cost, whether or not repair and replacement are mandated by the agreement. If the payments are subject to abatement in the event the property is damaged, destroyed, or taken under a provision of eminent domain, the government obligor must maintain business interruption insurance for at least 24 months. Where applicable, special hazard insurance coverage is required unless the financed facility passes Standard & Poor's natural hazard test.

Self-insurance for property damage risks is permitted. Adequate reserve levels must be maintained and reviewed annually by an independent consultant or professional risk manager. Annual notification to the trustee that reserve levels are adequate must be made. Self-insurance is not an acceptable alternative to commercial coverage for earthquake risk when the government obligor's obligation is limited only to self-insurance reserves and does not extend to the municipality's general resources.

Debt-service reserve fund

A debt service reserve equal to maximum semiannual debt service or three months' advanced (and unconditional) funding of debt service, or an equivalent combination of reserves and advance funding, may be beneficial on leases and service contracts that provide for abatement for lost use of property owing to damage or destruction, or to those instruments where late budget passage risk exists. In addition, no debt service reserve is allowable if both lease or service contract payments and debt service payments are not due until three months have elapsed in the government's fiscal year, once again allowing for the possibility of late budget adoption.

Lessor features and bankruptcy risk

Most appropriation-backed obligation transactions rated by Standard & Poor's are between a governmental obligor and a non-profit public benefit corporation, as lessor, which has been established specifically for the purposes of the lease transaction. These lessors, typically, are filers under Chapter 9 of the U.S. bankruptcy code and are considered bankruptcy remote. Alternative arrangements include:

- For lessors not judged to be bankruptcy remote, there must be a sale and absolute assignment by the lessor of lease rental payments to the trustee, thereby ensuring timely payment to the bondholders if the lessor becomes insolvent. The assignment should be accompanied by a legal opinion stating that as a result of the assignment, bankruptcy of the lessor would not cause the lease and lease payments to be considered property of the lessor's estate. The automatic stay provisions of the bankruptcy code should not apply and therefore would not cause an interruption of rental payments to the bond trustee.
- Insolvency-proofing the lessor is an alternative approach. The lessor should be set up as a single-purpose entity (SPE) that is prohibited from engaging in any business—other than owning the rated project—and from incurring additional debt, unless it is rated at least as high as the Standard & Poor's rated lease-secured debt. Furthermore, the SPE may not sell the project except to another entity that meets these criteria unless Standard & Poor's rates the entity's senior debt at least as high as the lease obligation. These provisions should appear in the lessor's partnership agreement or articles of incorporation and in the trust indenture. Please refer to Standard & Poor's criteria on SPEs for more detail

Construction risk

Construction risk is present in virtually all public finance transactions, but it typically introduces credit risk only in those transactions where debt service payment is contingent on project completion and/or acceptance. In those state's where such a risk is present, Standard & Poor's will perform a construction analysis for all issues where completion of the project, that is securing the lease payments, is required prior to the commencement of rental payments supported by appropriated funds. For further clarification refer to Public Finance Criteria: Assessing Construction Risk in Public Finance.

Special considerations for vendor leases

Vendor equipment and developer office leases receive further scrutiny in the rating process because the municipal lessee is not the party primarily responsible for the sale of securities. It is often the vendors and/or developers that have a greater interest in the actual debt financing. Therefore, Standard & Poor's closely assesses the following areas in determining appropriation risk:

- Government support: Are the appropriate high-level governmental officials supportive of the lease project, the lease provisions, and the sale of securities?
- Essentiality: Is the vendor equipment or developer lease essential? Making the case that essentiality is high for developer-owned office leases is also more

difficult because the government usually has no eventual equity interest in the facility. Ownership of the building being leased normally resides with the developer after the government makes all of its lease payments. Therefore, the incentive to make lease payments in later years is not enhanced by the expectation of eventual ownership.

- Triple-net lease: Despite vendor involvement or developer ownership, the lease must be triple-net, without the right of offset.
- Bankruptcy: An absolute assignment of rental payments from the private third-party lessor to the trustee is required.

Nontax-Supported Leases

Higher education leases

Colleges and universities frequently use leases as a means of financing capital improvements and equipment such as computers, telecommunications equipment, and research facilities. Historically, capital leases were the most used form of leasing for institutions of higher education. From a rating perspective, many of these capital leases are no different than other bonded, long-term debt. An institution wishes to finance an academic or research building over a long period of time, but may be subject to state debt restrictions, which prohibit the issuance of GO debt. For public universities, because of these debt limitations, capital leases are often subject to annual renewal or reappropriation of debt service. However, public universities often issue capital leases that are not subject to appropriation. Typically, this instance occurs when a university wishes to involve outside developers, or affiliation foundations.

Capital leases' payment of debt service can be subject to annual appropriation, or it can be a continuing and unconditional obligation without the option of termination. The rating assigned by Standard & Poor's depends on the underlying security; if a lease for a public university is subject to annual appropriation of debt service, the rating analysis follows the criteria established for other municipal entities such as states and local governments. Therefore, in most instances, a lease supported by legally available funds of a university will be rated one notch from the general obligation equivalent rating. There is one caveat, of course, which is that the lease rating is still a function of the underlying nature of the lease pledge and the obligor's general credit quality. If the underlying security on an appropriation lease is not legally available funds, or the broadest possible pledge, such as a general revenue pledge, then Standard & Poor's might notch it further than leases for state and local government entities.

For instance, consider an appropriation lease for a parking system. If the revenues that actually secure the lease are only parking revenues, a fairly narrow revenue stream, the rating would likely be notched lower than that on a general revenue appropriation lease. For a capital lease to be rated on par with a general obligation equivalent rating, it should be continuing and unconditional, not subject to annual renewal or appropriation, and secured by the broadest possible pledge of revenues. Most capital leases for private colleges and universities reflect an unsecured general obligation. Most private college bond ratings also reflect an unsecured general obligation pledge. Unlike health care institutions, which historically have placed a lien on gross revenues, private colleges and universities typically do not. Therefore, a capital lease, which is an unsecured corporate pledge, can be rated on par with other unsecured debt of the institution.

Health care leases

In the not-for-profit health care sector leases are a fairly common means of financing for major equipment, such as radiology machines, telephone systems, and computers. From time to time they are used to lease additional space for physicians' offices, research facilities, or back-office functions. These leases are usually operating leases although capital leases do occur from time to time. Capital leases are rare but are always incorporated in the long-term debt structure of the organization. If a capital lease for a health care system is subject to annual appropriation of debt service, the rating analysis follows the criteria established for other municipal entities, such as states and local governments.

Transportation leases

Generally speaking, leases are not used as a financing vehicle in the transportation sector. In the very rare instance when an airport issues lease bonds, where debt service is subject to appropriation risk, but not abatement risk, the rating analysis follows the criteria established for other municipal entities, such as states and local governments. ■

Federal Leases

Private developers continue to show a strong interest in using the capital markets to finance construction, or refinance existing mortgages by using federal lease payments as security. However, credit quality on these transactions can vary widely depending on the contractual, lease-term, and structural provisions of the lease. Standard & Poor's Ratings Services rates transactions that are backed by lease rental payments from several different U.S. agencies. Although all of these structures are secured by lease rentals paid by the U.S. government, some transactions carry more risk. Reflecting this risk differential, the rating distribution on these issues ranges from 'AAA' to 'BBB', with the preponderance occurring at the 'AA' level.

Most federal lease agreements are not structured with a public debt financing in mind. Each federal lease has different features and needs to be evaluated on a case-by-case basis. Most prominent in many of the federal lease transactions is the risk associated with the involvement of an unrated developer as lessor. To mitigate the developer risk, Standard & Poor's requires that the lessor be a single-purpose corporation or limited partnership (SPE) with restrictions on future indebtedness and its operations limited to the leased property. Please refer to Standard & Poor's criteria on SPEs for more detail. In addition, Standard & Poor's will require a non-consolidation opinion between the SPE and its principals. However, significant developer risk exists with the construction and operation of the facility. Four key areas that should be carefully evaluated are:

- Appropriation risk;
- Structural risks;
- Cash flow risks; and
- Construction risk.

As with municipal leases where the lease extend for the full term of the bonds, the most important factor in determining credit quality is the government's obligation to make lease payments subject to the government's access to the facility, as well as the lessor's successful performance of all of its obligations under the lease. This is defined as the appropriation risk. Certain government leases do not carry the appropriation risk in that the government's obligation is absolute and unconditional, subject to the terms of the lease. If this is the case, an opinion will be required from the agency's general counsel's office stating that the lease rental payments are general obligations of the U.S. government, backed by its full faith and credit. As long as the construction, structural and cash flow risks associated with the contract have been full mitigated, such obligations will carry a rating of AAA.

There are two other types of appropriation risk that federal leases carry. In some instances, the obligation to make lease payments is subject to Congress making an appropriation to the agency for a specific function, such as military housing. Under this scenario, the military department is obligated to make the lease payment if Congress appropriates any funds to the agency for housing military personnel. The only way the military department would not be obligated to pay is if Congress appropriated the funds for military housing and included specific language stating that the specific lease or class of leases were not to be paid. The essentiality of the function to the government is important.

The second type of appropriation risk is that of the congressional line item. This type of appropriation is more visible and would undergo a very stringent analysis of essentiality. Risks associated with the congressional line item appropriation involve not only the funding of specific governmental programs but also the importance of a single site to the delivery of services provided by the program. Since demographics and cost structures change over time, it could have an impact on where and how the government wants to provide services.

Structural Risk

The lease structure governs the environment under which the government's lease payments are made. There are four basic elements that could have an impact on credit quality:

- The match of the lease-term to the term of the debt obligation;
- Lessor obligations under the lease;
- Rent off-set rights by the government; and
- The government's termination rights under the lease.

Historically, the term of a federal lease has matched the term of the debt obligation. However, this has recently become the exception rather than the norm due to increased federal budgetary pres-

sure. A securitization can receive an investment-grade rating even if the term of the lease is not equal to the debt maturity. Some federal leases are structured with a limited term, but give the government the option of renewing the lease one or more times during a fixed period. Developers have securitized the government's lease payments over the entire period rather than for the current lease-term. However, there is a risk that the government will not exercise its option to renew the lease if circumstances change, such as finding a lower-cost facility, or a program is not renewed. In these instances, the essentiality of the leased asset, and any factors present that may mitigate the renewal risk, will be the key factors in determining whether the securitization receives an investment-grade rating. A real estate analysis risk assessment may also be performed. (See "Mitigating the Renewal Risk" section)

In general, rated municipal leases are triple net with the government responsible for maintenance, taxes, and utilities. However, most federal leases do not carry this feature and the lessor can be responsible for one or all of these obligations. Federal lease payments are structured in one of two ways, with each based on the amount of space leased—either the government pays a single rent payment that takes care of both debt service and operations, or lease payments are bifurcated into two separate streams. These two rent streams are base rental payments, typically used to pay debt service, and operations and maintenance rent.

If the lessor defaults on his obligations under the lease, the government's remedies can range from rental offset to termination of the lease. The cash flow analysis plays an important part in evaluating this risk. However, if the government has the right of termination, it could have severe rating implications. Strong cash flows, coupled with a sufficient cure period, could partially mitigate this risk, given that the lessor will have an incentive to operate and maintain the facility properly. When the government's rights for lessor non-performance are limited to rent offset, credit quality is also severely impaired if the offset rights could affect base rental payments—the portion of the lease rental payment used for debt service. If the offset rights only affect the operating rent, there are two scenarios that could enable the transaction to achieve an investment grade:

- The government has the right to offset operating rents and perform the obligation itself; or
- The government has the right to offset operating rents but cash flow coverage is deemed to be sufficiently strong enough to mitigate risk.

Some federal leases will contain clauses that allow the government to vacate portions of the leased space and offset rent proportionately. Whether the government will exercise its right to vacate is speculative and, as such, would make any transaction that contained the clause speculative.

Another risk prominent in federal leases is that of damage and destruction. The government usually will have the right to abate rents during periods of nonoccupancy. In some cases, although not all, the government may have the right to terminate the lease. To achieve an investment grade rating, the lease must contain several features that minimize the risks associated with damage and destruction:

- The lease must require that the government gives the lessor ample time to repair or replace the facility;
- The government will continue to occupy and pay rent on the useable portion of the facility; and
- The government will resume the entire contracted rent payments when restoration is complete.

To mitigate the lessor's liability and costs associated with damage and destruction, Standard & Poor's requires the lessor to have rental interruption insurance for a period in excess of the time it would take to rebuild the facility, as well as casualty insurance at replacement value or not less than the par amount of the indebtedness outstanding. The insurance provider must carry a rating on its claims-paying ability that is no less than one category below the rating on the transaction and, at minimum, is investment grade. In addition, Standard & Poor's requires at a minimum a debt service reserve fund equivalent to at least two months' base rent payment for the insurance claim process to finalize.

Termination rights are provided for in most federal leases. Termination with respect to damage or destruction and non-performance of lessor obligations may be mitigated by either insurance or other restrictions on the government or strong cash flows, respectively. Some leases contain a termination-for-convenience clause that gives the government the right to end the lease and its obligations at any time. This risk can be mitigated by the determination that the essentiality of the project is strong or the government has stated that it will pay off any outstanding indebtedness if it exercises its rights under the convenience clause. This allows the developer to achieve an investment-grade rating on the transaction.

Cash Flow Risk

The cash-flow analysis evaluates the lessor's ability to fulfill all of its financial obligations under the lease and make timely payments to the bondholders. Given that each federal lease transaction has different characteristics with respect to the lessor's obligations and the government's remedies, Standard & Poor's has not established a coverage test for its cash flow analysis. In determining cash-flow adequacy, it

is important to make sure that government lease payments will match debt service due dates. Most federal leases are structured with monthly lease payments made in arrears. Most federal leases are also structured with a base rent component and an operating rent component. To achieve an investment grade rating, base lease payments will need to equal or exceed debt service requirements. If the lessor has operating or maintenance responsibilities, Standard & Poor's evaluates the operating rents under very conservative expenditure estimates with reliance on historical costs for similar buildings in the area. In addition, an operating reserve equivalent to a minimum of one month's rent is required.

Standard & Poor's also evaluates the ability of the lessor to make the required capital repairs on the facility during the life of the bonds. To do this, an independent engineer's report is required. If annual cash flows are not sufficient to make the required capital repairs in each year, Standard & Poor's will require a capital reserve fund that can either be funded upfront or from excess cash flow over the life of the bonds.

Construction Risk

Construction risk occurs when the government's lease rental payment is dependent on the completion of the project to its specification. If construction risk is present, Standard & Poor's requires a construction risk analysis be performed.

Payment and performance bonds alone, given the historical lack of timeliness and sufficiency of such payouts, are insufficient to fully mitigate construction risk. For further clarification refer to Public Finance Criteria: Assessing Construction Risk in Public Finance.

Public Private Partnerships

Standard & Poor's has rated transactions where the bonds are secured by a pledge of the rent payments under a lease between the maintenance and operations (M&O) contractor and the developer and not between the federal government and the developer. The credit risks associated with this type of transaction include:

- The private nature of the projects being financed;
- The initial term of the lease not extending to the life of the bonds; and
- The lack of a marketability of the project.

To achieve rating separation from the private developer and an investment grade rating for this type of structure the following elements must be present:

Strong legal structure

- The term of the lease has sufficient renewal options to extend to the life of the bonds;
- There must be an executed contract between the federal government and the M&O contractor to manage the facility which may or may not extend to the term of the lease;

Mitigating The Renewal Risk

The following factors, if present, can mitigate lease renewal risk.

Strong project essentiality

The project facility under consideration should be extremely essential to the operations of the issuing federal governmental agency.

Significant renewal notification

There should be a significant renewal notification period if the federal agency is not going to renew the lease.

Location

There should be certain characteristics of the leased facility that would be difficult to duplicate, thus enhancing the likelihood of lease renewal. An example would be the location of the project facility. If there were limited availability of sites sufficient to meet the federal agency's needs, thus making it unlikely that adequate space would be available to the agency for any future relocation, it would enhance the likelihood of renewal.

Renewal rates are likely to be competitive

An analysis of the cost of relocation should be performed to ensure that if the agency were to seek relocation at the renewal option date, and a similar relocation cost were to be required and amortized over a 20-year lease, the projected rental amount would be above their present renewal rate.

Other GSA options

Even if the government agency desires not to renew the lease, the GSA has the option to renew and replace the agency with another federal government tenant(s).

- The financed facilities should be owned by a single-purpose, bankruptcy-remote entity. The facilities may than be leased back to the private operator.
- The obligation to make debt service payment on bonds sold to finance these projects should be a special obligation of the issuing entity and payable solely from the revenues of the trust estate;
- The contract with the federal government, along with the revenues associated with those contracts, should be assigned to the single-purpose, bankruptcy-remote entity and, in turn, pledged to a third-party collateral agent as part of the collateral security for the bonds;
- Confirmation that the contract revenues supporting the transactions would not be property of the bankruptcy estate of the private operator or subject to the automatic stay provisions were the private operator has to file for bankruptcy;
- Payments from the contract revenues should, in the first instance, be used to pay debt service on the bonds; second, to make any required property tax or insurance premiums; third, to replenish all required reserve accounts and, last, to flow back to the operator for prison facility operations; and
- Confirmation that the operator can be terminated and replaced in the event of a default by the operator under any of the contracts with the federal government.

Moreover, the single-purpose, bankruptcy-remote issuer should be owned by an independent not-for-profit-corporation having no affiliation with the private prison owner, preferably a not-for-profit that has as a charter commitment to aid government in the providing of essential services.

Strong project essentiality

The project facility should be of an essential nature meeting the stated mission of the contracting federal department.

Strong lease revenue stream

The lease payments should originate from rental reimbursement payments due the M&O contractor from the federal government under the M&O contract. The contracting federal department, as part of its consent to and acceptance of the lease, must acknowledge that the rent under the lease, together with other operating expenses are allowable reimbursable expenses under the M&O contract.

Rent payments

Rent payments should be paid directly to the Trustee by the contracting federal department thru the Federal Assignment of Claims Act.

Requirement to renew

If the M&O contract does not extend for the term of the lease, the M&O contractor must provide that as long as its M&O contract with the contracting federal department remains in force and effect, the M&O contractor will exercise each of the extension options, which should match the extension options of the lease.

Operator substitution

If the private operator fails to meet the requirements of the M&O contract with the contracting federal department, that contract may be terminated. The transaction should be able to rely on the government department or a number of other private operators being available to assume the role of operator. The M&O contractor should agree under the lease that any replacement operator responsible for the management of the facility enters into a replacement lease for the property with the same terms and conditions as set forth in the lease. As such, the payments from the contracting federal department in support of the debt service payments on the bonds will continue regardless of who the M&O contractor is.

Strong monitoring of the facility

Details surrounding the procedures and requirements of the facilities will also be evaluated. The contracting government department should regularly monitor the facilities and have measures in place that will rapidly address any contract violations. ■

Moral Obligation Bonds

Moral obligation debt differs from other debt obligations in that there is no legal requirement to make debt-service payments. A moral obligation pledge represents a promise by a government obligor to seek future appropriations for debt service payments, typically in order to make up deficits in a reserve fund should it fall below its required level. Usually a government official will request an appropriation and the legislative body may grant it.

In practice, moral obligation debt is customarily issued by the following municipal entities:

- State governments wishing to enhance the creditworthiness of their agencies' revenue indebtedness;
- State bond banks that lend bond money to local municipal subdivisions for infrastructure projects; and
- Local units for financing projects, ranging from downtown redevelopment, to job training, to public housing.

Standard & Poor's Ratings Services criteria for moral obligation debt are strict, and all requirements must be met to achieve a rating based on the obligor. Moral obligation bonds are typically rated one full category below an issuer's GO bond rating.

Rating Methodology

In rating any moral obligation bonds, Standard & Poor's expects a standard structure to be in place:

- A reserve fund, funded at maximum annual debt service at the time of issue, either by proceeds or other available moneys;
- Language in the resolution (local) or statutes (state) that outlines the duty and process of monitoring this fund and notifying an appropriate official in the event the money in the reserve fund falls below the required level. Such notification must be made in a timely manner as to meet the budgetary requirements of that government;
- A requirement that the appropriate budgetary official request an appropriation to return the reserve fund to its maximum debt-service required level whenever there is a draw on that fund; and
- Language that provides the appropriate body of elected officials the option to make such an appropriation.

In assigning a rating, Standard & Poor's not only will verify that this structure is in place, but will evaluate the essentiality of the financing's purpose to the issuer. The legislative history will be evaluated—how important it is to ongoing operations, and how motivated the issuer would be to live up to its moral obligation, even if it comes under political pressure to allocate scarce resources in other ways. The government must also:

- Represent that it fully intends to satisfy future moral obligation payments; and
- Provide evidence of legislation authorizing the project or program being financed, also detailing the requirements with respect to deficiency payments.

Most bond issues supported by a moral obligation pledge are structured to be fixed rate instruments with a debt service reserve sized to maximum annual debt service. In some instances, bonds have been issued in a variable rate mode, which suggests some unique credit concerns and issues. Since variable rate debt payments may fluctuate over time given changing interest rates, the appropriate sizing of the debt service reserve is an issue.

In order for Standard & Poor's to base the rating of such debt on the moral obligation pledge of the government obligor, one solution is to set the debt service reserve at the maximum allowable interest rate or cap rate under the transaction. Such a solution would eliminate the concern that in a rising interest rate environment the debt service reserve would not be sufficient to cover a full year of debt service. Another method of resolving this issue is to increase the times that a request to replenish a debt service reserve that has been drawn upon is made. This would require the ability of the government obligor's appropriate budgetary official to seek interim appropriations from the elected officials. Sufficient time must be present for those elected officials to meet and react to such a request. The timing of these events must be written into the appropriate documents supporting the bonds.

In general, moral obligation bonds are included in an issuer's debt ratio if the underlying non-moral obligation security stream is not self-supporting on its own. Similar to appropriation-backed debt, a moral obligation bond default could result in a downgrade of a state or local government's GO rat-

ing. If a properly structured moral obligation defaulted, despite clear original legislative support, the state's willingness to pay on its other debt would need to be examined.

Under certain circumstances moral obligation debt may warrant a rating above the traditional full category, providing there are other security features present. These additional security features include but are not limited to the following:

- Additional excess assets;
- Strong historical track record of the underlying assets;
- A large pool of assets providing cross collateralization; and
- Strong community support/essentiality for the assets.

Weaker moral obligation bonds may fall further below the issuer's GO rating, potentially even into the non-investment-grade rating categories, usually as a result of significant project risks, lack of clear governmental statement of intent, or structural concerns.

Standard & Poor's has noted two types of moral obligation bonds. In the first (and most common) case, moral obligation bonds are issued by governmental or special purpose entities on behalf of governmental units or authorities. Taxes or fees that are legislatively or administratively mandated support the repayment of such bonds. Less common are instances where moral obligation bonds are issued to support loans made to private companies. Repayment of such "private purpose" moral obligation bonds is based on revenues generated by such private companies. This latter type of moral obligation bond can raise rating concerns.

It is conceivable that in the event of a bankruptcy by the company for whom the moral obligation issuer has essentially served as a conduit, any debt service reserves pledged as security for the bonds might be viewed as "property of the estate" of that company, and not be immediately available to pay debt service on the bonds. To mitigate this risk, Standard & Poor's will request comfort that all debt service reserve funds or other credit support for the bonds will not be treated as "property of the estate" of the company and will not be stayed from being applied to debt service payments, if otherwise needed. ■

Water And Sewer Ratings

Standard & Poor's Ratings Services rates water-sewer revenue debt issued by stand-alone authorities or special districts whose sole mission is providing water-sewer services, and debt issued by local governments that provide these services, among others.

In cases where a local government pledges additional security such as a full faith and credit GO pledge or a lien on sales taxes; the rating will reflect the stronger of the two individual security pledges. An issuer's GO bond rating and the rating based on a water-sewer revenue pledge will usually be close given a similar if not identical service area economy, and possibly even similar management and governance. The degree to which one rating is higher than the other will depend on the specific characteristics of the two credits.

While the full faith and credit pledge may be perceived to be the broadest possible pledge, issuers' GO ratings are often constrained by general fund operating and political pressures that outweigh similar pressures on the enterprise side. To the extent that the utility service area is substantially larger than the taxing area covered by the GO pledge, the utility may also benefit from a deeper and more diverse economic base. Even when an issuer's GO rating is lowered significantly, its utility rating may remain stable if the unique aspects of the utility warrant it.

Of course an issuer's GO rating is just as likely to be as high or higher than its utility rating. To the extent that a utility faces substantial capital pressures, resistance to normal rate increases, high leveraged positions, lower debt service coverage margins, or higher customer concentration relative to the tax base, it would be normal to see the GO rating higher than the utility rating.

Areas reviewed to reach a rating determination on water-sewer revenue bonds include:

- Economic considerations;
- Financial data/capital improvement plan;
- Rate criteria;
- Operational characteristics;
- Management; and
- Legal provisions.

Economic Considerations

Standard & Poor's regards the service area economy of a utility as a focal point in the evaluation of credit risk. The economic analysis is used to measure the stability of a utility's customer base, the potential need for growth-related capital spending, and the affordability of rates. Income trends are examined not only in absolute figures, but also compared with local, state, and national averages. Income indicators reflect a service area's capacity to support current and future rates. Other measures of wealth and economic vitality may include housing values, property tax base growth trends, and retail sales activity. In addition to measuring wealth, these components help to demonstrate the prospects for growth.

The job base of the utility service area can support a higher rating if it is diverse and demonstrates little susceptibility to cyclical fluctuations in any single industry or sector. Standard & Poor's evaluates a list of the service area's leading employers and assesses their level of commitment to the local economy via their past, present, and prospective levels of employment. Unstable employment patterns can shrink a system's revenue stream and lead to increased rate sensitivity. Seasonal employment usually brings more volatile treatment demands and revenue patterns.

Other essential statistics include population, housing starts, building permits, occupancy rates, and system connections. Trends in these variables are examined to assess the potential for future customer growth, and how this growth will affect the revenue base, the use of system capacity, and additional capital needs.

Financial Data

Financial analysis focuses first on past performance to determine the utility's stability and consistency. Standard & Poor's evaluates three or more years of historical fiscal results and compares them with planning and budgeting forecasts and policies. These policies are viewed as successful when management achieves a stable fiscal performance through all phases of economic and weather-related cycles.

Individual examination is given to audited financial results, including debt factors, accounts receivable, liquidity, and net revenues available for debt service. Debt factors are examined for overall debt levels and historical and projected debt service coverage. Debt service coverage tests not only include debt service on the utility's own revenue bond debt plus any off-balance sheet debt obligations associated with unconditional contractual obligations, and any GO debt issued on behalf of the utility and paid from utility revenues. Standard & Poor's focus is the adequacy of a cushion to ensure uninterrupted payment.

Credit judgment of debt service coverage levels incorporates economic and operational factors. A debt service coverage ratio shows the multiple of net revenues to debt service, with higher coverage generally indicating an affordable debt burden. As a measure of debt capacity, the ratio is effective in differentiating those systems that have a revenue stream that comfortably covers debt obligations versus those systems that do not. Systems that have a very low coverage ratio may indeed be struggling to meet rising operations and maintenance expenses, or be experiencing difficulty raising customer rates, or simply have a high level of indebtedness. Lower coverage is generally more acceptable in systems with lower risk; generally those with a diverse customer base, low revenue and expense volatility, and a well-maintained infrastructure.

Another consideration in assessing debt service coverage ratios is the structure of a utility's debt; while back-loaded debt may reduce the short-term debt burden and make more debt seem affordable in the near-term, it increases overall debt service costs. In cases where a system is counting on customer growth to occur in order to help pay for rising debt levels through either connection fee revenue or rates, this may be considered a negative credit factor since future growth trends are never assured.

Revenues and net income levels are examined to ensure that all costs, including annual renewals and replacements, are recovered through adequate rates. This means that two coverage ratios will be determined, as they are applicable:

- Annual debt service coverage—simply, the ratio of revenues available for debt service to the actual principal, interest and other requirements currently due within that fiscal year.
  Standard & Poor's uses net revenues, rather than gross revenues, to calculate the debt service coverage ratio.
- Fixed charge coverage—water and sewer systems have different levels of financial and operational risk. More traditional systems may have their own water supply, treatment plants, etc. Increasingly common is some form of regional service from a wholesale provider or joint action agency. Obligations to such regional providers are typically treated as operating expenses of the retail system and thus do not appear on the balance sheet as long-term debt of that retail system. In such cases, Standard & Poor's calculates an adjusted debt service coverage ratio that treats these off-balance sheet obligations as debt-like, since they are still recurring, or "fixed," long-term obligations. This allows for more logical comparison to utilities with on-balance sheet debt.

Given the recent emphasis on recognition and funding of long-term liabilities for both pension (GASB Statement 27) and other post-employment benefits (GASB Statement 45), effects on debt service coverage would be dependent upon how the funding of the liability is handled. This ultimately will depend on the flow of funds as to whether or not revenues available for debt service are affected.

Standard & Poor's scrutiny also covers the utility's liquidity position. Accounts receivable to operating income is reviewed to gain an understanding of the collections environment. A cash flow history and forecast may be required if receivables consistently total more than 15% of operating revenues, assuming a monthly collections cycle. Another measure of liquidity, days' cash on hand compares available liquidity with annual operating expenses and other system needs to determine sufficiency.

The level of short-term debt, including variable-rate bonds, relative to total debt also is assessed to determine sensitivity to changes in interest rates or an inability to remarket short-term paper. Derivatives may hedge this exposure, but they may also introduce additional risks. As far as long-term debt, the debt to plant ratio is considered, as a measure of a utility system's leverage. This ratio, however, must be considered in the context of a utility's debt history and future capital needs. While a low debt to plant ratio is generally considered a positive credit factor, it would not be a strength in cases where the low ratio is the result of under-investment in physical assets. Higher debt to plant ratios, moreover, may not be considered a credit weakness if infrastructure is in good condition, and capital needs are therefore minimal. Systems that engage in asset-liability management programs intended to quantify optimal investment levels in infrastructure are generally seen as being able to better manage debt levels. Management practices, such as a defined schedule of capital spending from reserves and debt issues, are often as important as any particular ratio.

Lastly, Standard & Poor's studies the utility's capital improvement plan to determine what affect it will have on system operations, rates, and finances. The overall size of a plan is not necessarily the most important fact in reviewing CIPs. It is whether the plan addresses the utility's needs, and if it is manageable and affordable given budgetary realities.

Large water and sewer systems are usually better positioned than smaller systems to implement large, long-term capital programs because they can spread the costs over a broader, more diverse customer base. Their economies of scale, greater flexibility to incur rate increases, generally solid financial performance and long-term financial and operational planning allow the implementation of such capital improvement programs (CIPs) without causing a crushing blow to ratepayers.

A utility's capital program will necessarily influence rates for service, and rates will influence the utility's financial health, including debt service coverage, liquidity, cash flow, and its overall degree of indebtedness. Long-term capital plans that have already associated project costs with funding sources allow for estimated impacts to rates, operating costs and overall financial condition to be incorporated into the analysis.

Water And Sewer Rates

In analyzing the rates charged to customers, Standard & Poor's focuses on a number of important factors: rates compared with neighboring communities and/or similar systems; rates in relation to the service area's economic wealth and income levels; and the rate-setting process.

The competitiveness of rates compared with neighboring communities can be an important aspect of users' willingness to accept further rate adjustments. Also, high rates can impede economic development, particularly, if nearby areas with comparable levels of service charge lower utility fees. Standard & Poor's also examines the affordability of rates in the context of local wealth and income indicators.

Standard & Poor's closely examines the rate-setting process. The number of required approvals, the ability to recover current and future costs, the length of time necessary to implement adjustments, and the track record of the approving entity are important credit factors.

Operational Characteristics

Municipal water and wastewater utility systems face the challenge of meeting state and federal environmental regulations, as established by the Safe Drinking Water Act and the Clean Water Act, and the need to implement capital improvement programs designed to satisfy future needs. A system's ability to comply with these demands without diminishing financial integrity, or rate affordability and competitiveness, is a critical rating factor.

Standard & Poor's analysis of operations takes into account the following:

- Customer profile and usage trends;
- Compliance with environmental regulations; and
- The adequacy of system capacity.

Customer profile

Customer data are disaggregated into residential, commercial, and industrial classes to better discern the relative importance of one type of user to the system. Standard & Poor's studies customer trends to determine the sensitivity of the system to swings in the economic cycles. In addition, a historical usage trend when coupled with demographic trends enables Standard & Poor's to assess the potential future capital needs of a utility. Standard & Poor's also examines the customer base to identify major customers and the percentage of revenues that they contribute. Care is taken to assess any one customer responsible for a large share of revenues to determine that customer's stability, commitment to the service area, and contribution to the bottom line. Concerns regarding concentration can be somewhat mitigated if the system has long term arrangements with large users that ensure revenue stability.

Regulations

Prudent management must anticipate the potential impacts and financial burdens on their systems of future state and federal environmental regulations. Failure to comply with permit requirements could lead to a ban on additional water and/or sewer connections, thereby obstructing a community's economic growth, and result in harsh fines. The credit quality of a municipal system reflects Standard & Poor's assessment of management's ability to implement necessary capital improvement programs to satisfy new and pending regulations while avoiding "rate shock." One index of planning capability is the status of plant and line maintenance; if a system is properly maintained, it will reduce the need for major repairs. Some measures are water-line loss ratios, inflow-infiltration studies, and the presence or absence of an ongoing maintenance program. To the extent that compliance issues exist, the dialogue and relationship with state and federal regulatory bodies will be examined.

System capacity

Standard & Poor's studies a water and sewer systems' existing infrastructure. The utility's operational capacity, in terms of the sizing of it's treatment plants and its collection and distribution systems is analyzed to determine if additional capacity will be needed and if the utility has planned

for necessary expansions. Standard & Poor's analyzes the following factors for water systems:

- The water system's source and available supply of dependable water;
- If that supply affected by water rights, aquifer depletion and/or saltwater intrusion; and
- If there are and long term commitments for wholesale delivery.

Standard & Poor's will assesses the aforementioned factors in the context of service-area growth and the cost of providing additional water to sustain growth.

The available safe yield of water and the capacity of pumping systems and treatment plants are compared with the aggregate customer average and peak daily demand. The amount of storage is assessed as an important component in meeting peak demand and providing reliability. Again, Standard & Poor's evaluates these figures in conjunction with an assessment of demographic and use trends. Significant excess capacity may indicate overbuilding and heavy carrying costs for the current user base. Alternatively, the need for capital spending is apparent if a system experiences, or is forecast to experience, a shortfall in supply or treatment and distribution capacity.

Standard & Poor's applies similar criteria to evaluating wastewater systems: peak and average customer flows as compared with the collection and treatment plant capacity. Additional questions are asked of managers of sewer facilities, such as the method for disposing of sludge and other issues related to effluent discharge.

Management

Standard & Poor's assesses management's ability to implement measures on a timely basis to proactively shape a utility's financial and operating condition, as opposed to reacting to external events. While this aspect of a credit evaluation is somewhat subjective, standard yardsticks are available to measure management's performance in setting and achieving stipulated objectives. To determine management's control, Standard & Poor's looks at the quality of planning techniques, such as demographic and rate studies, financial forecasts, and capital improvement programs. The extent to which these documents are factored into current budgets and long-term plans also is evaluated. To determine the effectiveness of management's actions, the plans are examined against the actual results.

In assessing management, Standard & Poor's will analyze the environment in which decisions affecting the utility occur. Generally, higher rated entities will, over time, develop "best practices" that not only serve as guiding rules of thumb (or actual codified policies) to ensure continuity, but also that there is logical rhyme and reason to those rules. While an absence of decision-making organizational guidelines will not necessarily constrain the rating, reactive or inactive implementation of financial and operating measures considered crucial to performance will be viewed negatively.

To assess the management environment, Standard & Poor's will examine the following:

- Asset management and long-term capital planning—with many utilities this is the most important piece to the puzzle. Larger systems may have more sophisticated asset inventory systems that smaller utilities may not be able to afford. However, all well-managed systems should have a basic idea of the useful life of at least the key components to their infrastructure, as well as the financial and operational costs associated with maintenance of efforts, staying in compliance with relevant regulatory bodies and potential implications from non-action. Incorporating this knowledge into a long-term capital improvement plan helps a utility determine when rate increases will be necessary and plan for them in advance.
- Long-term financial planning—recurring costs such as personnel and debt service (on-or off-balance sheet) are stable and predictable. Other large expenses such as fuel, electricity and chemicals may vary greatly from year to year. Changes in operations, such as newly constructed pumping facilities or expanded treatment plants may also significantly affect the operating and maintenance budget. Pro forma financial projections three to five years into the future allow Standard & Poor's to assess how such changes will impact the utility. A crucial component to this analysis will be not only whether or not such a pro forma document exists, but also the underlying revenue and expense assumptions supporting the document.
- Rate-setting practices-Standard & Poor's pays particular attention to the utility administrators' capacity to implement rate increases and capital improvement programs independently. Autonomy in rate setting is viewed as a decidedly positive factor, given that it insulates the utility from exposure to political interference that might deter a timely and adequate adjustment. If favorable action by a public board, city council, or state public service commission is required, Standard & Poor's weighs management's ability to work with these entities to attain approval of its requests. Management's record of raising rates consistently and promptly is

also reviewed. Holding rate levels constant for multiple years does not benefit ratepayers if inflationary increases in operating costs and other expense pressures eventually compound to force a rate increase of such magnitude that ratepayers have extreme difficulty in budgeting for this expense. Such patterns of irregular rate increases increase the risk that ratepayers will pressure ratemakers to resist needed changes, thus increasing credit risk to bondholders. This is not to say that minimizing any negative economic development consequences of rate increases, and pursuit of lower rates from further efficiencies should be ignored; they should be goals that are judged from a long-term perspective rather than exclusive targets to be met in the current year regardless of long-term consequences. When managed from a long-term perspective, sound policies usually benefit both bondholders and ratepayers, and the interests of these two constituencies are more consistently aligned.

- Investment and liquidity policies—seasonal cash flow needs, capital requirements, risk management and emergencies are among the many reasons a utility will keep certain levels of cash on hand. Standard & Poor's also gives credit to alternative liquidity in the form of designated—but ultimately lawfully available—cash in the form of rate stabilization, depreciation, or other funds. Utilities tend to have larger cash reserves than general governments, in which case investment income is often material and significant. This includes not only unrestricted cash and designated funds, but also various different restricted funds such as debt service reserves and unused bond proceeds. Standard & Poor's will ask if the organization has established policies pertaining to investments, such as investment objectives, maturities, portfolio diversification, etc. Furthermore, reporting and monitoring mechanisms and frequency will also be examined.
- Debt management policies—while it is assumed that investment grade utilities will not fund operating and maintenance requirements with the use of long-term debt, there are many ways to fund identified capital needs. Stronger decision-making environments are those in which policies exist that have correlation to between the debt and the asset type, the asset's useful life, and debt levels that are appropriate to the situation. For utilities in which the use of derivatives (such as an interest rate swap) is permitted, Standard & Poor's will ask for a copy of the formal swap management plan as adopted.

Legal Provisions

As defined in a bond indenture or resolution, the legal provisions make clear the issuer's responsibilities and the bondholder's recourse in the event of the issuer's noncompliance. The role of legal provisions in Standard & Poor's credit analyses of municipal water and sewer utilities has evolved over time as the bond market's experience with water-sewer revenue debt has increased and legal covenants have become more varied. As these trends have evolved, legal covenants have become more liberal, often without a resulting downgrade in the issuer's credit rating.

Variables such as service area stability, operational capacity, financial and operational stability, and transparent and effective rate setting practices have proven to be strong indicators of water-sewer credit quality, often more so than the particular legal covenants constraining the utility. However, utilities cannot strip bondholders of traditional protections and expect to preserve ratings unless they show that their ongoing cash flows, balance sheets, and operational strategies will support credit quality, in other words, ongoing operational results must consistently outperform legal covenant requirements.

Legal provisions are analyzed in conjunction with assessments of a utility's customer base, rate competitiveness, operational flexibility, management, financial strength, and regulatory pressures. When these assessments indicate that the utility's expected ongoing performance will be well in excess of the minimal levels guaranteed by the legal covenants, the degree of strength granted by these protections becomes much less relevant to the rating. In contrast, when future performance is expected to be closer to levels guaranteed by the covenants, the legal protections themselves become important to the assumptions of continued stability at that level. In such cases, legal covenants can play an important role in the rating.

Standard & Poor's considers each legal provision separately and examines the conditions under which different variations do or do not result in different credit ratings. It is important to remember that while weaker legal covenants may not have a rating impact when performance is strong, if credit quality starts to deteriorate, it is likely that a lack of strong covenants will increase the potential and degree of a downgrade.

Security

Standard & Poor's does not distinguish between a gross and a net revenue pledge. It is Standard &

Poor's view that operation and maintenance expenses must be paid in order for a system to be a viable, ongoing concern that will generate revenues for debt service, whether pledged on a net or gross-lien basis. Standard & Poor's will review the security pledge to ensure that ongoing revenues are available for debt service payments. If the pledge allows prior period revenues through the use of a rate stabilization fund then it is better that those revenues provide the revenue cushion stated in the rate covenant and that revenues derived from the operation of the utility alone provide at least one times annual debt service coverage. If an issuer intends to use tap fees, system development fees, or connection fees as part of the pledged revenue stream it is important that the system has at least sufficient coverage from operating revenues alone. If operating revenues are insufficient it may be necessary to demonstrate that operating revenues are intended to cover annual debt service within a few years.

While the typical senior-lien pledge of an enterprise's net revenues is considered to be the most secure, junior-lien debt need not always be rated below senior obligations. In cases where the senior lien has been legally closed and the creditworthiness of the issuer supports the higher rating, an argument can be made to rate both the senior lien and subordinate lien at the same level. Also, if an issuer has a proportionately smaller amount of senior lien debt versus subordinate lien debt and if the general creditworthiness of the issuer warrants it then the two liens can be rated on par.

Finally, in some cases the general creditworthiness of the issuer is strong enough to allow the senior and subordinate debt to be rated on par. Many issuers have set internal policies to operate the water and/or sewer systems at coverage levels well above the rate covenant to generate sufficient revenues to fund a large portion of the capital improvement plan. When an issuer consistently operates in excess of the legal rate covenants of both the senior and subordinate debt, this could justify the support of equivalent ratings.

Rate covenants

The rate covenant, actual coverage, and the ability to raise rates are factors that provide credit strength to water and sewer utility revenue bonds. With most utility financing, the rate covenant requires management to set rates for service that will generate net revenues sufficient to provide a defined minimum level of debt service coverage—typically 1.10x to 1.20x. While this range is the norm, rate covenants as low as 1x are acceptable in situations with limited operating risk. While a 1x (sufficiency) rate covenant would be acceptable, Standard & Poor's expects to see higher levels of coverage in most years. The covenanted level is the minimum level and is considered the exception rather than the rule over the long term.

Again, the definition of revenues providing the coverage is as important as the covenanted level of required coverage. Generally, recurring revenues from operations should be sufficient to cover debt service, and only such revenues should be defined as "net revenues". Cash balances and nonoperating or nonrecurring revenues such as developer fees, system development charges, and connection fees are sometimes included, but cause additional concerns. Often, these resources are available for use only once, and depletion of those resources can put significant pressure on rates. Although "rolling coverage" is becoming increasingly common, operating revenues should typically cover operating costs and Standard & Poor's will analyze coverage calculations both with and without non-operating revenues.

Additional bonds tests

The additional bonds test ensures existing bondholders that a minimum level of coverage has been met upon the issuance of additional parity debt. Standard & Poor's focuses on whether the issuer's right to offer senior or parity bonds at a later time could result in a dilution of coverage. A conservative additional bonds test requires that net revenues for a prior fiscal period (the previous fiscal year or 12 consecutive months) equal at least 125% of the maximum annual debt service requirement, taking into account the issuance of proposed bonds. A test that measures historical earnings is stronger because it is less speculative than those based on revenue projections. Often, projected tests rely on assumptions that may not be realized, such as future rate increases or revenues generated by new facilities. Adjustments to historical net revenues to reflect new customers or rate increases, which have been implemented prior to the proposed bond issuance, are common and acceptable. While a conservative ABT helps mitigate future bondholder risk, Standard & Poor's also takes into account the scope of the capital program and related risks and impact on a system's financial profile.

Flow of funds—transfers out

The flow of funds specifies the order and timing in which system revenues are used to meet the obligations created by the indenture. Of critical importance to the rating is the lien position of debt service payments in relation to other system obligations outside of ordinary operations and maintenance costs. Also, Standard & Poor's looks for established reserve funds, such as debt service reserve and renewal and replacement accounts to be funded in turn, to provide additional cushion for

debt service payments and system maintenance. Frequency of payments to the debt service fund range from monthly to semiannual transfers. From a financial perspective, monthly deposits are preferred, since this approach allows a smooth buildup of the debt service fund and an early indication of any shortfalls.

The flow of funds also enumerates the issuer's ability to transfer surplus funds out of the system. A reliance on transfers from the utility to the general fund adds to a system's revenue requirements that can result in additional rate pressures for customers. While the ability to retain all surplus funds within a system is certainly a plus, transfers to another fund are not necessarily a negative factor. A well researched, flexible, consistent, and well communicated transfer policy is likely to offset the concern that such transfers potentially can drain the utility's cash position or constrain management's ability to fund capital improvements from earnings. In addition, the general government managers and policy makers will have less room for disagreement and debate if a transfer policy is well established and maintained.

Whether a utility recognizes various overhead costs through direct operational expenses or through transfers to other governmental funds has no effect on the rating analysis. Standard & Poor's review includes a calculation where transfers and off-balance sheet debt are considered along with direct operation and maintenance expenses when calculating debt service coverage. This additional coverage calculation provides further insight into a system's overall financial flexibility.

Debt service reserve and other reserve funds

A fully funded debt service reserve can provide an additional level of financial cushion for bondholders. When an unexpected budget shortfall occurs, the reserve fund gives the utility time to implement needed adjustments before bondholders are adversely affected. The usual debt service reserve requirement is equal to the lesser of 125% of average annual debt service, 10% of bond proceeds, or maximum annual debt service. For systems with higher risk profiles, such as customer concentration, cyclical economic bases, or consumption and revenue volatility, a fully funded debt service reserve will likely make a difference in the rating and may be essential for an investment grade rating. From a practical standpoint, however, the debt service reserve is really a liquidity source and provides only limited additional security to bondholders—-it essentially provides the utility with time to address whatever issues have pressured performance. It is also likely that if a system needs to use the reserve, it is already in technical default on the rate covenant.

For utilities that consistently maintain high operating reserves and sustain high debt service coverage levels, the debt service reserve becomes less relevant. Policies that maintain coverage above covenanted levels, fund a defined percentage of infrastructure requirements internally, and maintain contingency or capital reserves at defined levels, reduce the likelihood of the utility ever falling into a position where it would need to use the reserve. In such cases, no debt service reserve may be needed to sustain a rating. Because unforeseen circumstances can occur,

Number Of Participants Also A Factor

Wholesalers range in size from as small as three customers, to 50 or more. The precise rating approach will generally be determined by, and may vary by, the size of the wholesaler's customer base. Since a debt-issuing wholesale utility is reliant on the ability of its customer base to pay all operating costs plus debt service, the credit quality of a wholesale utility's participants (whether they are considered members or customers) will affect the wholesale utility's credit quality to varying degrees. If a wholesaler is made up of 10 or fewer participants, and there are no contractual provisions that require non-defaulting members or customers to increase their payments to account for such delinquency, then Standard & Poor's will employ a weak-link approach to the analysis. This is because the failure by a single participant to fulfill its payment obligations to the wholesaler would result in a project deficiency, thereby exposing bondholders to the credit quality of the project's weakest participant.

In cases where a wholesale utility has about 10-25 members, there may be certain additional factors that allow the wholesale utility's credit rating to move up or down from its customers' or members' credit quality. These factors include the project or system's operating history; consistently high debt service coverage, which is uncommon for wholesalers; or the level of reserves typically carried by the wholesaler.

Wholesale utilities with more than 25 members or customers, assuming there is not undue concentration among a very small group of customers, can be expected to exhibit sufficient diversity to allow for a more system-oriented approach. Factors such as debt service coverage, equity in the form of unrestricted cash and investments, and overall economic considerations will become more prominent in the credit analysis, similar to the analysis of municipal retail utility providers. Wholesalers of this type do not generally have limited step-up language in their governing agreements.

however, utilities may choose to include a debt service reserve simply for the sake of prudence. Some utilities have taken advantage of "springing" reserve covenants, whereby the utility is obligated to fund a reserve from operations once coverage dips below a specified level. Although such covenants may prevent the utility from spending revenues needed to pay debt service in the immediate future, the features may also pose additional risks for the utility by increasing the amount of revenues required of the utility at the precise time when liquidity is deteriorating.

Wholesale Systems' Legal Protections

The ability of a wholesale provider to pass on increased costs to retail systems depends on a combination of legal, operational, and demographic factors, just as retail providers face similar issues in passing costs on to their customers. Accordingly, Standard & Poor's analysis for wholesale utilities is similar to that of retail systems. Because many wholesale-retail relationships are governed by long-term contracts, however, such agreements are important to the wholesaler analysis. Standard & Poor's will evaluate the wholesaler's contracts with the retail utilities to determine the flexibility of the wholesaler to adjust rates as well as the strength and ultimate repayment obligation of the retailers. Credit strengths exist in contracts where a step-up provision ensures that the financial impact resulting from a failure to pay by one party is spread out among the remaining retail parties. In contracts where no make-up provisions exist, the wholesaler may be more vulnerable to individual retailer weaknesses if contract provisions do not allow for supplemental rate adjustments. While contract provisions in some cases can result in rating differentiation, the economics of the customer base in aggregate, coupled with the system's operating performance, remain the important rating factors.

Documentation Requirements

The following materials should be submitted in conjunction with a rating request:

Financial Documents

- Three years of audited financial reports
- Current year's budget
- Bond resolution or trust indenture, including supplemental resolution or indenture, if appropriate
- Service contracts with wholesale customers
- Power purchase agreements

System Information

- Engineer's report, feasibility study, or rate study if available
- Anticipated capital improvement program
- Largest customers by revenues and service
- Three to five years of operating statistics
- Customers by class
- Sales in revenues and service by class
- System capacity and average and peak system demands
- Five years of historic and projected rates, with locally targeted comparisons

Economic Information

- Population trends
- Income trends
- Composition of employment by sector
- Unemployment rates
- Largest employers in service area
- Tax base trends
- Building permit activity

Drainage Revenue Bonds

The criteria for assigning ratings to bonds secured by drainage fees are similar to the criteria for water and sewer ratings. As is the case with water and sewer ratings, Standard and Poor's reviews the economic conditions of the service area, the financial and operating history of the enterprise fund, rate setting criteria, system management and the legal provisions associated with the bonds. Generally, the ratings for bonds secured by drainage fees are as strong, if not stronger, than water and sewer revenue bonds issued by the same entity. Principal factors that typically differentiate the credit quality of drainage revenue bonds from water and sewer revenue bonds include the lack of revenue volatility often experienced by water and sewer system revenue streams, very low rates or fees, a smaller overall capital improvement program, and greater expenditure control.

The service area and customer base are usually coterminous with the area served by the utility's water and/or sewer system. As drainage districts have few operational responsibilities, drainage fees are typically set to generate modest coverage of annual debt service and perhaps fund ongoing pay-as-you-go capital programs. These fees are often a flat, periodic fee paid per equivalent residential unit, or on a square-footage basis. As such, the revenue stream within a drainage fund is not subject to the weather-related fluctuations most water and sewer funds experience, so maintaining high coverage levels becomes less important. Since the drainage fee is usually added to the water bill, nonpayment of only the drainage fee is not practical,

therefore collection rates are as strong as that for the water and sewer fund.

Unlike water and sewer ratings, there is typically a gross pledge of revenues securing drainage revenue bonds. Net coverage is often close to gross coverage as most drainage funds have little operations and maintenance expenses. Since drainage systems are usually established for the purpose of addressing capital-specific items, most drainage fund expenditures are capital-related and can be delayed by management should liquidity become a concern.

The rate covenant and the ability to raise rates are important factors, but less so given the overall stability typically experienced by drainage revenues. It is typical, however, to see a rate covenant set to achieve debt service coverage of at least 1.10x. The rates or fees charged are typically very low in relation to the overall bill for water and sewer usage. ■

Electric Utility Ratings

Standard & Poor's Ratings Services criteria reflect the challenges and risks of publicly owned utilities operating in a deregulated wholesale environment, and approaching retail competition. The criteria also reflect the dynamics of the energy industry and the credit implications for bondholders and lenders, and emphasize the qualitative and quantitative factors that indicate an electric utility's capacity to operate in a market in which it must work to retain, and gain customers.

Credit ratings for public power issuers embody the interplay between eight variables: management, operations, competitive position, markets, regulation, service area economy, finances and legal provisions. Standard & Poor's also assigns business profiles to all rated electric utilities, which includes the first five factors. These factors are incorporated in credit ratings, and enhance an investor's ability to differentiate between utility systems by complementing the credit ratings and outlooks.

Similarly, business profiles enable utilities to make comparative analyses and internal assessments to benchmark themselves against other utilities with which they may compete. Business profiles are ranked on a ten-point scale. A score of "1" reflects the strongest business profile.

Management

A competitive marketplace puts a premium on leadership skills. Management's decisions in all facets of utility rate setting, operations and finances, are critical to a public power system's long-term viability and strength. Standard & Poor's assessment of management includes an evaluation of the extent to which a utility's strategic plans are supported by local councils or boards of directors, and the extent to which the governing body's actions are supportive of credit quality. Management should demonstrate an understanding of, and be supportive of rate structures, customer service initiatives, and financial strategies that bolster credit quality. While Standard & Poor's evaluation of management consists of a qualitative assessment, our analysis employs specific criteria for measuring the effectiveness of management. The following elements are exhibited by well-run utilities:

- Institutionalized planning processes that are revised regularly to reflect changing conditions;
- Sound financial and operating policies that are supported, implemented and achieved;
- A deep and experienced executive team;
- A solid grasp of industry issues that extends beyond the local utility;
- Extensive knowledge of customers and their needs;
- Extensive knowledge of competitors; and
- A proactive and farsighted management approach that has the support of an informed board or council.

Management should also demonstrate an understanding of the risks and rewards associated with entering into contracts with counterparties, and with entering into new lines of business beyond the scope of its core mission. Additionally, management will be assessed on their ability to operate within a given governance and oversight structure.

Operations

Standard & Poor's examines the full gamut of a utility's operations through a multi-pronged analysis that explores the following:

- Power and fuel resource mix, capacity, supply and demand;
- Operating efficiency and reliability; and
- Capital needs.

The strength of a utility's operational profile and cost competitiveness is rooted in its portfolio of power supply resources. Standard & Poor's evaluation also includes the analysis of the operating statistics of a utility's power transmission, distribution, and generating facilities. Efficiency measures, including frequency and duration of unplanned service interruptions, plant heat rates, and availability and capacity factors, all are vital in determining facility efficiency and ultimately the competitive nature of an individual power plant, or the utility's overall cost profile.

Standard & Poor's examines the diversity or concentration of resources and assesses the fuels upon which a utility depends. This analysis explores resource availability, reliability and cost. Standard & Poor's does not have a bias toward owned or purchased resources, and the financial analysis of a purchased power agreement will equate fixed capacity payments with debt service incurred when financing directly owned or jointly owned generation assets in computing fixed charge coverage. Rather, resource diversity, flexibility, and cost competitiveness are the key determinants of operational health.

Issues associated with purchased resources include the level of demand charges, unique contract terms and duration of contracts, and the ability to take advantage of market opportunities. An important component of the power supply evaluation is an assessment of a utility's fuel mix, supply arrangements, fuel costs, and any financial or other hedging mechanisms designed to control fuel risk. Fuel contract terms, especially pricing conditions, duration, reopener options, and minimum take provisions will be examined. Standard & Poor's will look for a balance in the length and nature of these supply contracts, and for each utility will determine the degree of risk associated with its fuel purchasing practices.

Standard & Poor's will explore the degree of sophistication and the checks and balances used in conjunction with any hedging program. Crucial to the analysis of an issuer's fuel mix and purchased power mix is an assessment of counterparty risk. This includes an analysis of wholesale contracts with regard to duration, termination provisions, price, and the extent to which they add a fixed component to the financial profile. Coal, gas, and nuclear-fired generation at various times have fallen in and out of favor. As such, a diverse mix of fuel that enables a utility to employ cost efficient generation is viewed as a strong operational component.

Prepaid power purchase agreements typically offer the buyer favorable inducements such as discounts, and can be funded with tax-exempt debt issued by municipal issuers. For debt-financed, prepaid power contracts, the principal and interest payments are treated similar to capacity payments of the more traditional purchased power agreements. Operational considerations include the source and nature of the contracted power supply, which may be unit specific or from a more diverse pool of generation assets; the amount of the commodity purchased relative to the issuer's total supply needs; contract duration; and creditworthiness of the power supplier. Contract terms are also scrutinized, and should provide bondholders with protection in the event the counterparty fails to perform its contractual obligations.

For prepaid natural gas transactions, the treatment of the debt issued to fund the prepayment is slightly different than that of prepaid power contracts, since pay-as-you go gas supply purchase agreements do not typically have a capacity component imputed, as with purchase power agreements. The annual amount of the debt service on the prepaid bonds is typically sized to approximate the cost of gas that would arise had the gas been purchased under a long-term gas purchase agreement, so the impact on cash flow under either scenario is minimal, as long as the supplier continues to perform.

For prepaid gas transactions involving directly issued debt or involving third party conduits such as joint action agencies, debt service is calculated or imputed to measure the transactions impact on debt ratios. However, the qualitative factors that mitigate potential pitfalls usually associated with debt leverage, such as the risks of load loss, supplier performance and remarketing, will be taken into consideration. Therefore, although evaluated on a case-by-case basis, debt-financed prepaid gas contracts, so long as their terms do not give rise to significant additional operating risks, and if structured so that counterparty risks and remarketing risks are mitigated, generally should have a neutral impact on credit quality when compared to a pay-as-you go gas purchase agreement

Costs of historical investments in generating plants continue to represent a significant challenge to utilities and frequently are a significant element underlying above-market rates. Investment is measured in terms of the amount of debt that has been incurred and the associated costs of servicing debt in relation to kWh sold, kWh of demand, kW of installed capacity, and the number of customers served by the system. Again, fixed capacity payments made under purchased power agreements will be factored into the analysis, equating such payments with principal and interest on generation-related debt. In the event that a municipal electric utility is faced with a deregulated retail environment, the elimination of stranded costs is critical to

its viability. A utility whose fixed obligations cause rates to be above market levels is unlikely to be able to fully recover these costs in a competitive environment, which will have negative implications for both the utility's business profile and rating.

Transmission access is vital to a utility system's operations, and credit and business risk. In determining strength in this area, Standard & Poor's will look at the number of interconnections with which the utility in question has access, the cost profiles and supply and reserve characteristics of these other interconnected utilities, and the price paid for wheeling of power. Importantly, Standard & Poor's will evaluate the extent to which these interconnections and potential power diversity arrangements provide a utility with enhanced operating and competitive flexibility. The Federal Energy Regulatory Commission (FERC) is authorized to impose market rules regarding transmission operations, and the impact on a utility as such rules evolve will also be evaluated.

Operating efficiency and operational strength are measured with reference to the cost of producing a unit of energy. Historical and projected trends in average and marginal production costs on an absolute and relative basis are reviewed. A utility's generating costs relative to industry averages will indicate the economics of its power supply and the potential for stranded costs.

The efficiency of a utility's services and operations is evaluated according to ratio analysis, including production cost per kWh, debt per kWh and debt per customer. A utility's efforts at managing its load curve—and therefore its costs—through demand side and resource management programs will be viewed positively to the extent that they are economically reasonable and practically achievable. Some utilities with below average load factors may be less able to control the associated inefficiencies and costs, but they also may be less susceptible to competitive forces.

Favorable operational characteristics include:

- Diverse supply sources;
- Favorable fuel supply arrangements coupled with cost containment strategies;
- Widespread transmission access that does not depend completely on a single entity to wheel power;
- Production costs that are competitive and reflect reasonable operating and maintenance costs; and
- Manageable environmental or regulatory exposures.

Some public power entities are active in, or planning to provide new services, such as telecommunications services, chilled water, and steam, in addition to their core businesses in order to diversify their revenue streams. Standard & Poor's will evaluate whether or not such additional ventures, which can increase financial risk, will be detrimental to the utility's core business. Important components of such analysis are the relative share of operating expenditures attributable to, and the amount increased leverage associated with such enterprises.

Competitive Position

Competitiveness is important to the retention of native load and the preservation of the revenue stream pledged to debt repayment, for both systems operating in open access environments or in those that are currently protected. Competitive positioning remains important, even for utilities in states that have yet to advance deregulation due to heightened awareness of retail choice among even captive electricity customers.

Overall system average rates, as well as rates of a customer class, are at the center of Standard & Poor's review of a utility's relative competitive position. The analysis is extended to include an assessment of the rates that a utility charges specific loads and rates levied on its largest customers relative to potential alternative suppliers. Standard & Poor's explores each utility's rate design, use of contract rates, and rate affordability. Affordability is measured relative to income levels and usage patterns. The commitment of policy makers to provide equitable rates that reflect the costs of providing service without subsidies is crucial in the changing environment. The presence of automatic power or fuel cost adjustments, which limit or avoid the political influence over timely rate adjustments geared to recapturing fluctuating commodity costs, is viewed favorably.

A discussion of rates also includes the issue of a utility's rate-setting process, whether regulated by a third party or through self-determination.

Strong competitive position characteristics include:

- A rate design that equitably apportions costs between and among system customers;
- Unit rates by customer classification that display a competitive advantage;
- Projections of rates that will continue to display a competitive advantage, preserve the revenue stream associated with native load, fund capital expenditures for system maintenance and growth and help attract new load;
- Ability to establish rates free from state regulatory bodies; and
- Flexibility to adjust rates quickly and frequently to match potentially volatile cost structures.

Service Area

An analysis of a utility's service area entails a review of its customer base and demographic characteristics.

Standard & Poor's examines each utility's customer base in terms of total number of customers and the number of customers by class. Revenues, kWh sales, margins and load factors are examined for each customer class and for the largest customers. The terms and time frames of any long-term contracts negotiated with industrial and commercial customers are also examined. Load factors and unit costs charged to key industrial customers are particularly important because they demonstrate the attractiveness of these customers to other suppliers or the opportunity for self-generation, and the potential for lost revenues. Large customers' supply options and cogeneration capabilities are important to ascertain potential system exposure. Also factored into the analysis of the customer base is an evaluation income levels to determine the relative affordability of rates.

The service areas of rural areas are sparsely populated with few customers per line mile, which reduces the risk that a competing utility will cherry pick its most attractive customers. Yet, these service areas also limit the opportunities for revenue growth, and tend to increase capital investment and service costs per unit of sales.

Historically, Standard & Poor's examined an electric utility's service area economy as a proxy for the stability of the revenue stream pledged to repay the utility's debt. While economic analysis remains a major focus, it can be tempered by the influence of competitive factors.

Favorable market characteristics include:

- Load factors for the system and leading customers that do not make the system particularly vulnerable to competitive factors;
- Stable or increasing population trends, in accordance with other forecasts for the utility; and
- High wealth indicators relative to cost-of-living indices and the level of electric rates.

Regulation

Standard & Poor's assessment of regulation encompasses several regulatory factors. These include the impact of federal, state, or local regulators with regard to ratemaking, competition, transmission, and the environment. The impact of the regulatory framework will come into play among several rating factors, particularly operational and financial factors.

In terms of restructuring of electric markets, Standard & Poor's believes that the movement toward a more openly competitive environment is possible over the long term, and would most likely occur on a state-by-state basis, as opposed to via federal pre-emption. Standard & Poor's recognizes that many utilities will find that open markets will create opportunities, and also risks. Generally, however, public power utilities in regulatory environments that do not require them to face direct competitive threats from other power suppliers are subject to less credit risk.

Finances

A traditional analysis of a utility's financial performance incorporates a review of debt service coverage margins and liquidity, but also examines specific utility results and decisions. For example, some utilities are emphasizing competitiveness over the financial strength associated with excess coverage margins and debt service reserves, in an attempt to ensure long-term system viability. Standard & Poor's incorporates the effects of such policy changes and the potential diminution of financial cushions into its credit ratings. Standard & Poor's will assess the costs of achieving competitiveness and the impact of competitiveness upon financial integrity and system reliability. Reduced coverage and reserves may be appropriate for some utilities but not for others, depending upon the degree to which competitiveness can be enhanced and also the operational and competitive challenges that each utility faces.

Key financial ratios include debt service coverage, and fixed charge coverage; unrestricted cash as a percentage of total expenditures; and debt to equity, among others. While debt service coverage is a traditional financial metric for municipal utilities, it is common for municipal electric systems to structure their operations using off-balance sheet debt for generation projects, and purchased power agreements that have debt-like characteristics. As such, fixed charge coverage, which imputes fixed payments associated with power and transmission purchases, whether through debt service or capacity payments tied to purchase contracts, is the more critical coverage ratio in the financial analysis of public power utilities. Transfers to other governments, while often expressly subordinate, are factored into the analysis as operating and maintenance expenses that reduce available net revenues, since such transfers typically resemble property taxes, franchise fees, direct cost reimbursements, dividend, or return-on-equity type payments commonly paid by other enterprises such as investor-owned utilities, and are assumed to recur annually.

The balance sheet has become a key tool for controlling costs and achieving competitiveness. Asset-to-liability management is particularly important

for systems that have high debt due to their investments in high-cost generating assets and the extended use of capitalized interest to fund them. Popular options that are being pursued by public power include the restructuring of debt, extending the useful lives of plants, writing off uneconomic resources, accelerating the amortization of high-cost debt, and increasing the use of variable rate debt, interest rate swaps and other debt derivatives. It is quite likely that still other financial tools will be introduced in response to the pressure to bring down rates.

The use of each of these tools is evaluated relative to its appropriateness to the specific situation of a given utility. Generally, these mechanisms can be said to produce positive results to the extent that they reduce the upward pressure on rates. Utilities that maintain adequate cash balances to deal with the opportunities and challenges posed by a restructuring industry maintain important flexibility. For instance, ample funds will allow them to pay off high-cost debt, thereby improving their cost of capital and equity ratio. Some systems with strong business fundamentals could reduce their cash balances without impacting their credit ratings. This is particularly true for distribution systems that do not have the same pressures and demands on liquidity as the more generation-dependent systems. The movement of the industry in this direction is evidenced by the revised bond resolutions and indentures that are designed to free up reserves that have been maintained under traditional financing documents.

Standard & Poor's monitors the use of synthetic financial instruments. These instruments present benefits, but also can increase risk, particularly as operating margins and reserves are trimmed to achieve competitiveness. Because risks associated with financial derivatives are borne by ratepayers and are not shared with owners, as is the case with investor owned utilities, it is imperative that a very high degree of oversight and control be employed.

Legal Provisions Of Retail Electric Systems

Standard & Poor's views an electric revenue bond transaction's legal provisions in conjunction with the system's overall financial profile. For electric utilities that are able to generate system surplus well above minimum levels required by bond covenants, legal provisions will be of less importance in the rating analysis. For electric utilities that demonstrate relatively weaker financial profiles, the analysis of legal provisions remains a critical factor. As defined in a bond indenture or resolution, the legal provisions make clear the issuer's capabilities, responsibilities, and the bondholder's recourse in the event of the issuer's noncompliance.

For an electric utility with a strong financial profile, strong or weak legal covenants will not correlate with a higher or lower rating. For a weaker electric utility, liberal legal covenants will continue to be viewed as a weakness and could serve as the basis for the assignment of a lower rating to systems with modest credit quality.

The most important legal provisions reviewed are the security pledge, rate covenant, flow of funds, additional bonds test, and debt service reserve. Also, a growing number of issuers are incorporating swaps or other derivatives into bond transactions, to supplement the traditional legal structure. Please refer to the Debt Derivative Profile section for additional information.

Security

The most common form of bond security for utility bonds is system net revenue. Some issuers elect to secure bonds on a gross revenue basis. However, Standard & Poor's believes that pledged system revenues should always be sufficient to cover debt service and operating expenses and, therefore, does not differentiate between net and gross revenue pledges. Similarly, off-balance sheet debt obligations of retail utilities that are usually secured by system operating expenses are treated as senior lien debt. Typically, these payments are take-or-pay obligations with wholesale agencies.

Rate Covenant

The rate covenant establishes the minimum level of debt service coverage that a system must provide on a fiscal-year basis. Standard & Poor's analyzes the rate covenant in relation to the overall operational and financial performance of the individual system. Generally, a mature system with stable operational and financial performance will not need as strong a covenant as a system that can be subject to volatile financial margins or anticipates a large capital program.

A rate covenant addresses all obligations—senior and subordinate debt, as well as other system fund requirements. Typically, rate covenants for retail systems range from 1.10x-1.25x the annual principal and interest requirements of senior lien debt. This extra margin provides bondholders with financial protection. Sufficiency-only rate covenants of senior lien debt are of less concern for issuer's that consistently set and achieve internal coverage policies well in excess of coverage levels required by the rate covenants.

For issuers that operate at less substantial margins, weak or sufficiency-only rate covenants will play a greater role in determining the rating. For these issuers, a covenant that allows the issuer to use existing cash reserves, otherwise known as

"carryover coverage", or one-time revenue sources would likewise have negative rating consequences, especially if such funds are forecast to be necessary for coverage compliance.

Flow Of Funds

The flow of funds specifies the order and timing in which system revenues are used to meet the obligations created by the indenture. Of critical importance to the rating is the lien position of debt service payments in relation to other system obligations created by the indenture. The flow of funds defines the issuer's ability to transfer surplus funds out of the system. Such transfers can drain the utility's cash position or restrict capital improvements otherwise financed from earnings. Transfer payments that are limited to a reasonable amount and limited to a specific formula, such as a percentage of revenues, partially offset this concern. However, Standard & Poor's will calculate coverage both with and without transfers for comparative purposes. Frequency of payments to the debt service fund range from monthly to semiannual deposits. From a financial perspective, monthly deposits are preferred, since this approach allows a smooth buildup of the debt service fund and an early indication of any shortfalls.

Documentation Requirements

The following materials should be submitted in conjunction with a rating request:

Financial Documents

- Official statement
- Indenture/resolution (including supplemental resolution and indenture)
- Other legal documents
- Debt service schedule (with and without current financing)
- Five years of audited financial information
- Capital improvement plan
- Current year budget
- Pro forma projections
- Contracts for purchased power (including participation agreements)
- Contracts for fuel (if applicable)
- Contracts with leading customers
- Details on power and interest rate swaps.

System Information

- Type of unit (base, intermediate, peaking), fuel type, availability, capacity, loadfactors and installation date for individual generation units
- Peak data (historical)
- Load factors for leading customers
- Leading customers as a % of revenue
- Revenue by customer class (residential, commercial, industrial, other), historical
- Customers by class (residential, commercial, industrial, other) historical
- % power purchased, % power generated, historical & projected
- % of purchased power under contract; % of purchased power brought on spot market
- Fuel mix, historical and projected (for generators)
- Rates historical, projected
- Fixed charges for off-balance-sheet obligations, historical and projected
- Debt service schedule for off-balance-sheet projects, and participation percentages.
- Transfers, historical and projected
- Rate stabilization funds (historical/projected) held at the issuer level
- Transfer policy and methodology if available
- Debt and hedge policies if available
- Policies related to entering into non-traditional ventures, if available
- Summary of power supply, transmission, and fuel purchase contracts, including term price, amounts, fixed and/or capacity payments, and other key facets.

Additional Bonds Test

As with the rate covenant, the additional bonds test is viewed in conjunction with the financial and debt profile of the system. The purpose of the additional bonds test is to protect existing bondholders from dilution of their security position. Standard & Poor's focuses on whether the issuer's right to and likelihood of issuing parity bonds at a later time would result in a decline in coverage. Attributes of a strong additional bonds test for parity debt include a test based on historical net revenues that preserve sound coverage of existing and proposed obligations. A test that measures historical earnings is preferred, since it is less speculative than those based on revenue projections. Often, projected tests rely on assumptions that might not be realized, such as future rate increases or revenues generated by new facilities.

Likewise, adjustments to historical net revenues to reflect new customers, system acquisitions, rate increases, or contracts for additional services can weaken an otherwise strong historical earnings test.

Reserves

Standard & Poor's looks for established reserve funds, such as debt service reserve accounts maintained at specific funding level, to provide additional cushion for debt service payments and system maintenance within a given budget year. For issuers with thinner margins, a fully funded debt service reserve is important, since it provides an additional layer of protection for bondholders.

Typically, a debt service reserve requirement is equal to the lesser of 125% of average annual debt service, 10% of bond proceeds, or maximum annual debt service thresholds, which are derived from IRS regulations. This restricted reserve is expected to be funded from bond proceeds, or built up from pledged revenues, usually over no more than five

years. The former approach adds more credit strength. Substitution of cash-funded reserve by a surety bond and/or LOC obtained from a credit-worthy entity also is acceptable. If the reserve fund is tapped to meet debt service payments, a reasonable replenishment schedule should follow. Renewal and replacement accounts and rate stabilization fund accounts are also common, and provide additional financial cushion, but are not considered necessary from a credit standpoint.

Typically, a system with stable operations and strong financial margins can carry diminished debt service reserve provisions, including the use of springing covenants, without credit implications. Alternatively, absence of fully funded reserve for systems that generate thinner margins, exhibit asset or customer base concentration, a shallow service area economy, or cash flow constraints, the may result in a lower rating. ■

Solid Waste System Financings

Areas reviewed to reach a rating determination include:

- Economic considerations;
- Financial data/capital improvement plan;
- Rate criteria;
- Operational characteristics;
- Management assessment; and
- Legal provisions.

Particular concerns related to solid waste management within different states are included in the analysis of these factors. Generally, areas that could differ from state to state are environmental laws, the power to create franchises, the magnitude of competing alternative disposal options, and lastly, the level of government responsible for the implementing of solid waste disposal plans. Those unique features applicable to credit quality of individual issuers will be reviewed on a case-by-case basis.

Economic Considerations

The economic assessment of the markets in which the issuer operates will be discussed in this section. The analysis will primarily consider waste flow available within the service area, and the ability of these flows to generate sufficient revenues to repay debt, and also includes an analysis of historic and projected waste flow trends. The characteristics (commercially generated versus residential generated) of the waste flow will also be considered. In addition, the service area economy and demographics will be scrutinized. Another key element of waste flow availability and control relates to the arrangements and relationships with waste haulers. Consideration of the different types of arrangements under which haulers and the system operate, such as franchise agreements and contracts, among others, are factored into the rating analysis.

The economic analysis will also examine the service area, and how it is defined including consideration of agreements and relationships with participating municipal governments for the regional or countywide systems. An adversarial or litigious history with either haulers or with municipal governments will present greater market risk. Employment, population trends, and wealth and income indices are reviewed to establish the underlying economic strength of the service area and its capacity to repay the financing. Service demand (garbage flow) typically reflects the service area's economic activity. From the economic base analysis, Standard & Poor's Ratings Services can assess the waste stream service demand. As a starting point, historical garbage disposal alternatives, tonnage, and costs are reviewed. Per capita disposal rates can be indicative of the volatility of the waste flows and the effectiveness of recycling and reduction programs.

A review of the area's future disposal alternatives and reliability of facilities is performed. Competition from alternatives (versus control of the waste stream) is assessed to understand tonnage projections. The capacity of all available facilities on an annual and lifetime basis is then compared with the forecasted service area demand. If surplus capacity exists, an analysis is performed of the additional costs and exposure inherent in carrying that excess. If the facilities are inadequate to handle current or projected service area demand, the evaluation includes the cost of financing additional facilities.

Rating Criteria

The rating criteria includes a review of the system's cost structure with a primary focus on current and projected tipping fees relative to alternative or competing facilities. The proximity of competing facili-

ties, as well as the capacity for those facilities to accept outside waste will be examined. The assessment will also consider the total household cost including collection and disposal. While the overall system or project cost profile is of primary importance, some consideration will be given to fee structure since risk of waste diversion can be mitigated through the method of cost recovery. However, the overall system or project cost profile will still remain as a critical factor.

Operational Characteristics

In evaluating the operations of a solid waste system or project, Standard & Poor's focuses on the service provider's flexibility in handling changing industry requirements while efficiently fulfilling its primary purpose. As mentioned, waste disposal methods must address a number of environmental issues.

A key consideration in the analysis is bond amortization versus the useful life of the facilities. The expected life of the landfill should at least match the term of the debt, and the legal structure must provide flexibility to respond to the variability in landfill life if waste flow levels change. A system, by its nature, has an advantage over project financings in handling these risks. However, a project also can be structured to manage them effectively—for example, a landfill disposal contract that provides project back-up disposal capacity. However, contracts also have risk. Contracts generally allow less control than system-owned capacity and can be subject to legal, regulatory, and performance concerns.

System or project operations are evaluated against demand for disposal over the term of the bonds. If components of a system or a facility are temporarily or permanently out of service, the ability to dispose of waste elsewhere is reviewed. The capacity to handle such a situation with a minimum of shock to operations or cost is viewed as a credit strength. The greater the volume of waste that can be disposed of at redundant facilities, the better the ability of the issuer to generate revenues to repay debt. This leeway allows time for the development of other alternatives that might guard against a sudden increase in the price of disposal and reliance on an outside source for the service. Such reliance subjects the operations to the whims of another entity for continuance and cost, and the lack of control is viewed as a weakness.

Standard & Poor's assesses the entire waste stream and disposal process to evaluate if changes have been adequately addressed. For example, growth in the service area. Afterwards, questions about the proper size of facilities or provisions and plans for expansion are evaluated. An inordinate reliance on one method of waste management raises questions regarding the system's flexibility to respond to waste flow changes and facility problems.

An assessment of the impact of the external pressures brought on by regulation and environmental mandates, whether at the federal, state, or local level. The analysis will consider how complying with the regulatory environment will impact a system or project's ability to compete. The impact can be felt through increased costs or changes within the business environment. The U.S. Supreme Court's decision in the Carbone v. Clarkstown, N.Y. case, which invalidated flow control, drastically changed the environment for the solid waste industry. This has prompted proposed legislation and other actions at all levels of government. This section specifically addresses the impact of any such initiatives.

Financial Data/Capital Improvement Plan

In evaluating finances, the concern is the level of coverage and liquidity. As with Standard & Poor's focus on the legal structure, a review of different operating and nonoperating scenarios that demonstrate sufficient debt service coverage in all cases is required. Costs are viewed relative to the capacity to pay. As the cost of disposal is generally rising, the comparison of future costs with historical costs has less meaning, but the control and management over future cost increases are weighed against the risks. Also, the effectiveness of the chosen disposal options is measured against the cost of future alternatives. By operating a solid waste system, a community generally has more cost control. It also assumes more risk in ownership and/or operation than if a private enterprise provides disposal. Landfill closure costs, for example, can be substantial and should be amortized over the life of the landfill in order to match revenue generation with costs.

Costs are reviewed in terms of tip fees per ton and household costs. The former is a relevant measure for systems that rely, for their major cash flow component, on tipping fees paid by franchised and private haulers. Clearly, the competitive position of the tipping fee impacts financial performance. However, total household costs also provide an important basis for evaluating the costs of the system. Household costs should include not only disposal cost, but also the cost of collection and transportation to the disposal site; individuals are concerned with their total bill for garbage service, not the various components. Household cost increases are reviewed for acceptability and affordability.

Costs under different scenarios are reviewed and measured for variance. Large variances may raise concerns. How attendant increases and risks are

mitigated is factored into the analysis. For example, if the revenue stream depends heavily on a secondary revenue stream, such as energy revenues, the risk of lower energy sales and the impact on household cost are evaluated. The steps that an issuer takes to mitigate as many of it's revenue generation risks, that ultimately lessen the financial impact on household cost, the stronger the rating.

Additionally, Standard & Poor's will focus on whether a system is in compliance with its EPA mandated post closure costs, such as is management setting aside sufficient funds to meet this future liability fully, and if not what plan does management have to eventually meet this liability. When calculating annual debt service coverage the operating expense labeled provision for post closure cost will not be included in determining total operating expenses, thereby insuring that debt service coverage will not be adversely affected by the decision to annual fund the post closure cost liability.

Documentation Requirements

The following materials should be submitted in conjunction with a rating request.

Financial Information

- Three years of audited financial reports (if available)
- Current year's budget

Legal Information

- Bond resolution or trust indenture
- Enabling legislation
- Disposal and transportation contracts
- Solid waste management plan

System Information

- Engineer's report or feasibility study, if available
- Anticipated capital improvement plan
- Three to five years of historical and projected rates, with locally targeted comparisons
- Three to five years of operating statistics (if applicable)
- Customer or hauler trends
- Waste-flow tonnage
- Per capita generation
- Recycling rates

Economic Information

- Population trends
- Income trends
- Composition of employment by sector
- Unemployment rates
- Largest employers in service area
- Tax base trends
- Building permit activity
- Sales tax trends

Additional Requirements For Project Financings

- Construction, electric sales, service, and operating contracts
- Site lease
- Vendor performance guarantee
- Project operating statistics (if applicable)
- Throughput
- Energy generation/revenue
- Capacity factor

Management Assessment

An assessment of management's ability to adapt and respond within the business environment and consider strategies for ensuring waste flow and revenue streams is undertaken. One of the most critical aspect is to determine whether the management team is proactive or reactive. Standard & Poor's focuses on who ultimately makes the key decisions (an elected versus appointed governing body), such as when and how much to increase rates, what the additional debt plans will be, and what policies are to be adopted. More importantly what has been the history of making timely and effective decisions.

An independent consulting engineer's report, historical operating records and a meeting with management provide information to evaluate management's ability to construct and operate the facilities. If a private operator is contracted to run the system or facility, Standard & Poor's focuses on what the incentives there are for that operator to provide efficient operations. In all cases, an equitable agreement for both parties and termination clauses for nonperformance are necessary.

Long Range Planning

Policies focusing on short-and medium-term issues may be implemented with some success, but they are likely to prove insufficient without some focus on relating the system's current status to its long-term needs. True operational stability assumes that a system's current and likely future needs have been measured and are relatively known.

The average increase in rates to be targeted over the next decade cannot be known without some idea of the cost pressures a utility may face, and without an honest effort to estimate these needs, it will be extremely difficult to educate and inform ratepayers. Cost pressures to be estimated include those for operations, replacement, regulatory compliance, and accommodating additional growth. The nature of these cost increases should be considered, that is, whether they are ongoing or likely to be diminished over time, along with their magnitude.

Many utility officials cite the impossibility of correctly estimating future economic development

trends, regulatory outcomes, and the long-term patterns of various cost pressures. As such, they claim that trying to measure them actually represents a poor use of limited resources, especially for smaller systems that lack the staff or funds for consultants to devote to such studies. While most of these drivers are indeed highly uncertain, Standard & Poor's views a refusal to consider the potential burden of pressures beyond the short-to medium-term as a credit risk. Accordingly, even small utilities that have attempted to examine long-term risks and possibilities in limited ways consistent with their resources and capabilities will likely find their rate projections and capital plans more accepted by Standard & Poor's.

Legal Provisions

Legal provisions are defined through the bond indenture and other documents, which outline the basic structure of the financing. Whether the structure provides for an integrated solid waste system, a stand-alone project or a subsidized financing of facilities, the analysis focuses on what is the security for the bonds and the identification of the supporting revenue stream.

Standard & Poor's Ratings Services reviews all contracts concerning service, operation, construction, and energy sales for possible credit implications. The revenue stream pledged under these documents can vary considerably. A mixture of special taxes, disposal fees, and a municipal entity's credit can be pledged in addition to other revenues, such as those from the sale of by-products. The nature and diversity of the revenue stream is an important factor, given the transportability of solid waste. A system or facility that receives all or most of its revenues from tipping fees paid by private haulers is likely to be more vulnerable to competition than a system that can use alternative revenue streams, such as household disposal fees

A detailed analysis begins with identification of the source of revenues for debt service payments. The ultimate credit strength depends upon the primary revenue stream, such as revenues influenced by market events (i.e. tipping fees) or the general fund pledge of the community. Through a service agreement, a municipality might covenant to make payments from general fund by the use of annual appropriations. In these circumstances, Standard & Poor's establishes a GO assessment that generally is critical to the rating determination. A general fund pledge is assessed at less than the full faith and credit pledge of the municipality; factors considered are the presence or lack of, appropriations risk, the level of financial flexibility available to the general fund, and the economics of the project.

When a user fee is pledged to debt repayment, Standard & Poor's focuses on the history of the user fee and how it is collected and assessed. Cases where the user fee is formulated, but has yet to be implemented, generally provide weaker credit support. If a method of billing and collection exists, and such a fee only needs to be levied, the credit generally is considered stronger.

Under different operating scenarios, the legal structure must provide a sufficient revenue stream to cover operating costs and debt service payments. The legal structure should provide a revenue stream that can be maintained, despite additional maintenance cost, lower throughput, reduced energy output or price, and outages caused by system failure or environmental requirements. For example, recovered material sales from a recycling program are likely to vary, depending on product quality and market price. The ultimate or primary revenue stream must have the flexibility to make up for any declines in revenue flow from a more unpredictable secondary stream. Here, reserve funds may be required to provide a bridge from one budget year to the next, depending on the flexibility of the primary revenue stream.

One unique concern that must be addressed by solid waste issuers is the transportability of solid waste. Since there is usually no direct link between the solid waste utility and the customer, the haulers collecting the waste can choose the disposal site. The ability to direct waste to the project or system's facilities provides an important link between the waste generator and the disposal system. Waste-flow control can be provided by municipal ownership of collection vehicles, some form of contractual arrangements, or through economic means. Waste flow control ordinances are not factored into the analysis and should not be relied on in light of the U.S. Supreme Court's Carbone decision. Based on the competitive nature of the solid waste industry, a system that cannot effectively retain the waste flow is generally not investment grade, unless alternative revenue sources are available and pledged for debt repayment. ■

Airport Revenue Bonds

In recent years, growth and expansion of new entrants to the airline industry once dominated by established network carriers have demonstrated the importance of providing aviation infrastructure, and the dynamic nature of the airline business model. While airports have proven quite resilient, the sector is obviously directly exposed to developments in the airline and travel industries. Looking forward, the airlines' own financial profile is expected to continue to be cyclical, with competition, alliances, bilateral agreements, rising labor and fuel costs, uncertainties and instability seen as common occurrences.

With some interruptions, passenger traffic has demonstrated steady growth, mirroring economic trends while imposing significant capital requirements on airport operators. After the U.S. deregulation of the airline industry, discretionary travel, and business demands stressing mobility and timeliness make air travel and airports essential to, and a barometer of, the nation's economy.

Standard & Poor's Ratings Services approach to rating airport revenue bonds reflects the growing maturity of the national and international airport network with a focus on passenger demand—-both local and connecting—that drives aeronautical and nonaeronautical revenue, as well as an airport's role in the overall aviation system. Standard & Poor's historically has treated U.S. general airport revenue bonds as a special type of utility debt, instead of as lease obligations of various carriers. The strong business position of most airports, public sector ownership and essentially closed flow of funds, along with the existing regulatory environment that restricts the use of airport revenues to airport purposes have allowed strong investment-grade ratings, relative to those of the airlines.

Service Area Characteristics And Air Traffic Demand

Standard & Poor's analysis begins with understanding the foundation of air passenger service and the underpinnings of the regional economy that produces the existing and future demand for aviation infrastructure. The definition of a service or catchment area of each airport varies, depending on regional characteristics. An airport's reach frequently extends beyond its city's limits or entire metropolitan area, adding diversity to its user base while also exposing the airport to competition. Factors examined by Standard & Poor's include historical and projected population growth, employment expansion and mix, as well as wealth and income levels are important in the economic evaluation. Historical airport utilization trends versus those of the nation are reviewed. An airport facility demonstrating stable passenger trends during a recession is generally stronger than one that grows spectacularly in good times, but experiences greater traffic losses during a downturn.

The importance of local economic factors to a rating depends, in part, on the nature of the airport's traffic. If most passengers are of the origination and destination (O&D) nature, the local economy dictates the level of service demand. Conversely, an airport used heavily for connecting traffic depends less on service area economics. Substantial transfer traffic is usually vulnerability because the choice of connecting facility is not made by the passenger, but dictated by the airline and thus related more to a carrier's viability and route decisions.

However, each airport has mitigating factors that could, in some cases, effectively offset this concern. These include:

- The importance of the facility to the overall system of U.S. airports;
- Favorable geographic situation, evidenced by a "natural" hub location and the absence of viable transfer alternatives.
- The level of connecting traffic;
- A balanced and growing economy that may need additional O&D airport capacity currently used for transfers;
- Airfield capacity and attractive facilities into which other carriers would expand service;
- Low debt burden and carrying costs;
- The financial strength of carriers accounting for the greatest amount of connecting traffic, and their commitment to the airport or city including their level of infrastructure investment in the region;
- The role of the facility in the dominant carrier's route network; and
- Legal provisions that allow maximum flexibility in charging rates to carriers on an as-needed basis.

Given the declining number of viable carriers and the proliferation of hubs, it is unlikely in other cases that a departing hub carrier would be replaced so easily. In general, Standard & Poor's has viewed the debt of most transfer airports slightly below similarly secured debt of an O&D facility. However, hubs that have demonstrated sufficient strength in the aforementioned conditions, have received ratings comparable to an O&D facility.

Competitive facilities within or near a service area are a concern, especially if they offer better service. Passengers are often quite willing to travel further on the ground for less expensive fares, more frequent air service, or larger aircraft. Increasingly, however, due to the increasing need for facilities and the slow pace that new or improved facilities are provided to meet demand, even those airports in close proximity with one another can serve separate and distinct segments of the market.

The carrier mix becomes increasingly important as any single airline's share grows. At an O&D facility, dependence on one or two carriers creates short-term vulnerability, as a strike can cripple an airport temporarily and have a significant impact on financial operations. This problem can be partially mitigated by legal provisions that provide ample reserve funds and coverage levels, midyear flexibility to raise rates, and the ability to recover deficiencies occurring in the prior year. While one or two dominant carriers may expose the airport to temporary problems, Standard & Poor's believes that the critical rating factor is still air traffic demand.

If demand exists and the routes prove relatively profitable, other carriers have historically filled the void over time to replace an airline that has reduced or cease operating out of an airport, diminishing the likelihood of prolonged loss of airport activity. However, in certain economic climates that affect the airline industry as whole, the ability of other carriers to take all or even a large portion of a failed carrier's traffic may be significantly limited—especially if much of the activity related to connecting passengers or serviced routes considered marginally profitable by the remaining or new airlines.

Use And Lease Agreements

The intent of use agreements between an airport and its carriers is twofold:

- To ensure a revenue stream providing for operating costs and debt service payments; and
- To establish certain procedures for rate setting and revenue collections.

Historically, long-term agreements also have indicated an air carrier's commitment to a particular market. There are two general categories, residual and compensatory, which differ primarily in terms of which party bears financial responsibility for revenue shortfalls, and, conversely, who benefits from any surplus. Standard & Poor's does not explicitly favor one methodology over another, but evaluates whether the specific agreement terms are appropriate for an airport's operating conditions.

Attitudes toward lease agreements have changed considerably since deregulation. Three trends are clear:

- For both carrier and airport, the desire to commit to long-term agreements has decreased;
- The traditional distinction between residual and compensatory rate-setting methodologies no longer exists; and
- A desire by airport operators to have more control over revenues, particularly nonairline revenues.

The greater degree of competition under deregulation and the risk of airline (tenant) bankruptcy are largely responsible for the shorter terms common in many of today's use agreements. Air carriers may not want to maintain service in an area generating intense interline competition or low yield. Conversely, airport operators want to avoid being saddled with unused terminal space resulting from tenant bankruptcy or routing changes.

Many agreements have been structured to combine the revenue protection offered by a residual approach with some sharing of excess revenues, as in a compensatory agreement. This latter provision allows for the build-up of discretionary reserves, which can be used to fund capital projects on a pay-as-you-go basis. Airports with agreements that generate annual debt service coverage, as opposed to rolling coverage, can provide more of a cushion above minimum coverage levels and be viewed as a credit strength. Similarly, the presence of a sophisticated concession program that results in significant nonairline revenue supporting capital development—and offsetting debt needs—will be viewed positively. Airports with compensatory ratemaking methodologies are generally demonstrate coverage levels in excess of typical rate covenant requirements of 1.25x debt service.

However, the presence of one type of rate-setting methodology does not necessarily result in a rating distinction. It is important to note that the presence of use agreements does not produce any specific level of airline usage at an airport. An air carrier's financial obligations under a use agreement are very small, compared with potential operating losses incurred by serving an airport with poor demand. Federal law restricts the application of airport-generated revenues for airport purposes generally. For instance, airport revenues cannot subsidize other public services unrelated to operating the airport, therefore, in many respects; even compensatory air-

ports can be viewed as residual-like enterprises with no outflows of cash to governments or investors.

In most instances an airline's decision about which airports to serve is based more on fare levels, load factors, and overall yields they expect in that market relative to other markets rather than airport charges. Collectively, airport costs typically constitute approximately 7% of an airline's total cost structure.

The primary value of use agreements lies in establishing procedures for operating the airport and methods for charging rates and fees. Once this framework is established, even if the use agreements expire, the same procedures of revenue collection and management likely will be used to run the facility and most airport operators retain the authority to impose fees by local ordinance if necessary.

While use agreements may provide an additional level of comfort if a particular airline ceases to operate or alters its routing structure, the inherent demand in the air traffic market remains the ultimate security for the bondholder. A strong market will continue to attract carriers to serve that demand, while even the strictest use agreement will not, in and of itself, ensure timely payment of debt service.

Legal Provisions

The legal protections afforded bondholders by the indenture, resolution, or other supporting security documents and the specific legal provisions pertaining to the business operations of the airport enterprise are important components of the rating analysis and can bear a direct influence on the outcome. These provisions are evaluated in the context of the credit strengths and weaknesses of the issuer.

Legal provisions alone cannot prevent operating and financial performance declines, interruptions of debt service payments, and the overall risk of credit deterioration. It is the underlying credit quality of an issuer that determines the degree of influence that legal provisions will bear on a bond's rating. For airport operators with a weak business and financial profile, more liberal legal provisions will often result in assigning a lower rating than if they had been more stringent. For an issuer with a strong business and financial profile, the presence of the very same more liberal legal provisions may not have an influence on the rating at that point in time. If their credit quality starts to deteriorate, however, it is likely that more liberal legal provisions will increase the potential for a downgrade.

The rate covenant and how it is calculated is reviewed to see the degree to which cash flow from operations is needed to cover fixed charges. Most senior lien airport revenue bonds have a rate covenant with a defined 1.25x minimum level of debt service coverage. However, how that 1.25x minimum coverage requirement is met can vary significantly. The strongest means of meeting this requirement is from operating cash flow with no addition to revenues from other sources (such as a coverage account as described below) or offsets to the debt service requirement from other revenue sources. Cash balances, other non-operating revenues (such as nonrecurring grant revenues), and reserve funds are sometimes included in the definition of revenues or otherwise allowed in the use of calculating the rate covenant, but these sources can be depleted and are not reliable ongoing revenue streams.

It is important that the definition of revenues providing coverage is limited to revenues from operations and that they are sufficient, 1x, to meet operating and debt service requirements ("sufficiency"). Other sources of revenues, such as passenger facility charges, are given greater credit in the calculation of debt service to the extent that they are pledged to bondholders.

Many airport credits meet their rate covenant requirement through the use of coverage accounts. While "rolling coverage" helps to keep user costs low, it is also important that the issuer limits the amount of reliance on coverage accounts and demonstrates sufficiency. The actual or forecasted use of these other sources to meet the debt service requirements could have negative ratings consequences. Other factors that weaken the rate covenant are legal provisions that give the issuer the ability to net debt service requirements. A frequent example is the provision that allows for the netting of passenger facility charges or grant revenues from debt service. This results in a more generous calculation of debt service coverage.

Standard & Poor's calculates debt service coverage and the issuer's ability to meet the rate covenant from an indenture perspective and from an operating cash flow perspective, which places greater emphasis on the ability to meet operating requirements from operating cash flow alone. While generating real coverage of debt service obligations from annual reoccurring cash flow provides for a stronger rate covenant, Standard & Poor's does not make a rating distinction based on the presence or absence of this provision alone. More dominant operators of transportation infrastructure with strong business positions and rate flexibility can have weaker rate covenants that allow for coverage accounts with no credit implications, all things being equal. The opposite is true of weaker operators.

The additional bonds test (ABT) usually is based on the rate covenant multiple and the calculation of the ABT's coverage requirements shares the inherent strengths and weaknesses of the rate covenant. The ABT is perhaps viewed as the primary legal factor in terms of affecting the rating as it outlines

the parameters under which future debt holders may claim on revenues on an equal basis as existing bondholders. Most ABTs in the airport sector allow for the use of projected revenues in meeting the typical 1.25x existing and future debt service obligations. This use of projected revenues is inherently weaker than a requirement to demonstrate coverage from existing cash flow.

Meeting the ABT requirement through the use of non-reoccurring cash flow items such as fund balances, coverage accounts, reserves, etc. are viewed as a credit weakness. Sometimes, the issuer may have the standard legal provisions with respect to the ABT and rate covenant, but operates at a much higher level and has committed to doing so by adopting a board policy to maintain the rate covenant and ABT at a higher multiple than required under the indenture or bond resolution. In these cases, the issuer's board policy may have a direct impact on the ratings outcome and can help bolster otherwise weak or adequate indenture provisions.

The flow of funds is always closely reviewed in rating airport revenue bonds, as it specifies the order and timing in which system revenues are used to meet the obligations created under the indenture or bond resolution. This establishes the relative lien position of the debt service payments in relation to other issuer obligations. Standard & Poor's also looks to see what reserve funds are established and the required reserve funding levels. Finally, a critical component to the flow of funds is an evaluation of the disposition of surplus funds. With a few exceptions, U.S. airports are restricted by federal law with regard to how airport-generated revenues may be applied, specifically prohibiting their use for non-airport purposes. Thus, taking airport-generated surpluses to support the general fund of a city or to make distributions to shareholders is not allowed. This allows U.S. airports to be viewed as having essentially a closed flow of funds.

The presence of reserve funds for debt service, operations and maintenance, or a capital improvement fund can be beneficial to an issuer. In particular, additional reserve funds that can be used to meet debt service requirements can also be viewed as an additional source of liquidity. Most airport revenue bonds have a debt service reserve fund that is funded based on IRS regulations at bond closing. Some bond resolutions or indentures give flexibility as to the timing of the debt service reserve fund, giving issuers the ability to issue debt and fund the reserve from net pledged revenues over time—usually no more than five years. However, the extent to which this ability is exercised could result in an incrementally lower rating depending on the inherent liquidity of the issuer and its overall credit quality. Funding of the debt service reserve requirement in an amount less than the IRS regulations could also have credit implications, especially for weaker credits or those that have experienced erosion in liquidity.

Other, more liberal debt service reserve requirements call for a "springing reserve," whereby net revenues are required to fund a reserve over a period of time if coverage drops below a predefined multiple. While this allows the issuer flexibility in funding the reserve requirement, it also is of limited value given that at the precise time when liquidity is a potential problem or is deteriorating the issuer is also under pressure to fund a reserve fund. A fully funded debt service reserve fund provides the most financial cushion to bondholders. Anything less than this requirement could have rating implications depending on the issuer's business and financial profile.

More recently, interest rate swap transactions are being entered into in conjunction with debt issuances in order to save on interest costs, increase financial flexibility, or to synthetically advance refund bond issuers. For the most part, swaps entered into by transportation issuers have been to lock in fixed interest rates on variable-rate debt issuances. Evaluation of the swaps includes the assignment of a "debt derivative profile" score. For transportation revenue bonds, it is important that the indenture cover these new types of transactions. Specifically, most indentures have provisions that allow swap interest payments to be made from the same revenue source that pays debt service.

In addition, termination payments are generally junior to the debt service obligations, which help to ensure that an early termination will not negatively affect the ability to meet debt service requirements. Some airports have termination payments that are on parity with debt service or payable from operations. The risk of termination can be mitigated if the issuer has good liquidity and strong revenue generating capabilities.

The goal of the legal provisions is to provide adequate protection to bondholders while allowing management sufficient flexibility to respond to changing business conditions. Where the indenture or bond resolution varies from the standard security and covenant provisions—either providing significant latitude or restrictions on the issuer—these provisions will be evaluated in context of the inherent credit quality of the issuer or can make a difference in the ratings outcome.

Finances

The analysis of airport financial operations varies, depending on its rate-setting approach. At a residual airport, the airlines collectively assume financial risk by ensuring payment of all airport costs not

offset by nonairline revenue sources. This obligation effectively guarantees certain revenues, but is only sufficient to satisfy rate covenant coverage requirements. Therefore, unlike a compensatory airport, the total revenues collected in any given year do not represent an accurate measure of the airport's true earnings capacity. In general, a residual airport will have lower, but more stable, debt service coverage than a compensatory airport, but the coverage level is less meaningful in a residual setting. In addition, the ability of the airport to generate significant levels of nonairline revenues can, in a residual agreement environment, reduce airline costs, or, under a compensatory agreement, create discretionary funds to finance facility improvements, thereby reducing overall debt requirements.

Standard & Poor's analysis of other financial conditions is similar regardless of rate-setting methodology. Among important factors are historical and projected revenue diversity, debt burden, and airline costs per enplanement. Analyzed on a pro forma basis, this last measure is particularly useful because it incorporates future debt service costs and indicates the degree to which concessions can offset airline costs. Truly discretionary sources of cash and overall cash position are also important as well as access to other sources of liquidity.

The presence of a fully funded debt service reserve is also significant, since pledged revenues may be affected by factors beyond management's control, such as construction delays, litigation, and weather. The need for other reserves varies with the project's nature and construction schedule.

In addition, the role played by other sources of financing for airport purposes must be noted. While it is uncommon, GO or excise tax supported debt paid from airport revenues on a subordinate basis provides a cushion to revenue bonds; GO debt paid from general tax sources is viewed as an equity contribution to an airport and strengthens the overall financial position. For instances that involve subordinated GO or excise tax supported debt paid from airport revenues, Standard & Poor's includes this debt when evaluating airport's debt burden and all-in debt service coverage.

An independent feasibility study is useful in estimating future airport utilization and financial prospects. The consultant typically projects future enplanements and aircraft operations and derives a financial forecast loading in anticipated capital requirements. Standard & Poor's evaluates the consultant's assumptions and methodologies to arrive at its own estimates. While Standard & Poor's may not always agree with such reports, they usually play an important role in the rating process.

Airport Information Requirements

Demand information

- Relevant passenger and airline activity statistics by fiscal and calendar year including origination/destination statistics; connecting passenger data, airline market share data, flight schedules, average fare information, recent passenger survey data.
- Service area economy and market studies.
- Passenger forecasts.

Financial information

- Audited financial statements (five years).
- Current operating budget.
- Airline rates and charges analysis.
- Summary of relevant Passenger Facility Charge programs and authorizations.
- Five year detailed capital improvement program and funding sources.

Other documentation

- Trust agreements, bond indentures and all supplemental indentures.
- Sample airline use and lease agreement.
- Financial feasibility reports detailing forecast revenues, expenses and capital requirements with resultant cost estimates.

Other Considerations

Despite their relative importance, demand, legal, and financial factors are not the only elements examined in rating airport revenue bonds. The size, structure and purpose of the financing program and need for additional debt financing are also important. Considerations such as the influence of local politics, management's experience with large construction projects, and the presence of budget controls play significant roles.

Airport revenue bonds are different from other revenue bonds because of the presence of a private intermediary—-the airlines—-between the users of the service and the entity that pays debt service. However, strong airport demand, solid legal provisions, and prudent management of the airport's financial operations can alleviate some of the problems introduced by airline intermediaries and their volatile industry. ■

Stand-Alone Passenger Facility Charge Debt

Leveraging passenger facility charges (PFCs) has proven to be an effective tool as airports look to maximize their debt-issuing capacity or limit the effect of capital improvements on the airline-supported rate base. With proper structuring and strong credit fundamentals, stand-alone PFCs or revenue bonds where the only security is the pledge of PFCs can receive solid investment-grade ratings. The PFC program is now an established and critical source of capital funding at U.S. airports. Stand-alone PFC bonds have some fundamental differences compared with general airport revenue bonds. These include:

- The vulnerability of a fixed-rate revenue stream and debt service coverage to declines in enplaned passengers attributable to a variety of reasons, including economic downturns, rising air fares, aviation fuel price increases, or natural disasters;
- Other events that could interrupt pledged revenue flow, such as an air carrier bankruptcy; and
- The ability of the Secretary of the U.S. Department of Transportation to terminate the airport's power to levy the PFC.

Airport management can reduce these risks through compliance with the FAA's record of decision and its "informal resolution process," proper oversight, strong management of PFC programs, and structural enhancements to the debt transaction that provide ample coverage of debt service from pledged PFC revenues. Additionally, upon request, the FAA includes language in their record of decision for PFC stand-alone transactions, which indicates the FAA's intent, in the case of a violation, to provide a five-year cure period prior to termination. Most important is compliance with current and future provisions of the Aviation Safety and Capacity Expansion Act of 1990 and all implementing federal regulations pertaining to PFCs. These provisions include those governing use and administration of PFC revenues, as well as assurances required to prevent termination by the Department of Transportation.

Standard & Poor's Ratings Services also requires management to agree to provide notification if revenues from collections decline or are disrupted, or if it is notified by the FAA of a potential violation of federal regulations. With certain other legal assurances, the issuer can keep the lien open and use PFC revenues on a pay-as-you-go basis.

With the stand-alone PFC pledge, Standard & Poor's analysis will focus on the traditional credit factors that support the airport's general airport revenue bond rating with a special emphasis on passenger demand, debt service coverage, airport management, the airport's PFC program, legal and structural provisions, and federal agreements—all of which are important in addressing the inherent risks of the PFC program.

Traffic Analysis

Standard & Poor's examines the economic underpinnings of the airport's service area. In most cases, a distinction is made between the added vulnerability for connecting versus origin and destination (O&D) airports, with higher coverage requirements for airports without a strong and diversified O&D base. Careful consideration is given to traffic performance through national and local economic cycles, as well as susceptibility to fluctuations caused by factors affecting the airline industry. Traffic variations will be reviewed in the context of these circumstances, as well as changes attributable to airline service decisions and growth in the number of O&D passengers.

Federal regulations allow connecting hubs to collect a disproportionate share of the PFC revenues. However, if connecting traffic declines, connecting hub airports stand to lose a greater amount of PFC revenue than if a similar level of traffic declined at an airport with a greater proportion of O&D passengers. Most of this concern is reflected in the general airport revenue bond rating, which considers the concentration of connecting passengers and airline market share.

Other important traffic fundamentals are diversity in airlines and potential competition from other facilities. Low operating costs and favorable airline relations are credit strengths.

Because pledged revenues are a direct function of traffic levels and cannot be adjusted to meet debt service obligations, passenger forecasts take on a new significance with PFC-backed bonds. While the airport already must have traffic levels that generate revenues in excess of future PFC debt needs,

projections must be justified and consistent with historical trends.

Faster-than-expected growth can result in the airport reaching its maximum PFC authorization level before its bonds mature. This requires management to create a debt structure that allows for early redemptions or escrow of excess annual collections. Simultaneously, Standard & Poor's expects that airport management would apply for further approval to extend its authority to collect PFCs.

Another factor in forecasting PFC revenues is the level of PFC-eligible passengers assumed by airport management. Under federal statute, certain classes of passengers cannot be assessed a PFC, including travelers flying on tickets acquired with frequent flyer coupons, nonrevenue passengers, or those who have already paid more PFCs than permitted. In addition, airport sponsors may exclude a class of passengers if they represent less than 1% of enplaned passengers. Also, according to statute, the air carriers can keep $0.11 per PFC to compensate for the administrative costs of collecting and remitting PFC revenues to the airport sponsor.

Airport management should be able to demonstrate this mix, and forecast revenues should reflect only eligible PFC passengers and net out airlines' collection fees.

Debt Service Coverage

Debt service coverage is an important determinant of credit quality since it reveals how much revenue can decline before an airport cannot pay its debt service. Standard & Poor's considers PFC revenue more vulnerable to airline shifts or financial difficulties at airports with one airline dominating the market and connecting enplanements. To mitigate this concern coverage of PFC debt service by PFC revenues should be higher than the standard coverage requirement at O&D airports. For hubs concentrated in one or two airlines, stronger credits demonstrate annual coverage of PFC debt service by PFC revenues is between 1.50x-2.00x, while O&D airports generally have between 1.35x-1.75x at a minimum. In practice, most airports prudently maintain stronger coverage levels from leveraging only a portion of the PFC stream they receive. Because of the fixed-rate nature of PFCs annual debt service is typically level over the life of the bonds. Standard & Poor's analyzes lower coverage for structures that include a subordinate lien on net airport revenues.

Airport Management

Key to the stand-alone PFC bond is airport management's ability to manage the PFC project and collection process, and to quickly resolve any questions regarding the proper use of PFCs. Standard & Poor's reviews the airport sponsor's PFC program to evaluate collection, monitoring, and administrative systems, as well as the willingness and ability to comply with the FAA's record of decision, which specifies approved projects. Additionally, management should demonstrate air carrier compliance with the PFC reporting and remittance procedures outlined in federal regulations. Airlines are required to remit all revenues to the airport monthly and within 30 days of the previous reporting period. Carriers are required to maintain financial management of PFC revenues and submit quarterly reports. One of the proposed amendments to the PFC program in 2006 is requiring protected airlines reorganizing under Chapter 11 to submit a monthly PFC account statement and a quarterly report to the FAA.

The type of project to be financed and management's experience with capital projects are important credit factors. To the extent that projects are associated with capacity enhancements, are clearly distinct from other projects, and are manageable and achievable, the potential for misuse of PFC revenues and possible termination is limited. Although in most instances, successful completion of a PFC project bears no relation to the revenues required to service the debt, Standard & Poor's will evaluate how well airport management has managed PFC-eligible projects in the past, or how frequently the airport has had to cure violations through the informal resolution process. Project delays that result in scope changes or cost overruns that require additional PFC, lowering coverage, could be a rating concern.

Legal Provisions

The legal provisions are important credit factors—specifically, indenture covenants to comply with current and future provisions of the Aviation Safety & Capacity Expansion Act of 1990; all implementing federal regulations governing use and administration of PFC revenues; and all assurances required to prevent termination by the U.S. Department of Transportation. Provisions outlined include those governing use and administration of PFC revenues.

Specific provisions of these covenants include:

- Obtaining FAA approval for all projects;
- Compliance with the National Environmental Policy Act of 1988 and the Airport Noise and Capacity Act of 1990;
- Not signing long-term leases with any air carrier for PFC-funded facilities;
- Excluding PFCs from general airport revenues for purposes of setting airline fees and charges;
- Terminating leases of facilities financed with PFC revenues if the facility is not fully utilized

and not available to other carriers if requested by management;
- Not including the depreciation or capital costs of PFC-financed project in the airline rate base; and
- Maintaining records and submitting reports in accordance with federal regulations.

In addition, Standard & Poor's looks to specific covenants, including the provision of all reports to ensure compliance, investment restrictions, a 1.05x sufficiency covenant requirement to prevent airport from over committing PFCs, and immediate notification of any delays in the collection of PFCs, or upon contact by the FAA regarding possible violations.

Open Lien Versus Closed Lien

How PFC revenues collected in excess of annual debt service requirements are applied can affect the rating. The strongest structure is one in which the lien is closed, and surplus PFCs are used to redeem debt. This reduces the average maturity, thus minimizing the uncertainties associated with long-term events.

The closed-lien model is not the only option available to airports with strong fundamental credit characteristics. The uncertain nature of PFC revenue collection and the restrictions under which the authority to levy PFCs are granted by the FAA can present a structural problem; clearly, the airport sponsor would not want to be in a position whereby, because PFC revenues came in faster than expected and excesses were spent on eligible projects, the authorized amount was reached before meeting all the PFC debt service requirements.

However, it is possible to keep the lien open and use excess PFCs for other eligible projects, provided that certain legal covenants are incorporated into the indenture. Essentially, the airport should covenant to review quarterly—or, at a minimum, annually—the amount of PFC revenues available under the authorization and not spend PFCs outside the bond indenture if it would cause the remaining amount authorized to be collected to fall below the remaining cumulative PFC debt service or amounts needed to redeem bonds. To guard against this the indenture will typically include a 1.05x sufficiency covenant for the airport to adhere to. Funds restricted and held could be used to call debt or establish an escrow to pay debt service as per the originally scheduled amortization after the revenue limit has been reached.

If an airport demonstrates strong fundamental credit characteristics, structural provisions—such as early redemption—could permit scheduled debt service to extend beyond the date at which PFCs are authorized.

If the lien is left open, the additional bonds test typically mirrors the coverage outlined above and historical coverage of future debt service requirements of 1.35x-1.75x for O&D airports and 1.50x-2x for connecting hubs is characteristic.

Finally, Standard & Poor's will accept a very limited element of projected PFC revenues eligible to meet the additional bond test. Essentially, projected PFC revenues can be adjusted to reflect changes in the PFC amount or reasonable projections of PFC revenues based on a consultant's report. However, the additional bonds test multiple is typically met in every year of the forecast, beginning with the subsequent year, therefore limiting the projected element to one year.

FAA Record of Decision

Critical to the rating is the FAA's record of decision or final agency decision, signed by airport management, which is the official approval document and sets forth projects that can be funded with PFCs, as well as the total dollar amount that can be collected. For PFC stand-alone transactions, upon request, the FAA includes language in the record that outlines the "informal resolution process" to be followed, before commencement of formal FAA revocation procedures, for the purposes of resolving potential compliance federal regulations problems and/or suspected misuse of PFC revenues. Under the record, the airport and the FAA must agree to recognize the FAA as a third-party beneficiary under the Indenture of Trust, which permits the FAA to take actions redirecting the flow of PFC revenues in the event of suspected violations. The informal resolution process could extend up to 360 days before commencement of the formal revocation process, which could last an additional 270 to 360 days. Any violation that has occurred since the inception of the PFC Program has been resolved through the informal resolution process. In most cases the violation was a project not being implemented in a timely fashion. Corrective action taken by public agencies in these instances was either revising the project schedule and adhering to it or deleting the project. Given these protracted notification periods and strong management, termination is unlikely.

Airline Bankruptcy

One weakness associated with the collection of PFC revenues is the fact that PFCs are collected and held by airlines and remitted to airports on a monthly basis. Accordingly, there are risks associated with interruption in the process due to an airline bankruptcy or investment loss by the airline before remittance to the airport. To date this has not proved to be a credit concern. In general, exposure to this risk should be limited by proper collection and administration procedures, reducing the amount potentially owed by the remitting carrier to 30 to 60 days of PFC receivables, depending upon

when the collection occurred. A fully funded debt service reserve also provides security if delays or timing issues with regard to debt service payment are significant. Possessing a relatively diverse airline carrier mix also mitigates airline bankruptcy risk.

Additionally, credit risk exposure to the airlines have been limited by changes to law to make clear that collected PFCs are indeed held by airlines and due to the appropriate airport operators. Statutory requirements under current aviation authorization legislation (Public Law 108—176—Dec. 12, 2003; Vision 100—Century Of Aviation Reauthorization Act) provide for airlines in bankruptcy to segregate PFC revenue into a separate corporate account ("PFC Account"), preventing the airline in bankruptcy from commingling future PFCs with corporate revenues during bankruptcy proceedings; and not pledging PFCs as collateral to any third party.

FAA Withdrawal

Even if properly structured, there is always the risk that the FAA will withdraw PFC revenues, based on improper use of the funds. If PFC revenues were withdrawn, an analysis would be conducted to determine the effect on the public agency's general airport revenue bond rating in cases where it is a double-barrel structure (see below). If a large amount of debt is supported by the PFC, a withdrawal of the right to levy the fee would lead to credit concerns. Any such action also would call into question the public entity's management capabilities.

Double Barrel

For many airport issuers, double-barrel bonds that have a first lien on PFCs and an additional subordinate lien on net airport revenues will remain an attractive option when exploring the issuance of long-term debt. The advantage of this structure is that it eliminates the two major risks attributable to stand-alone PFC bonds; that is, lack of rate-setting ability to cover revenue declines and termination risk. While there may or may not be a rating distinction between double-barrel and stand-alone PFC bonds, based on legal provisions and protections, each approach is a viable option, and the final structure that management chooses will depend on their individual circumstances.

Standard & Poor's would expect an airport to manage its double-barrel PFC program similarly to a stand-alone program and ensure continued receipt of PFCs. This structure would allow lower coverage requirements and management flexibility with respect to PFC authorization and collection. The double-barrel pledge may be an option for issuers who otherwise exhibit solid credit fundamentals, but may show some exposure because of airline concentration or higher levels of connecting passengers.

The limitation of double-barrel bonds is that they often require majority-in-interest support of the airlines, because, ultimately, airline rates and charges would have to be increased to cover PFC debt service if authorization were revoked.

Airport operators may, pursuant to Vision 100, use PFCs for making payments for debt service on indebtedness incurred to finance a project at the airport that is not an eligible airport-related project if the Secretary determines that such use is necessary due to the financial need of the airport. Regardless of structure, Standard & Poor's will evaluate airport coverage of all debt from all available revenues, including PFCs. Those facilities that provide higher margins will generally, other things being equal, have higher ratings. ■

Airport Multi-Tenant Special Facilities Bonds

Increased involvement of airports in financing special facilities has led Standard & Poor's Ratings Services to develop criteria for rating multi-tenant special-facility debt. The criteria apply to unique projects and facilities and permit the analysis to scrutinize and give weight to the market demand, rather than defer entirely to the tenants' credit profile. An emphasis on project essentiality and structural features that enhance bondholder protections could result in the transaction receiving a higher rating than that of the participating airlines, on a case-by-case basis. However, there are inherent limits to the degree of credit elevation above that of the airlines' rating. Given the credit characteristics of the airlines, it is likely that many of these project ratings will be below investment-grade. In addition, single-tenant airport special facility bonds will not be rated higher than the tenant's corporate rating.

Airport Characteristics

Airports considered for these ratings must be among the strongest and largest in the country. A

strong preference will exist for facilities supporting origin and destination (O&D) traffic, rather than connecting hubs. Only large hubs, as defined by the FAA, will generally be considered. Projects at large hubs should represent key additions to the air travel system, which would enhance the likelihood of continued demand for these facilities.

Airport management must be experienced and have a clear understanding of its rights and privileges under these arrangements.

An increasing enplanement and aircraft operation trend will be considered a strong positive factor. Cargo growth will be examined closely for the providing carrier, as well as the rate of growth, if a cargo facility is being evaluated. Increased activity will place a premium on the value of all airport-related projects, and Standard & Poor's views these as possessing increased protection.

Project Essentiality

Elements that reflect essentiality include project type, inherent demand, strong support of airport management, and importance to the operation of the airport facility.

Although many different types of projects have been financed through special facility bonds, projects that fit most easily, from a credit perspective fall into the following categories:

- Terminal space;
- Fueling facilities; and
- Cargo facilities and aircraft hangers.

Projects at airports that are designed to satisfy demand that significantly exceeds currently available facilities, and where there is limited ability to provide adequate locations to meet this demand are typically more creditworthy. Unmet demand over and above the completed project will ensure that a new tenant for the facility can be found, if needed. Standard & Poor's considers projects that cannot be located off the airport more essential than those that can. The most creditworthy projects are for terminal and fuel hydrant facilities. Inherent demand for the project is the most important rating factor. Typical questions asked include: How many air carriers want projects of this type? Are all existing facilities fully utilized? In addition, a multi-tenant facility with a diverse mix of tenants is superior to a project serving fewer tenants.

Airport involvement is critical to this approach. Airport management must be involved in the design of the facility, and the project should fit in the overall master plan. In addition, Standard & Poor's evaluates the specific nature of the facility. The more tailored it is for one airline's needs, the more difficult it may be to relet.

Standard & Poor's also considers the percentage represented by the new project of the total available space for this purpose. For example, a new cargo facility that is only 10% of all existing space will be deemed weaker than one that represents 50%. This fact must be viewed in the context of the amount of other space available for additional facilities of this type and the potential for additional facilities and future competition for the project.

Finally, the security backing these transactions is project specific and, therefore, adequate insurance protection must be provided. This would include, but not necessarily be limited to, property insurance at full replacement value; title insurance to eliminate concerns over ownership; and business interruption insurance to mitigate concerns about meeting debt service obligations due to temporary interruptions in operations.

Legal Factors

Although legal arrangements will vary from project to project, in a typical financing Standard & Poor's reviews transaction documents and opinions to assess the bankruptcy-remoteness of the issuer/lessor, contractual terms governing the use of the facility by the air carrier and legal protections available to the airport in the event of an air carrier's default. Among other factors, this review assesses the risks that an air carrier in a reorganization bankruptcy proceeding may be able to remain in possession of its portion of the facility while not paying rent or otherwise performing on its related tenant obligations, that the air carrier may be able to recover or stay the application of funds in the transaction, and that the airport may be prevented from dispossessing the defaulting air carrier and reletting its space on a timely basis.

Recent air carrier bankruptcies have shown that air carrier challenges to the characterization of leasing structures, attempts to avoid pre-petition payments, and attempts to recover unapplied funds or reserves, may disrupt expected cash flows and delay or frustrate the exercise of remedies. Standard & Poor's believes that the likelihood of an air carrier in bankruptcy taking these or similar actions and the adverse affect of the actions on a project would be greatest where the project's credit risk is concentrated in a predominant or single tenant.

In a multi-tenant special facility financing, credit risk diversification may somewhat reduce the likelihood of air carrier challenges that adversely affect the financing. Even in the bankruptcy of the lowest rated key tenant, however, the air carrier is likely to take some of the previously discussed actions that challenge the weakest aspects of the structure. As a result, Standard & Poor's assessment of the legal and structural risks will be an important element of the rating analysis. Standard & Poor's considers a number of other factors in its rating analysis of

these facilities, including other factors discussed in this article. For a multi-tenant special facility financing that has a higher level of legal and structural risks, however, Standard & Poor's may not be able to elevate the rating above the corporate credit rating of the lowest rated key tenant.

Most multi-tenant special facility financings have been based on a lease structure with a special-purpose entity as the lessor and issuer of the rated securities and the airline operators as lessees. Standard & Poor's reviews the ownership, organizational structure and operating constraints of the lessor in light of the special-purpose entity criteria applicable to the entity to assess the risk that the bankruptcy of any relevant transaction participant may detrimentally affect the issuer's full and timely payment of the rated securities in accordance with their terms.

Typically, in a multi-tenant special facility financing, the contractual terms governing the use of an air carrier's portion of the facility are in a lease agreement between the air carrier and the lessor. Although lease provisions vary depending on the transaction, leases that are more supportive of higher ratings typically include provisions to keep utilization of the facility at a level sufficient to support payments on the rated securities. These provisions would include, for example, minimum utilization standards that the tenant must attain or the airport would have the right to relet the space, thereby ensuring the continued optimal use of the facility. The airport, or landlord, would be allowed to relet space within 90 days of any default and remove a tenant from occupancy ("use-it-or-lose-it" provisions). Stronger provisions would provide for reletting within a shorter interval after a default. The airport itself would have the right to use its best efforts to relet the space of defaulted tenants. If a third party, such as a developer, is involved in the lease arrangements, the lease would preserve the airport's right to relet the space to the exclusion of the third party and otherwise to protect against the potential bankruptcy of this intermediary. The term of the lease would be at least as long as the term of the rated securities to prevent financially viable airlines from walking away from their obligations while the securities are outstanding.

Other transaction terms that are more supportive of higher ratings would include debt maturities of no more than 20 years, debt service reserves equal to maximum annual debt service, limiting or prohibiting additional debt issuances at the same level of priority, staggered lease and debt service payment dates, and a charge-back to the tenants of all costs associated with the project or sufficient debt service coverage levels to cover operating costs.

Air Carriers

Diversity of the air carriers involved is a strength in these financings. Ideally, this type of debt is issued to provide space for a group of airlines, not for one or two tenants. In addition, the relative credit strength of the air carriers involved will be considered. The credit rating in a special facility transaction will be highly correlated to the underlying corporate credit ratings of the tenant airlines.

Unrated airlines with significant stakes in the project must undergo some review by Standard & Poor's to assess their creditworthiness. Carriers with higher Standard & Poor's ratings will be viewed most positively, as will those that are using the facility to support O&D traffic. An important aspect to the rating is understanding the relative importance of the project within the air carrier's existing system and strategy.

Financial Factors

Standard & Poor's will evaluate projected cash flow surrounding all facilities. Depending on the project, Standard & Poor's may require sensitivity analyses that assume various vacancy levels. Projects that can withstand lower use rates or occupancy levels will receive higher ratings. These projections should project lease revenues adjusted under conservative assumptions, although inflationary increases can be assumed if allowed under the lease documents. Interest income should be estimated at low levels, and airline payments should be as independent as possible from the activity levels experienced solely at the special facility. Expenses should be estimated using reasonable inflationary increases. Coverage on a projected basis should be a minimum of 1.50x for the strongest of projects, with higher coverage levels given additional positive weight. ■

Port Facilities Revenue Bonds

In evaluating port revenue bonds for publicly operated maritime facilities, Standard & Poor's Ratings Services considers several key variables, such as competition and industry factors, including regulation; financial performance; operations; management; and legal protections afforded bondholders. Ultimately, ports derive their financial strength from their overall business position as provider of maritime infrastructure.

Operationally, port cargo and container volumes generally move with broader economic variables and trade trends, which have been quite strong, benefiting all ports generally and larger, load centering ports in particular. Most port operators do not face new competition due to the tremendous capital investment and transportation infrastructure requirements, and environmental and regulatory restrictions. Their competitive risk is the loss of cargo or incremental growth to other markets. However, through sound planning, budgeting, and marketing, a port can effectively mitigate some competitive risks.

Ports are affected by external factors that remain largely outside of management's control. Beyond the economics of goods movement, political and competitive risks, as well as the unpredictable character of uninsurable natural hazards are all variables that can negatively impact a port's competitive position and financial outlook. Concentration in the tenant mix contributing to port revenues and the credit risk exposure to the financial condition of major tenants is also an exogenous factor that can directly influence port finances.

To an important extent, these factors have prevented port bond ratings from attaining the 'AAA' rating category, and make the 'AA' rating category difficult to achieve. The highest rated entities have diverse demand, a very strong competitive position, sound finances and oversight, and strong legal covenants combined with largely steadily growing volume trends. Reliance on a very few products, tenants or a few trading partners, combined with historic volume trends exhibiting variability usually prevents ratings from rising above the 'BBB' rating category.

Competition And Industry Factors

In first evaluating a port's credit strengths, Standard & Poor's analyzes its competitive position and those broader maritime industry and regulatory factors that will likely influence future financial performance. Competition is examined both in the context of other ports (regionally or globally) as well as other modes that provide competition for certain high value cargo imports or exports. The port's relative position to competitors is reviewed based on data pertaining to commodity volumes, value, and the relative importance of each commodity type to total port revenues. The establishment of dominant cargo centers has not eliminated competition, and several smaller and larger ports have survived by finding a specialty niche in a certain single commodity type or cargo-handling methods. Heavy dependence on a few products to generate port revenues exposes a facility more to the vagaries of supply and demand.

Standard & Poor's also reviews the terms of contractual agreements with shipping lines, port tenants, and shippers, or consignees. While tariff structures and other port charges including dockage and wharfage may not be significantly different (or governed by maritime associations), the overall port rate structure is examined, again with an eye toward overall competitive position. Feasibility analyses and/or market studies, particularly those prepared when the port operator is undertaking capital improvements and incurring debt to provide facilities or related infrastructure, can be an important source of operational data, in addition to pro forma projections they may provide. All ports are exposed to the broader industry trends affecting the shipping industry as well as regulatory and environmental issues affecting operations.

The globalization of trade and manufacturing commensurate with the growth in the shipping and handling of maritime cargo containers continues to profoundly affect the way port operators conduct their business. Transportation economics, just-in-time inventory, outsourcing, growth in consumer products and other factors have all fed the increase in containerization. This, along with the increasing size of ocean-going vessels and the efforts of major steamship lines to develop a seamless intermodal movement of goods through cooperation with railroads and trucking firms, has worked to diminish the influence of ports' pricing of services as a determinant in the routing of cargo. Instead, the

increased focus on supply chain logistics and time-to-market has accentuated the importance of ports to provide efficient movement of goods from vessels to the dock to intermodal facilities to rail and truck lines. The capital investments required to improve the flow of goods at the lowest cost is integral to the success of ports.

Shipping lines, with their substantial investment in larger vessels, and the higher costs associated with deployment and idling of these ships, have as a main priority making as few ports of call as possible, with rapid cargo loading and unloading. To this end, increasingly, they are drawn to large, modern facilities with state-of-the-art loading and storage capabilities, and those with efficient rail and truck links, capable of transporting rapidly growing cargo volumes to distant markets. As major shipping lines demand these services, port operators are challenged to decide whether to provide such costly facilities or risk losing an important part of this lucrative trade.

Generally, the larger ports, servicing a sizable local or regional market, have been the major beneficiaries of these trends. Their size better enables them, or their tenants, to finance costly dockside equipment and to provide extensive marshaling yards. The coalition of shipping lines and railroads has produced a greater concentration of cargo handling among a handful of these larger ports. Regional load centers provide a single destination—to or from—which containers can be transported overland to major internal markets. Because of the importance of their own primary markets, the larger ports usually have served historically as the first, or last, ports of call. This has become an increasingly important factor as shipping lines try to reduce the number of calls.

Many smaller to mid-sized ports are often the beneficiaries of growth in the overall trade, capturing commodities or general categories of cargo crowded out of larger ports. However, many smaller ports are dominated by a few larger tenants or types of cargo and remain relatively static, serving local or regional economies.

Port activity is affected by political and economic policies, natural hazards and the exposure to cargo interruptions from terrorist-related incidents. For some external factors, the risks to port operations are mitigated by diversity. Federal policies concerning foreign trade, currency, and agriculture can have a significant impact on the amount of cargo flowing through a specific port. Those ports that have developed a broad array of trading partners, commodities handled, and a stable relationship with major shipping lines should be well positioned to ride out any temporary, or cyclical, disruption in the flow of one or two products.

Since 2001, port security and the financing of improvements related to perimeter boundaries and monitoring systems have become more important. Port operating expenses and personnel costs have grown and federal funding sources have been generally inadequate relative to the needs. The potential for additional security improvements represents a potential drain on port finances to the extent they are not accompanied by additional revenue sources either levied by port operators or in the form of federal assistance.

Management

The organizational structures of ports range from independent authorities to city departments and state agencies. Organization is important because it identifies the amount of managerial authority entrusted to a port's staff. Complete authority, or autonomy, permits senior management to make business decisions based on port operations rather than political sensitivities. Every port management, even an autonomous one, is constantly challenged by the often conflicting goals of spurring economic development within its regions, while attempting to achieve self-support or profitability. The composition of the boards of directors and executives can illustrate the amount of local support for the facility and its importance to the local economy. Since a port's board and executives normally face a number of complex challenges, their method of selection and their experience are ascertained.

Financial Operations

In assessing a port's financial position, Standard & Poor's typically analyzes five years of audited financial statements, as well as revenue and expense projections. Year-to-year revenue and expenditure trends are examined. Issues of interest include the volatility and relative growth rates of each. Following 2001, many ports experienced significant increases in security costs, both voluntary and federally mandated. As funding was not provided to ports for many security requirements, ports reduced expenses in other areas. Costs of insurance and employee benefits have also increased significantly in recent years. Maintaining a sustainable cost structure in the face of rapidly increasing expenses has proven a significant test for management at most ports. In addition to current expenses, Standard & Poor's also examines the extent to which future employee pension and healthcare benefit liabilities are funded.

Coverage of annual debt service is examined, on both a historic and projected basis. Because ports face exposure to such short-term risks as economic fluctuations, competition, tenant credit risk, labor, operating and event risk and natural hazards,

healthy coverage of annual debt service by net pledged revenue is a very important rating consideration. Minimum historic or projected coverage levels are carefully considered. A commitment by port management to maintain a certain minimum level of coverage can be an important credit strength. Pro forma coverage of maximum annual debt service (MADS) is frequently considered. Other leverage measures, such as debt to net revenue, may also be considered.

Like coverage of annual debt service, liquidity also provides ports with a cushion against short-term volatility in revenue. Unrestricted cash and investments are considered, often measured in days' cash relative to annual operating expenses, and as a percentage of outstanding debt. Restricted operating reserves are also considered. As with debt service coverage, a commitment by port management to maintain a certain minimum level of liquidity can be an important credit strength. A port's exposure to swaps and variable rate debt is also considered, typically measured with Standard & Poor's Debt Derivative Profile score.

Operator ports typically sign contracts with shipping companies and receive income based on cargo throughput. Landlord ports typically lease property to shipping companies and receive fixed lease income. Although both models provide tradeoffs between risk and operating flexibility, operator ports face more volume risk in the short term than do landlord ports. For both types of port, Standard & Poor's considers customer and tenant concentration, the length of contracts and leases and any minimum annual guarantees.

Capital Budget

An important part of the analysis involves examination of planned capital expenditures. The types of facilities required in the future, their costs, and planned financing are all important. An independent feasibility study by an experienced consultant is helpful. Some ports may not be able to attract additional business without first building competitive facilities. However, prior commitments from users are more likely to ensure financial stability than building on speculation.

The amount of future debt planned is an important rating factor, since a heavy reliance on new debt can weaken an issuer's financial position. Although most rated ports have moderate debt burdens, the possibility of substantial future borrowing exists. The ability of a port to finance a significant portion of the capital budget with surplus earnings is a very positive rating factor. Regardless of how facilities are financed, a port's tariffs are examined to determine whether facilities will be competitive after project completion.

Legal Provisions

Most port revenue bond issues are secured by a pledge of net revenues. Standard & Poor's does not give added weight to a gross revenue pledge, since a port that cannot pay debt service and operating expenses is not likely to remain an ongoing entity. In addition to net port revenues, some issuers pledge net airport revenues or excise taxes. To the extent that such diversions significantly enhance coverage levels, they could raise the credit rating. Issuance of port GO debt, where lawful, also may enhance the revenue bond rating by reducing the amount of revenue bonds needed. The use of property taxes to pay operation and maintenance, or capital expenses, is a favorable development, since it frees an equivalent amount of port revenues to cover debt service.

The lien position of pledged revenues can be important. Issues with a first lien on the pledged security can receive higher ratings than subordinate lien debt since they are not as exposed to coverage dilution, but combined coverage levels and the relative proportion of senior and subordinate lien debt can also be rating factors. Legal covenants vary in strength and are appraised within the context of each port. Rate covenants typically are about 1.2x annual debt service. The debt service reserve requirements of issues generally call for a reserve equal to maximum annual or average annual debt service, or 10% of bond proceeds. The strongest provision requires a reserve equal to maximum annual debt service, and fully funded from bond proceeds. Most additional bonds tests call for coverage of debt service on outstanding and proposed debt in the 1.2x-1.5x range. Tests that include only historical revenues are stronger than those that permit the inclusion of future earnings. ■

Toll Road And Bridge Revenue Bonds

The heavy costs associated with construction and maintenance of roadways and bridges normally require large amounts of debt, even for publicly owned toll roads. The sizable debt burden, combined with the presence of competition, the potential for fuel shortages, toll sensitivity, and shifting demographic and economic factors, make it difficult for a revenue bond issue secured solely by tolls to receive a Standard & Poor's Ratings Services rating above the 'A' category. However, several well-established toll facilities, particularly toll bridges with limited competition and U.S. state toll authorities with very stable demand, low rates and well-defined capital programs now maintain ratings in the 'AA' category. For privately owned toll roads that benefit from very long-term concessions, but are highly leveraged, high investment-grade category ratings are difficult to achieve given the high debt levels relative to cash flow generation, combined with the ongoing pressures to distribute equity to shareholders.

Traffic Demand

Toll road ratings focus on traffic demand as the most essential ingredient for a financially successful operation. For "green field" or "start-up projects" construction risk also demands significant analysis. Strong demand for a toll facility is vital to its successful operation and the ability of the facility to generate toll revenues. Most U.S. toll roads have been, and will be developed in heavily traveled corridors with a demonstrated need to relieve traffic congestion and reduced travel time for motorists. However, in some cases, demand for improved service has not been strong enough or developed fast enough to generate revenues sufficient to cover the operation and maintenance expenditures of the facility, as well as debt service. This is particularly true for new toll roads, expansions or extensions built in anticipation of future development. In other instances, the healthy, vibrant economic base that had supported the system deteriorated, resulting in flat or declining traffic flow.

Typical questions to pose when evaluating these projects include:

- Is the project a new road or bridge to ease congestion on overcrowded existing roads, or is it designed to spur or in expectation of new development?
- What is the composition of vehicles between commercial and private vehicles as well as trip purpose?
- Will all access roads or connecting roads not under direct control of the project team be in place prior to the completion of the project? Ultimately, how do the timesavings provided by the toll facility relate to the toll structure?

Answers to these questions begin to identify the various strengths and weaknesses of a project and what information will be needed for Standard & Poor's analysis. Toward this end, Standard & Poor's expects a detailed feasibility study reviewing the underlying economic underpinnings and project-specific issues that result in the projected traffic and revenue forecasts. The forecasts should clearly state all assumptions used and extend through the debt offerings repayment term. In some instances, Standard & Poor's may request an independent evaluation of the traffic report (should the feasibility report be generated by the project sponsor) to verify and collaborate the reasonableness of assumptions and methodologies applied.

Evaluating the economic strength and diversity of the toll road's region is integral to the rating process. Standard & Poor's will analyze the region's wealth, income, and employment indicators, as well as a host of other factors. While a sound and growing economic base usually ensures a high level of commercial and business-related travel, the level of disposable personal income has a direct bearing on the volume of discretionary and recreational trips. Commuter or short-haul traffic, indicated by such measures as average trip length, largely depends on local economic conditions. However, those toll facilities directly connected with other major thoroughfares are shielded to an important degree from local economic conditions.

An examination of total traffic trends is not sufficient. The nature and composition of that travel, as well as its vulnerability to business cycles, changes in fuel prices, and toll elasticity are also critical. While commercial traffic serves as a stabilizing force, most successful toll roads or bridges have a good balance between commercial and private-vehicle trips. Commercial traffic is less sensitive to toll increases than private-sector traffic since, for all but the marginal carriers, additional costs can eventually be passed on to customers. Fuel prices have, on

an inflation-adjusted basis, remained very low and, historically, price increases have not had a dramatic effect on travel or gasoline consumption trends. However, the long-term effects of significantly higher oil prices, on a real basis, on traffic and demand levels are unknown.

Within the private travel sector, a breakdown of nondiscretionary (business) and discretionary (recreational) trips is useful. Business-related trips, while obviously sensitive to levels of economic activity, tend to be less so than recreational travel. As a general rule, a diverse traffic mix cushions the impact of a decline in any one segment.

Demand is affected by demographic characteristics and local economic performance. However, for start-up toll roads, Standard & Poor's also assesses the overall acceptance of tolls in the region as the economy in the area may be vibrant but the road users must also demonstrate a willingness to pay tolls.

Competition

Since most toll roads and bridges are designed to relieve existing traffic congestion or reduce commuting time in a heavily traveled corridor, well-planned projects generally encounter little competition in the immediate years following an opening. Nonetheless, subsequent development of toll-free thoroughfares can attract traffic away from a toll facility.

In assessing the potential for such competition, Standard & Poor's examines the capital improvement program of the appropriate state or federal department of transportation, as well as the plans of regional and local transportation commissions and the private sector. Where a high degree of cooperation exists among various levels of governmental transportation departments and private toll operators and authorities, the likelihood that competing roadways will be developed is lessened. A lack of coordinated planning is behind almost all cases where toll-free roadways were constructed to the detriment of a toll facility. In addition to standard issuer meetings, discussions or meetings with the appropriate national, state and local transportation planning boards are helpful.

Where competitor facilities exist, especially free competitors, as is often the case with congestion relief projects, the level of traffic diversion projected from the existing roadways to the new road is an important indicator of project success. Projects with conservative diversion factors tend to be viewed more favorably. If start-up traffic history and diversion levels exist for other local facilities, whether free or tolled, it can further help to analyze the forecast traffic.

The key to a facility's competitive analysis is the cost-benefit analysis that drivers make in the form of timesavings or increased access versus cost. If, in the mind of the decision maker, the new road does not get one to work faster or allow deliveries fast enough to recover the cost of the toll, the project is not likely to succeed. The use of electronic toll collection (ETC) systems has improved traffic flows, though it is not clear that such systems produce overall annual savings relative to manual toll collection systems given the pace and scale of technological reinvestment of second, third and fourth generation systems. It is also uncertain what the impact of such ETC systems on the overall elasticity of demand if users of the system do not easily notice toll increases. Clearly, the introduction of electronic toll collection will allow for more efficient and potentially variable toll changes, ultimately giving operators more revenue-maximizing options. With the increased use of ETC systems also comes a thorough analysis of the toll road operator's violation rates and its violation enforcement system process.

Management

In addition to assessing management's overall ability to coordinate its activities with planning boards and governmental bodies, Standard & Poor's evaluates management in the context of quality of planning involved in the budget-making process for operations, maintenance, and capital improvements. For existing systems with an operating history, successful financial performance serves as a broad measure of management capabilities. The degree of autonomy enjoyed by the directors of a toll facility has an important bearing on its capacity to manage. Of particular importance is the ability and willingness of management to increase tolls as needed.

When the level of a rate increase is limited by concession agreement terms or governmental approval, a history of being able to increase toll rates when needed to the maximum level allowed is considered a positive. It is also considered a strength if ratemaking decisions are shielded from normal political processes or influence. Failure to increase toll rates when needed because of intervening political influence is a frequent situation with existing facilities that Standard & Poor's has evaluated.

Operations

Evaluation of maintenance procedures is also somewhat difficult. While it is fairly common practice for toll road entities to hire independent engineering firms for periodic facility inspections and to determine the need for repairs, the reports derived from these surveys often are general in nature and offer limited insight to third parties. Moreover, members of the engineering profession often have differing views on what constitutes adequate maintenance.

Nevertheless, several considerations can be useful in determining the quality of maintenance. Operators that retain their own engineering staffs, capable of conducting frequent inspections, may be better equipped to plan and budget for repairs and perform preventive maintenance than those systems that rely entirely on outside engineering firms for less frequent inspections. The utilization rate of the facility, that is, the number and type of vehicles traversing the roadway for a given time period, provides a good indication of the relative need for resurfacing and repair. Clearly, a facility that allows access to the heaviest of motor vehicles will suffer greater roadway deterioration and require a larger maintenance budget than a system with a comparable level of traffic limited to lighter-weight vehicles. Operating and capital reserve accounts are common in toll road projects and cover risks associated with excess usage. These reserves are typically funded at levels recommended by engineering staffs or consultants. However, for established toll facilities the lack of these reserves might also be acceptable based on some combination of their historically high unrestricted cash balances, high debt service coverage levels, and demonstrated toll rate flexibility.

With start-up toll roads, projected annual operating costs (on a per mile or per kilometer basis) that are similar to other existing toll roads with similar operational and construction qualities can often provide an initial level of comfort and the starting point for further analysis.

Feasibility Study

Finally, in reviewing a capital improvement program or extension to an existing system, Standard & Poor's considers the project's feasibility. Feasibility, as determined by an independent engineering firm, can be an important tool in the credit analysis. A well-documented feasibility study includes:

- An overview of the existing facility.
- A market and demand analysis that examines the following factors: demographic patterns; historical and projected traffic patterns; traffic mix (by type of vehicle and nature of trip); competing facilities; historical and projected toll rates; and, where practicable, the sensitivity of motorists to various toll levels.
- A financial analysis examining revenues and operating costs, as well as projecting the impact of planned improvements and competitive highways. The financial analysis should demonstrate the degree of financial stress that a new project, or roadway expansion, may place on existing operations and income levels.

A set of sensitivity runs or analyses are critical for all start-up facilities and for all existing facilities that are undergoing a significant capacity addition. However, the sensitivity analysis will vary on a case-by-case basis depending on the degree of historical information available and the aggressiveness of assumptions in the forecasts. Standard & Poor's evaluates the reasonableness of the assumptions supporting these forecasts. Assumptions regarding future traffic growth rates and operating costs should be based on historical patterns, with forecasts that greatly exceed historical levels likely adding credit uncertainty.

In evaluating the traffic and revenue forecasts, Standard & Poor's ultimately looks to the coverage of annual debt service by net revenues taking into account expenses, capital expenditures and other operating obligations in addition to revenues. When toll rate adjustments are linked to changes in inflation or when toll rate increases require the approval of governmental authorities, coverage of debt service by net revenue is an extremely important credit factor. In these circumstances, the ability to raise toll rates in real terms may be limited.

However, depending upon the management objectives of the operator (e.g. revenue maximization versus cost-recovery) the specific level of coverage of annual debt service by net revenues may not be as important when there is a strong and demonstrated willingness to raise rates as needed. In fact, a toll facility with lower coverage ratios and with considerable flexibility for increasing real tolls could be perceived as a stronger credit than a system with higher coverage ratios and limited capacity for raising tolls.

Legal Provisions

While legal protections for bondholders vary considerably, almost all toll road authorities provide a margin of safety by pledging to levy tolls at levels that will produce net revenues (after payment of Operations and Maintenance expenses) equal to debt service plus a coverage multiple. The most common ratio used in a toll covenant is 1.25x. The value of a covenant with debt service coverage appreciably higher than 1.5x is questionable, depending on the sensitivity of motorists to higher tolls and the practical ability to raise tolls when needed. The speed with which a toll rate increase can be implemented is a critical rating factor. If rate adjustments require approval of elected officials, delays can ensue. On a few occasions, authorities have been in technical default because of such delays.

As with all revenue bonds, additional bonds tests that include only historical revenues are significantly stronger than any test allowing projected rev-

enues. Specifically, tests with projected rather than historical revenues serving as the basis for calculating future debt service coverage significantly reduce the value of such a test, but are relatively common. In these cases the relative conservativeness of management—and their projections—will be a factor in how a prospective test is viewed.

A debt service reserve, fully funded at the equivalent of one year's debt service requirement, can provide significant liquidity to bondholders, particularly given a potential for delays in implementing required rate increases.

Additionally in some cases, states have enhanced the security for toll revenue bonds by pledging state-levied highway user tax receipts, or a straight GO backup.

Financial Projections/ Debt Structure/Sensitivity Analyses

One traditional measure of financial strength for toll revenue-backed facilities and project bonds is debt service coverage. Typical coverage for many existing U.S. operating toll facility is in the 1.5x-2x range for debt service from net revenues, as many provide for significant pay-as-you-go capital costs after operations and debt service. Standard & Poor's believes that investment grade start-up facilities should reach or exceed these coverage levels to offset many of the risks indicated above. Toll road transactions structured under a corporate model where senior unsecured debt is offered should provide solid interest coverage ratios and should have a long enough concession term to allow for re-financing and ultimate debt repayment.

For start-up facilities, the amount of debt that a project must support establishes the hurdle, in the form of debt service, for which the project must exceed. The existence of equity or subordinated debt positions or contributions from private investors, local, state, or federal governments can serve to lower the bar, making the project more affordable, and hence more creditworthy. A debt service schedule that is relatively level over time also allows more flexibility than an upwardly increasing schedule that keeps the pressure on constant growth through traffic or rate increases.

Sensitivity analyses are also typically requested to simulate normal or historic changes in economic conditions, traffic declines, operating and capital cost increases, and tariff adjustments to help gauge the project's ability to withstand change. Where projections are critical to future financial condition, Standard & Poor's will typically also request low, no-growth and break-even sensitivity cases.

Public Private Partnerships: Revenue/Debt and Equity Considerations

The recent multi-billion dollar privatizations of the Indiana Toll Road and the Chicago Skyway represent not only an enormous change in US toll road financing, but also in global toll road financings. These two financings mark a departure from the typical 25-35 year project finance model and has led to significantly different debt structures. The basic analytical considerations in evaluating these transactions remains the same with regard to demand, competition, management, and operations and our analysis still follows a combination of existing toll road criteria and project finance criteria. However, the debt levels tend to be significantly higher and debt repayment tends to extend significantly beyond the traditional 20-30 year period.

Furthermore, the debt associated with these transactions tend to use defer pay structures and rely on refinancing. To date, these transactions have occurred with respect to existing toll facilities with demonstrated strong cash flow generation, which has enabled them to support the higher debt levels. In addition, the longer amortization periods are aided by concession terms that are considerably longer (75-99 years) than in the typical concession financing. Debt levels would have to moderate significantly in a privatization of a start-up facility even with a very long-term concession period.

The challenge of long-term concession periods is in evaluating the traffic and revenue forecasts and feasibility studies. Planning or macro-economic forecasts, which are key inputs into most traffic models, themselves, only stretch as far as 10-20 years into the future. Additionally, demand models generally remain incapable of capturing structural adjustments to travel markets—such as the longer-term impacts of changes to preferences, relative pricing, technology and so forth. To address this concern, Standard & Poor's takes a conservative approach to longer-term traffic forecasts, reducing growth-rate expectations over time to reflect increasing uncertainty and unforeseen events that could result in real declines. While the approach to toll rate setting under a private operator model will focus more on revenue maximization, price elasticity is nonlinear. Mid-to far-term growth rates exceeding 1% per year are unlikely to be considered in our analysis and, depending on the assets characteristics, this could be capped at zero. Similarly, in evaluating projected tariff increases, revenue projections will be adjusted only for reasonable inflationary corrections. It is under this traffic and revenue profile, that Standard & Poor's

looks to see that all debt can be re-paid prior to the end of the concession term. While high growth rates may be achievable and the potential for strong revenue generation over the long-term may exist, this becomes more speculative in the far-term and inconsistent with the certainty required for investment-grade ratings.

The revenue generation profiles of toll roads more naturally fit amortizing debt structures. However, current financing trends has seen debt structures with a blend of multi-tranche debt with different amortizing profiles including bullet maturities and other nonamortizing debt instruments. One key aspect of our analysis is to determine whether or not the project cash flows can support the peak debt service levels that such instruments can introduce later in the concession term.

To date, Standard & Poor's has evaluated a limited universe of such credits and our views are still evolving. However, at present it is envisioned that for such very strong mature assets, is that peak accreted debt would occur in the first 15-20 years of the concession (depending on the concession term); 50% of the maximum accreted debt would be repaid within 30-40 years; and all of the debt would be repaid by the 45th to 50th year of the concession term, leaving an ample refinancing tail should traffic and revenues not meet expectations. These are guidelines and each long-term highly leveraged toll road concession would be evaluated on their own merits but the concept of limiting debt accretion and requiring debt to be paid down well before the end of the concession term remain the same.

Transactions with bullet maturities introduce refinancing risk. An investment grade rating might be difficult to achieve if more than 20% of total debt is due to be retired in any two consecutive years. Refinancing risk is manageable in long-dated concessions with a sufficient refinancing tail of about 10-30 years. Financial models, however, will be examined to understand the assumptions being made about refinancing such as the interest rate employed and stress tests will be used to evaluate the sensitivities of the transactions to less favorable interest rate assumptions. Investment grade structures will typically have secured appropriate hedging arrangements in this regard.

With private ownership of toll facilities, equity considerations are introduced into the legal structure. As deferred pay structures are introduced, it also means that early year coverage ratios are over inflated, giving a misleading indication of project performance. Furthermore, deferred pay structures can result in leaving free cash flow available for equity distributions prior to any substantial debt repayment. Standard & Poor's views projects as having less risk where dividends are to be distributed only when project performance is in-line with or exceed expectations, and is likely to continue to do so.

In this context, Standard & Poor's analyzes the issuer's proposed dividend distribution lock-up covenants. These lock-ups are generally set at levels just below the financial model's base case minimum debt service coverage ratio for investment grade credits. The closer the permitted dividend distribution test is to the minimum coverage ratio, the better the subordination relationship between equity and debt. Dividend lock-up tests also focus on the number of consecutive years that must pass (following dividend) lock-up before dividend outflows recommence. Forward-looking tests provide for a stronger structure.

Finally, the issuance of additional debt for shareholder distributions require that the additional bonds test for such purposes be set at a higher ratio than for leveraging for other reasons, such as capital expenditures. ■

Mass Transit Bonds Secured By Farebox Revenues

Operators of mass transit systems often look to leverage a variety of available revenues streams to finance both long-term capital investments as well as facilities less critical to the system. While typically a recipient of federal, state and local moneys in the form of grants, taxes, toll revenues, and other proceeds, some operators look to revenues derived from the farebox or operations of the system as a pledge of security. While the farebox can be a reliable and a relatively stable revenue source, it is obviously dependent on the viability and continued operations of the public transportation provider and is exposed to events or circumstances that can disrupt ridership or fare collection. The transit industry's history of deficit operations, labor actions, dependence on revenue transfers for capital investment, as well as operating subsidies along with a general lack of fare raising flexibility are credit concerns. Consequently, Standard & Poor's Ratings Services rates few bonds backed solely by transit

revenues and intergovernmental subsidies; sales taxes and other nontransit-related revenues actually secure most bonds issued for transit purposes.

Demand

Evaluation of demand for a start-up facility is difficult and centers largely on determining the plausibility of traffic and engineering studies. Generally, Standard & Poor's would have difficulty rating a start-up mass transit facility bond or other transit-like rail project in the investment-grade categories if the system had no operating history and was backed solely by farebox revenues. Localities that have only limited public transportation service need a major marketing effort to persuade commuters to forego driving. Many people who vote positively for transit projects have no intention of using them regularly; they are seen as a method of getting other people off the highways. New transit systems rarely achieve their projected ridership. Nevertheless, if a system can reduce travel time significantly at reasonable cost in a safe environment, it will attract some motorists.

Ridership can be enhanced by establishing linkage with suburban transit systems; around the country "Park and Ride" programs, where motorists can park at the exterior terminuses of a system and complete their commute by rail or bus, have been highly successful.

For established systems, the historical demand and the relative competitiveness of alternative travel modes are reviewed. Virtually every metropolitan area with an established network also has a regional transportation commission responsible for coordinating the planning and development of all methods of transit. Since members of the commission are appointed by governors or other elected officials, their past policies and practices provide a valuable measure of how public policy has been used to attract commuters to a transit system. With an established system, there is an evaluation of historical ridership patterns and departures from these patterns following fare increases and during economic downturns. These trends are a rough measure of the value of transit for users and their willingness to pay increasing amounts for the service.

Operations

Because mass transit systems are capital intensive and generally have deficit operations, these systems rely heavily on governmental support. This is compounded by the fact that fare increases generally evoke strong negative reactions from users, therefore revenue flexibility is often limited. As a result, most transit systems rely on government subsidies or the pledge of tax revenues in addition to farebox revenues. Standard & Poor's reviews the history of these additional revenue sources and the stability of this revenue stream. In particular, Standard & Poor's looks to the ability of management to close any projected operating deficits through its ability to raise revenues either through fare increases or increased other revenues or through operational cutbacks. The ability of management to contain costs and increase labor productivity is especially critical because wages and benefits account for well over half of total operating costs in this labor-intensive industry.

For older more established systems, operating deficits can also mean that maintenance programs have been neglected or there is significant deferred maintenance. As a result, Standard & Poor's examines the mean distance between failures in each year so as to determine the overall state of repair for the system. Standard & Poor's is especially attentive to maintenance procedures, since no system can attract new ridership or retain existing users if the equipment is subject to frequent breakdowns.

In examining capital improvements and extensions, the feasibility of the project, usually as determined by an independent engineering firm, and the logic of the assumptions supporting the conclusions are studied. The project also is evaluated within the context of the regional transportation commission's overall planning and the adequacy of pledged revenues to cover debt service on the debt to be issued, as well as any parity debt that is outstanding.

Legal Provisions

Given the weak financial condition of transit systems, legal provisions are important to an investment-grade rating. Where the pledged security is a gross lien on farebox revenues, Standard & Poor's looks to both historical coverage of debt service obligations and covenants related to additional indebtedness in order to provide bondholder protection from revenue declines that could not be mitigated by reducing operating expenses. In practice, most operators view farebox revenues as a supplemental source to provide leverage and do not look to maximize this type of debt. Rate covenants may not provide credit strength to the extent most operators exhibit a general lack of revenue flexibility.

Standard & Poor's evaluates the practical aspects of such a rate covenant against what is frequently a highly charged political atmosphere and litigation that delay or change proposed fare increases. Some issuers of transit revenue bonds try to compensate for what is seen as a weakness in the rate covenant by supplying an exceptionally high multiple in the additional bonds test. Those tests that include only historical revenues are significantly stronger than any test allowing projected revenues. A fully funded debt service reserve helps provide liquidity in times of cash flow stress. ■

Parking Revenue Bonds

Standard & Poor's Ratings Services maintains ratings on several types of public parking facilities, including downtown urban parking systems, individual parking garages, and commuter rail parking facilities. Parking operations are also evaluated in the broader context of other enterprises including municipalities, hospitals and universities. The level of demand for a public parking facility is the key factor in evaluating its credit strength. A well-focused, cohesive public policy by local government toward parking can go a long way in establishing strong demand. Those communities with a sound master plan that coordinates public-parking projects with those of private systems generally have more financially successful operations. Governmental limitations on competing private parking are considered a credit strength, and have been achieved in some cases by zoning ordinances or by limits on construction permits for new private parking facilities. Some municipalities fail to take a comprehensive planning approach to parking. Often, the result is a patchwork of competing facilities that may not efficiently serve the dynamic needs of a flourishing central business district or provide adequate security to bondholders.

Where the pledge of revenues from parking operations is the primary security, Standard & Poor's views a parking system consisting of several off-street garages or lots, supplemented by metered curbside parking and often parking fine revenues, as stronger than one comprising a single site or a few facilities. An extensive network of metered parking can serve as a solid financial anchor for a system, because operating and maintenance costs are relatively low, and metered parking often produces the highest profit margin in a system. However, local governments frequently view new parking projects as an economic development tool—one that might attract a large retailer or hotelier to the community, which leads to the construction of single-site, startup parking facilities.

Standard & Poor's considers start-up parking facilities as highly speculative. Because of the speculative nature of a single-site, start-up parking venture, it is extremely difficult for it to attain an investment-grade rating on its own merits. Standard & Poor's even views existing single-site facilities with a history of successful operations with some caution. The closing of a major retailer or other redevelopment efforts can have a profound impact on revenues generated by a single garage, or even a small parking system, because the service area of a garage or lot typically extends only a few blocks. Nonetheless, if a single-site parking project succeeds and develops a history of consistent profitability, then the facility could serve as a linchpin for securing financing of additional projects.

There are no minimum coverage levels for a particular parking facility rating. Large, diverse, monopolistic systems are generally able to achieve higher ratings with lower coverage levels than more limited systems. All other things being equal, higher coverage of debt service by net revenues leads to a higher rating. However, a parking system's size and diversity, and a system's ability to raise its parking rates, may outweigh coverage considerations. Standard & Poor's views negatively any limitations on a parking system's rate-setting flexibility and ability to respond to market demand. Similarly, a proven track record of periodic and regular rate adjustments is viewed positively, demonstrating both the ability and willingness to modify prices to meet minimum covenant levels or management-identified debt service coverage levels.

Demand

Because demand for parking is the paramount rating consideration, Standard & Poor's rating approach focuses heavily on the underlying economic growth and employment base of the locale. Historical population, employment, and wealth levels are examined. Trends in new office and retail building activity, as well as diversity of new growth, may be indicative of future demand. The current status of urban renewal plans or trends in business relocations that could adversely affect parking is also important. Projected office building construction is not accorded significant importance in the rating process because these estimates can be highly unreliable, and projected growth may never occur.

While statistics on municipalities are readily available, parking demand for the immediate service area of an individual garage is difficult to obtain. Standard & Poor's rating policy emphasizes existing parking demand, as opposed to projected demand. Existing parking systems can obtain ratings in the 'BBB' category or better, depending on the historical level of parking revenues and other sources of security that may be pledged. If a garage is being expanded, the historical occupancy rate, or the number of customers on waiting lists for monthly parking, should be available. Standard &

Poor's considers reliance on local companies that may have leased or guaranteed revenues on a certain number of parking spaces. If a proposed expansion, or a startup garage or system, relies on projected demand, then Standard & Poor's requires a thorough demand study. Typically performed by a parking consultant, a demand study will examine competition for parking and attempt to forecast parking volumes and rate increases. Standard & Poor's will examine the forecast's assumptions regarding the rate of "ramp-up" growth following the opening of the parking facility and its assumptions regarding the rate at which the market will bear increases in parking rates. An operating reserve fund to cover possible shortfalls in forecasted revenue, in addition to any debt service reserve funds, may be viewed positively.

Competition

Competition may severely restrict a parking facility's ability to raise rates. Standard & Poor's studies the number and occupancy levels of competing facilities, their proximity and rates, and anticipated new facilities. Some cities' systems have a significant competitive edge over private parking because of the lower-cost, tax-exempt financing available to them. A municipality may retain great rate-setting flexibility if it owns almost all of the downtown parking and there is no available mass transit; such a competitive position is considered a significant credit strength. Highly rated systems will often have prepared market studies that document their competitive position, including relative price, space, and availability data.

Management

Management is assessed primarily by the feasibility of its expansion plans, the extent of annual maintenance, and its track record of rate adjustments. For municipal parking entities, the effectiveness of operational oversight can also be a rating consideration. Substantial bond-financed expansion beyond the system's existing parking spaces—especially for the purposes of economic development—may be considered imprudent and speculative because of the uncertainty of attracting the level of demand needed to meet higher debt service. The ability and willingness of management and oversight bodies to approve and raise rates is also very important, as demonstrated by timely historical increases. In this respect, insulation from normal political processes is considered a strength, and weight is given to management or governance structures that have the unilateral ability to increase rates. Proper management of and reinvestment in the facilities is also very important to Standard & Poor's. If only one or two garages support debt service, regular ongoing maintenance is essential, especially in climates with weather conditions that can reduce a structure's estimated useful life. A structural failure for a small system could be disastrous. Standard & Poor's will look to ongoing maintenance and reinvestment in parking facilities.

Insurance is helpful and sometimes essential for small systems, including, if appropriate, business interruption insurance, property and casualty insurance, and coverage for other applicable and insurable risks. Standard & Poor's has engaged consultants to assess the risk of eight natural hazards, such as earthquakes, for each county in the nation. For California, seismic evaluations of each zip code have been performed. If a single-site garage is located in an area with a greater than 5% risk of 50% or more destruction before final bond maturity, special natural hazard insurance or building procedures are required for a rating of 'BBB' or higher.

Legal Provisions

Legal provisions vary in importance with the unique characteristics of each bond issue. A common question is whether a gross revenue pledge is viewed differently from a net revenue pledge. In general, parking enterprises are evaluated on a net revenue basis, regardless of the pledge of revenue. This is because, in most circumstances, a parking facility's rate structure—and therefore its competitive position and revenue-generating ability—reflects the full cost of operating the facility, including the capital and operating components. However, covenants to pay operations from another source (e.g., a city's general fund) can provide some enhancement to the rating. A covenant to maintain rates at sufficient levels to allow at least 1.00x debt service coverage by net revenue is considered a fundamental element in a viable, long-term parking enterprise. Most rate covenants range from 1.25x-1.50x debt service requirements. Additional bonds tests that include only historical revenues are notably stronger than tests that allow consideration of projected revenue. A debt service reserve fully funded from bond proceeds provides liquidity and is an important rating consideration for issuers with low debt service coverage. Such reserves are also important for issuers with potentially volatile revenue streams, such as start-up projects, which require a ramp-up period for new facilities to attain self-supporting status. A flow of funds that ensures funding of operating and capital maintenance accounts before transfers to a city's general fund is also viewed as important to the long-term viability of a parking enterprise. Covenants that prohibit the elimination of more than a certain percentage of total system spaces also provide a measure of security. ■

Not-For-Profit Health Care

The not-for-profit health care sector encompasses a variety of different types of health care entities seeking access to the capital markets. As a result, Standard & Poor's Ratings Services rating criteria covers a range of nonprofit health care providers in addition to single-site hospitals and multi-hospital systems. While each provider has unique areas of analytical focus, the framework for all of them is similar. Standard & Poor's continues to emphasize qualitative and quantitative factors in determining the rating of a health care entity. However, in today's more competitive and continually evolving health care environment, an examination of the provider's competitive position—including the nature of the market, market share, relationships with key market constituents, and cost structure—is essential to our evaluation.

Demand And Service Area Characteristics

Overall measures of business volume remain an important analytical tool, although the interpretation of volume data must be analyzed carefully. In markets with high managed care penetration, analysis of volume trends must include a review of payment terms and overall profitability of business lines. Although traditional inpatient and outpatient statistics are analyzed, Standard & Poor's also focuses on adjusted admissions and average daily census to gauge the revenue-producing capacity of an organization, along with the reimbursement rate environment.

To the extent that utilization is flat or declining, Standard & Poor's is interested in a provider's ability to control resource consumption and preserve cash flow. Population trends, unemployment rates, local wealth levels, the size of the region's uninsured population, and major employers are analyzed to determine their effect on health care utilization and payor profile. Additionally, the population profile is important in determining the type of services needed. Typically, an older population is likely to require more intense inpatient services than a younger population, which may be most effectively treated on an outpatient basis.

The types and levels of services provided are important analytical considerations affecting the institution's competitive and financial position. For example, major teaching hospitals, regional referral centers, and large medical centers draw patients from broader regional bases, providing some insulation from local economic cycles. This information feeds into Standard & Poor's assessment of demand for the institution's services, its market position relative to the needs of the population and to the competition, and the evaluation of the institution's strategic plans. The reimbursement and planning environment also is an important service area characteristic, which frequently affects financial results. Some states have rate setting or planning regulations, such as certificates of need and Medicaid managed care initiatives, in an attempt to control health care costs and expenditures. Therefore, an understanding of the unique features of a state's reimbursement and health-planning environment is an important element in understanding a provider's fiscal well being.

Institutional Characteristics And Competitive Profile

The competitive environment—always an important element—has become even more so as third party contracting has contributed to overall heightened competition for patients on an inpatient and outpatient basis. An in-depth understanding of the provider's market share over time for key services, centers of excellence, and competitive position in its primary and secondary service areas is a critically important area of focus for Standard & Poor's as an indicator of credit strength. In addition, affiliations with other providers are a key issue, as consolidation remains a key factor in most markets. Standard & Poor's must be fully aware of the market dynamics of both the credit being rated as well as its competitors. Understanding current strategic alignments and payor relations for all market providers help Standard & Poor's better predict an individual hospital's future.

Standard & Poor's reviews the size of the provider's medical staff, the average age of the staff, and level of board certification and admission dispersion among the top admitters. The ability to attract and retain new doctors is another useful indicator. Additions and deletions to staff—traditionally an area of focus—include an emphasis on recruitment of primary-care physicians.

Given the role of primary-care physicians to influence patient flow and resource utilization, it is impor-

tant for Standard & Poor's to understand the relations that a provider has with primary-care physicians, as well as with the rest of the medical staff, including an understanding of practice patterns, and loyalty of the medical staff to the institution.

Standard & Poor's also factors the financial performance of physician practices into ratings where hospitals, systems, and managed care corporations employ and manage doctors. Whether these practices are inside or outside the obligated group, Standard & Poor's incorporates this business line into the rating through analysis of financial performance, strategic vision, and quality of management.

The successful operation of physician hospital organizations or similar structures is viewed positively if it enhances physician loyalty and establishes appropriate financial incentives. The ability of hospitals and physicians to negotiate third-party contracts, as a single unit remains helpful in many markets although this has become less prominent over the past few years as exclusive managed care contracts have been replaced by broader point of service networks. The role of information technology and electronic medical records is becoming increasingly important both as a means to improve quality of care, meet evolving standards of care, and pay-for-performance requirements, but also as a physician recruiting and retention tool. As relationships with physicians have evolved, Standard & Poor's also recognizes that relations between other providers and insurers have also changed. It is important to highlight these key relationships during the rating process, particularly since affiliation agreements and network formation are important to overall strategy.

Management And Administrative Factors

One of the best indicators of management's ability is the provider's track record. However, given the competitive operating and reimbursement environment, the past may not always be the best predictor of future results. Therefore, Standard & Poor's analysis of management seeks to determine whether the management team exhibits the depth and experience to provide leadership, deal effectively with the medical staff, budget effectively, monitor and control financial and personnel resources, define the hospital's role, and develop and implement a dynamic strategic plan, including an effective information technology program, to enhance the overall health of the organization.

Management's ability to assess its institution's strengths and weaknesses and to develop sound strategies to enhance the institution's competitive position is crucial to continued success. In meetings with Standard & Poor's, management teams should be prepared to discuss these topics in detail. The provider's management, information technology, and capital budgeting systems should be appropriate for the size, type, and complexity of the institution. Standard & Poor's discusses with management the types and frequency of monitoring and reporting to the staff and to the board of trustees.

The role of the board and its interaction with the management team continue to be areas of analytical focus, and a meeting with the member of the board of trustees is desirable. The board's size, composition, structure, and activity are noted, with particular consideration given to its participation in setting strategic and financial policies. In addition many not-for-profit boards have adopted some or all of the rules articulated in the federal Sarbannes-Oxley legislation. It is helpful to understand the Board view of these rules and what, if any, have been adopted by the Board.

Another area of discussion is risk management and the hospital's malpractice coverage and history. The ability to get reasonably priced malpractice insurance is also examined, along with general property and casualty insurance. Overall levels of risk retention as well as diversification of insurance risk are examined to see if the provider is over reliant on their own balance sheet for first dollar coverage up to the retention limits or if there is an over reliance on any one insurance company. To the extent an organization relies on a captive insurance company additional information is likely to be requested regarded the captive's performance, funding levels at the captive as well as captive polices on reinsurance to make sure the captive itself has managed its risk appropriately.

Financial Factors

Financial position and performance are essential elements of Standard & Poor's analysis. However, if a provider's business fundamentals are not sound, currently sound financial performance and position may not be sufficient to offset longer-term business

Standard & Poor's Rated Health Care Providers

Standard & Poor's rates a broad spectrum of health care providers, including but not limited to:

- Single-site hospitals-including rehabilitation, children's, cancer centers and psychiatric institutions;
- Multi-hospital systems;
- Academic medical centers;
- Physician groups and faculty practice plans;
- Continuing care retirement communities and nursinghomes; and
- Human Service Providers

concerns. For example, a very competitive service area, a weak local economy, a weak medical staff profile or an over reliance on investment income might explain why a hospital is rated below what its financial profile might otherwise indicate. Conversely, the absence of competition and a growing economy and population base sometimes can compensate for lower cash levels or thinner margins. Standard & Poor's financial analysis highlights income statement, balance sheet, cash flow statement trends and future capital requirements. One bad year does not necessarily mean an immediate rating downgrade, unless the experience was very severe or is determined as being the beginning of a long-term shift in financial performance. When confronted by a weak year, Standard & Poor's carefully reviews management's corrective action plan to access the likelihood it will return the organization to financial health. The stronger and more detailed the correction plan, especially if combined with clear implementation schedules, are generally viewed more favorably than broad but undefined correction programs. Trend analysis is critical to all rating decisions.

Income-statement analysis focuses on revenue growth, payor mix and profitability by payor, and operating and excess margins. Standard & Poor's looks at local state regulations and funding issues, as well as the level of competition among the insurers. Standard & Poor's will ask management about its managed care contracting strategy, current rate negotiations and role of pay-for-performance contracts, if any, in the local marketplace. Programs to control costs are also examined in detail, as is overall revenue cycle performance including management of bad debt.

Standard & Poor's is interested in measuring an institution's financial flexibility, or its ability to meet its debt-service requirements even under stressful conditions. Also important is an organization's ability to have sufficient cash flow and debt capacity to meet future capital needs. Low-cost providers with a favorable payor mix and market dominance will have a clear advantage. Competitive pressures may constrain high-cost providers from raising prices, although they may be suffering financially. Typically, Standard & Poor's will ask how the provider's costs compare with those of other providers, and is interested in any initiatives undertaken or under way to control or reduce costs of providing services. Low costs and demonstrated efficiencies are key to strong margins, along with negotiating clout with managed care payors. Key income statement indicators are operating and excess margins, historical pro forma debt-service coverage, and debt burden. Increasingly overall bad debt and charity care levels are impacting margins negatively. In some cases community perceptions the sufficiency of the charity care that is being provided is an issue that can indirectly impact margins. Standard & Poor's also uses ratios such as full-time equivalent employees to adjusted admission, and salary and benefit expenses to net patient revenue to help analyze trends over time for a single credit and improve comparability between credits in similar markets with similar services. Institutions with favorable ratios have a greater degree of financial flexibility to meet the challenges of today's environment. Quality metrics are also reviewed in available and can provide some measure of flexibility if favorable. Pension funding levels are also reviewed, as they are increasingly an important use of cash that competes directly with an organization's ability to fund capital needs.

Although operating and excess margins are both important measures of profitability, Standard & Poor's believes that operating margin is the best measure of the ongoing ability to generate profits from the business. Excess margins include investment income (including realized gains and excluding unrealized gains), as well as unrestricted donations. However, weak operations combined with dependence on non-operating earnings can highlight underlying weakness in most cases. Some very well endowed institutions are exceptions to this especially if their fund raising ability is strong.

In addition to focusing on an organization's ability to produce profits, Standard & Poor's examines cash flow statements to measure a credit's cash-producing ability. Our ratios borrow heavily from corporate finance, and answer the question of whether an institution is generating sufficient cash flow to fund its strategic objectives while maintaining sufficient cushion consistent with its rating. Key cash flow ratios include cash flow to total liabilities and EBIDA (earnings before interest, depreciation, and amortization expenses). Standard and Poor's also excludes from excess income unrealized gains or losses from swap agreements.

Standard & Poor's analysis also focuses on the balance sheet, particularly leverage and liquidity. Balance-sheet strength is key in today's volatile operating environment. An institution with significant liquidity or light leverage can more easily survive the increasingly common scenarios of reduced reimbursement; poor managed care contracts, or volatile investment performance. Standard & Poor's uses traditional liquidity ratios such as days' cash on hand and cash to debt. Standard & Poor's also examines in detail a provider's investment allocation and investment policies, especially if nonoperating revenue is a significant source of funds for debt service. In addition, the liquidity of the investment portfolio is also examined closely especially if

the provider is using its own balance sheet to support potential variable rate debt tenders.
Standard & Poor's uses capital structure and liquidity ratios such as debt to capital, to help evaluate more thoroughly debt repayment ability and debt capacity across the rating spectrum. Future capital needs and projected sources of capital to fund those needs, whether it is internal cash flow or external debt or a combination, remain an important element of Standard & Poor's analysis.

In addition, an organizations' overall mix of fixed versus variable rate debt is analyzed, both pre-and post-usage of swaps. Swaps are analyzed for termination risk, and the potential for large payments that may then be required. In general most health care credits entering into swaps have sufficient liquidity to handle unexpected termination events but this could be a problem if an organization's overall rating profiles deteriorate. Particular attention is paid to whether or not the swaps contain rating triggers that could force termination. Standard & Poor's has developed criteria (see related criteria) used in reviewing any organizations with swap exposure and assigns a debt derivative profile score as part of the review process.

Health Care Systems

Standard & Poor's definition of a health care system includes vertically or horizontally integrated systems that may have at least three hospitals with sufficient financial dispersion in a single region, as well as traditional multi-hospital/multi-state systems. The definition also includes systems that have multiple distinct business lines, even if geographic dispersion is more limited.

Over the past decade the number of systems, particularly those rated in the 'AA' category, has risen. System ratings generally are higher than ratings for single-site facilities because of the financial and nonfinancial synergies and the dispersion of risk that generally accrues to systems. This is amply demonstrated in Standard & Poor's not-for-profit medians published annually for systems and standalone facilities.

Standard & Poor's approach to rating health care systems is similar to that used for single-site facilities. In both cases, creditworthiness depends on certain qualitative, quantitative, and legal factors. However, a system's credit standing can be enhanced by geographic, financial, and business line dispersion. When rating systems, Standard & Poor's evaluates the extent to which these credit-enhancing qualities exist. Key rating considerations also include the system's structure, management's administrative philosophy, and overall system level financial track record—which naturally reflects any economies of scale achieved through the consolidation of financial and management resources.

The first step in the rating process is to evaluate the system components that have covenanted to repay the debt issue. In the case of an obligated group legal structure, Standard & Poor's analyzes the obligated group and its relationship to the system as a whole. The entire financial profile of the system is analyzed in addition to the obligated group's profile. If the system employs a corporate-style unsecured GO pledge, Standard & Poor's focuses on the credit group, if applicable, as well as the entire system. Overall, Standard & Poor's seeks to understand the system's overall strategic plan, especially as it relates to growth, operations and financial policy including future capital and funding needs.

Obligated Group

The obligated group might not include all of the entities in the system. The initial obligated group often excludes leased and managed facilities, ventures not related to health care, and for-profit corporations. Similarly, the group often excludes businesses that might diminish the group's creditworthiness, such as money-losing physician businesses.

Standard & Poor's assesses any management plans that would change the obligated group's strength. Potential acquisition, divestiture, and diversification strategies are particularly important. Plans to divest an important revenue-producing entity or absorb a losing operation can affect the obligated group's financial strength. Many systems also guarantee the debt of weaker institutions, as a diversification strategy or to buoy an affiliated institution in distress. As a result, Standard & Poor's examines the downside risk of guarantees and in general fully factors those into the rating, although some credit is given in self-supporting situations. Standard & Poor's also evaluates potential transfers of cash or other assets out of the obligated group. Sheltering assets may be attractive for some purposes, but often weakens the balance sheet from a credit perspective. Standard & Poor's asks about any off-balance-sheet activity and will factor in any contingent liabilities that exist whether they are on the balance sheet or not. Major operating leases for employed physicians, research or administrative space are generally factored into the analysis.

Finally, Standard & Poor's reviews the system's activity outside the obligated group. Health care systems often have the opportunity to engage in health-related services and alternative delivery systems, as well as speculative nonhealth-related projects. Although these activities may take place in subsidiaries excluded from the obligated

group, Standard & Poor's evaluates the scope of such ventures and assesses their impact on the system's creditworthiness.

System Composition

The system's individual components also are important. Answers to the following questions are critical to system evaluation:

- In a system where members are geographically dispersed, are they located in markets with favorable economies and are they competitively positioned within these markets?
- How integrated is the system from an operations and finance perspective?
- What are the size, geographic location, and market position of the group's major acute-care players?
- Is the system constrained by any regulatory, competitive, reimbursement, or economic environments?
- Are the scope and types of services varied throughout the system?
- How effective is management at correcting problem subsidiaries?
- Has management demonstrated a willingness to divest non-profitable subsidiaries?

In addition, Standard & Poor's evaluates each entity's percentage contribution to net revenues, assets, and profits, financial and admission trends, payor mix, and overall profitability. These factors demonstrate the degree of financial, geographic, and risk dispersion in the system. Positive rating factors associated with systems include management expertise, access to capital, economies of scale, pricing flexibility, and the use of corporate personnel, centralized cash management, development of centralized information technology expertise, and insurance and pension trusts. In addition to these traditional strengths, the newly added systems demonstrate regional dominance through vertical integration and the ability to adapt to local managed-care penetration. Also, in most cases, systems have larger, more diverse revenue bases, making them less vulnerable to reimbursement and market pressures.

Board and management

The organizational structures of health care systems vary considerably, based on board philosophy, as well as more practical factors, such as the system's size, services, and geographic scope. These factors translate directly into the level of corporate control and the degree to which centralized services are available to subsidiaries.

Regardless of a system's organizational structure, management must be able to control the dynamics associated with a large corporation. Typically, a health care system has greater financial resources than a single hospital and, consequently, greater financial flexibility. Rating benefits derived from this flexibility depend directly on the system's ability to manage these resources. If growth is being pursued aggressively, what is the size of the overall capital plan, how much debt is being used to finance new projects versus internal cash flow, and are the plans prudent? Conversely, if the system is over bedded or operating unprofitable ventures, is the flexibility being used as a cushion to delay decisions? Is management willing to make hard decisions to divest unprofitable or non-strategic subsidiaries? These issues highlight management's ability, as well as the financial planning capabilities of the system.

Successful health care systems include regional providers offering a continuum of services, as well as the more traditionally defined multi-hospital systems.

The role of the board and its interaction with the management team continue to be areas of analytical focus, and a meeting with a member of the board of trustees is desirable. The board's size, composition, structure, and activity are noted, with particular consideration given to its participation in setting strategic and financial policies. In addition many not-for-profit boards have adopted some or all of the rules articulated in the federal Sarbannes-Oxley legislation. It is helpful to understand the Board view of these rules and what, if any, have been adopted by the Board.

Major distinguishing factors

In assessing the credit strength of various types of systems, Standard & Poor's draws three major distinctions. First, distinctions can be drawn between systems formed by natural market synergies over time and those formed more recently because of market pressures. Whether they are regional or national, the more mature systems formed over time generally are better positioned to take advantage of the incentives in the current health care market, while recently formed systems face the challenge of internal system integration, in addition to a multitude of external pressures. While there still are benefits to multi-state providers, including economic and regulatory diversification, national systems must create or participate in local mini-systems to compete with strong regional systems and alliances.

Second, distinctions can be made between systems that have a salaried, hospital-based medical group and those with a traditional medical staff. As revenues continue to be limited, systems that control physician resources will be best positioned to contain expenses and maximize margins.

For health systems that own their own managed care plan, Standard & Poor's evaluates the strategic and financial contribution of the plan. Critical areas of analysis include:

- The plan's position within the overall managed care market, including products offered, price competitiveness, market share, and composition of the provider network;
- Impact of the plan on relationships with other insurance companies that the provider contracts with;
- Strategic purpose of owning the plan, such as increasing market share, improving negotiating leverage with existing market managed care players, better care management, or capturing a larger portion of premium dollars; and
- Financial results, including the stand-alone performance of the plan and its impact on financial results of the rest of the health system.

If the plan loses money, or is subsidized by the larger system (these are often hidden subsidies) management will be expected to articulate a clear strategic benefit for plan ownership, a detailed performance improvement plan, or a well-conceived exit strategy.

Finally, distinctions can be made between systems' managed care strategies. Many systems that have owned managed care products through the past decade have extensive experience with underwriting, claims administration, physician integration, and resource control that can only be gained over time.

As always, the presence of a single credit-enhancing feature will not necessarily improve a rating. On the other hand, a system need not exhibit all the characteristics discussed above to obtain a solid rating.

Legal Criteria Summary

Part A: Structural provisions

Security

- Unsecured GO pledge.
- Revenue pledge, GO of the obligated group with or without a mortgage of the facility.
- A joint and several obligation of the obligated group.
- Negative lien covenant with senior lien debt limited.

Permitted investments

- Investments rated by Standard & Poor's in the investment-grade category.
- Obligations of, or obligations guaranteed as to principal and interest by the U.S. government or any agency or instrumentality whose obligations are backed by the full faith and credit of the U.S. government.
- FHA debentures.
- Obligations of government sponsored agencies that are not backed by the full faith and credit of the U.S. government (examples include: FHLMC, FHL banks, FNMA, SLMA).
- Federal funds, unsecured certificates of deposit, time deposits, and bankers' acceptances from any bank whose short-term obligations are rated by Standard & Poor's and mature in less than 365 days.
- Deposits, not rated by Standard & Poor's, but fully insured by the FDIC.
- Commercial paper rated by Standard & Poor's in top two categories.
- Investments in money market funds rated by Standard & Poor's in top two categories.
- Repurchase agreements with any transferor whose debt or commercial paper is rated by Standard & Poor's.
- U.S. Treasury STRIPS, REFCORP STRIPS, and FICO STRIPS, or any stripped securities rated by Standard & Poor's.

Events of default

- Failure to pay principal, interest and premium when due.
- Failure to observe or perform any other covenant for 30 days (technical default).
- Default in the payment of any material indebtedness for borrowed monies.
- Obligor becomes bankrupt or insolvent.
- Cross-default provisions in legal documents.

Remedies

- Acceleration by trustee permitted.
- Bondholders can force acceleration or waive certain events of default.

Legal Review

Standard & Poor's evaluates the legal provisions of a health care bond issue based, in part, on the credit strengths and weaknesses of the health care obligor. Legal provisions alone cannot prevent operating and financial performance declines, interruptions of debt-service payments, events of default, and the risk of overall credit deterioration. Consequently, while weak or liberal provisions can cause a lower rating to be assigned, strong legal covenants generally will not lead to a rating higher than that of the obligor. Credit quality determines the degree of influence that legal provisions bear on a bond's rating.

Legal covenants should provide protection to bondholders, while allowing hospital management sufficient operating flexibility to respond to changing business conditions. However, Standard & Poor's will assess any future hospital action that affects the hospital's credit quality, even if such action is addressed in the legal documents, and will adjust the rating accordingly. In general not-for-profit healthcare providers will provide a gross revenue pledge with clear limits on senior debt. In addition, a rate covenant is expected along with reasonable transfer of assets tests including departures from the obligated group.

Unsecured health care pledges

A number of health care credits have chosen to issue bonds with an unsecured GO pledge, which is essentially a promise to pay by a corporate parent with no underlying revenue pledge or mortgage from the hospitals or other operating units. There may be a revenue pledge from the parent itself. While the

Legal Criteria Summary (continued)

Part B: Covenants

Rate covenant

- An event of technical default shall exist if, at any time, the net available falls below 100% of MADS on all long-term debt.
- The obligor shall employ an independent, nationally recognized consultant and immediately follow the consulting firm's recommendations if the obligor's net available falls below 110% of MADS on all long-term debt.

Insurance

- The obligor must maintain adequate levels of coverage, including malpractice, business interruptions, and natural hazards with insurance consultants reports discussing adequacy of insurance levels annually for any self-insurance programs.

Notification

- The obligor agrees to notify:
- Bondholders and Standard & Poor's immediately upon an event of default;
- Standard & Poor's upon a change in the obligated group structure;
- Standard & Poor's upon a change to legal structure;
- Standard & Poor's upon the incurrence of additional debt;
- Standard & Poor's upon entering into any SWAP transaction and
- Standard & Poor's on any mode change.

Part C: Legal Tests

Disposition of assets

- Transfers of assets outside the obligated group must be limited.

Mergers/consolidations divestitures/change in system composition

- Surviving organization assumes all concurrent obligations at time of merger or consolidation;
- No event of default immediately post transaction (including covenant defaults).

Substitution

- Limitation on ability to substitute new security without bondholder approval.

1. For a more complete listing of permitted investments see criteria for Qualified Investments for Municipal Transactions.
2. In calculating debt service, Standard & Poor's treats interim debt, balloon debt (which is expected to be refinanced) and variable-rate debt as if it were long-term debt with level debt service payments at the current market rate. Standard & Poor's also includes guarantees in its "worst-case" debt service calculation.
3. The sum of excess income, depreciation expense, amortization expense, and interest expense.

corporate model has fallen into disfavor in recent years, a number of the largest systems have this legacy structure. While the corporate parent may or may not have significant resources of its own, the bulk of the value-producing assets are not directly pledged to the debt. However, various internal arrangements allow the parent to collect money from constituent members to pay debt service. While this type of legal structure gained popularity in the mid-to-late 1990s for larger not-for-profit health care providers, and is currently in disfavor, it has been successfully time-tested in many other parts of the U.S. corporate debt market.

Standard & Poor's ratings incorporate analysis of the legal documents; however, these security agreements play a secondary role in gauging and rating an obligor's ability and willingness to repay debt. Standard & Poor's credit analysis always begins by looking through obligated group structures to the position of the organization as a whole regardless of the specific pledge being provided. In some cases minor rating adjustments can be made for non-obligated entities that are appropriately 'ring-fenced' from the main obligated entity. This is discussed in more detail within our senior living criteria.

Standard & Poor's expects that some credits will continue to use the unsecured GO structure or one of its many variations, especially if its legal structure is already established in the market. The flexibility of these documents must be matched by wise governance and sound management as fundamental changes in corporate assets can, and often do, have a profound impact on credit quality. Standard & Poor's active and ongoing surveillance of these credits monitors the impact of additions, and more significantly, deletions of affiliates.

Required covenants

In general, Standard & Poor's is comfortable analyzing the concept of an unsecured GO pledge. However, to provide effective bond security, several features, outlined below, strengthen the obligor's credit rating and legal and security arrangements.

Credit rating: Credits issuing under an unsecured GO pledge typically are rated 'A+' or better. Although Standard & Poor's stated earlier that this structure by itself would not negatively affect a rating, lower-rated credits often do not have the credit characteristics necessary to prove to Standard & Poor's that they can effectively manage under a looser legal structure.

Senior debt: The unsecured GO debt typically remains the senior debt security for the entire health care system. To preserve the senior position of this debt, Standard & Poor's expects clearly defined limits on senior liens outside this structure. As a benchmark, senior liens up to 25% of long-term debt; unrestricted fund balance; or net property, plant, and equipment will be allowed in the documents. Access to cash: Senior corporate officers should be able to quickly upstream cash and liquid investments without limit from constituent members. Rate covenant: The system as a whole, including any contractual affiliates, should maintain a rate covenant of at least 1x principal and interest coverage of maximum annual debt service. Failure to meet this test should generate an independent consultant's report to the system's governing body and senior management.

Designated affiliate model

The unsecured GO pledge also includes the concept of designated or restricted affiliates. This model is more like traditional legal structures, as it seeks to marry the freedom of the unsecured GO pledge with some of the characteristics of the more traditional obligated group structure. Under this variation of the unsecured GO model, the parent, which remains the only entity promising to pay, seeks to move the credit analysis and the key legal covenants from the system as a whole to a narrower subset of the system, namely restricted or designated affiliates. These affiliates are bound to the parent either through ownership or contract. In either case, however, the parent has a clearly established mechanism to upstream funds for debt-service payments if necessary.

A key difference between this structure and traditional obligated groups is enforceability. As a result, although the designated affiliate model appears to be structured like a more traditional joint and several obligation, and within the system it essentially is a joint and several pledge, it actually cannot be directly enforced as such by bondholders. Rather, bondholders must rely on the parent's obligation to enforce its internal documents. As a result, Standard & Poor's legal analysis of the designated affiliate model will mirror that performed for pure unsecured GO pledges.

One potentially troubling aspect of the designated affiliate model is the ability of the parent to designate and undesignated affiliates almost at will. In theory, the parent could undesignate enough affiliates so that the credit is fundamentally changed. While generally considered highly unlikely, this has the potential to threaten management's ability to repay debt. In these cases, some simple additions to the previously stated requirements should be in place.

Typically Standard & Poor's sees at least 1x rate covenant calculated on the entire system audit, not just the credit group. In addition, the results of contractually designated affiliates should be included within the rate covenant calculation. If violated, this test will provide the board of directors and bondholders with a valuable independent assessment of management and current operations. As always,

Standard & Poor's also expects that the unsecured GO pledge remains the senior debt of the credit group. The permitted lien test and its 25% limit on lien debt that can run to the parent and designated or restricted affiliates as opposed to the system as whole, should remain in force at all times. Compliance should exist at all times, not just at the time of a new debt transaction. A common mistake is to treat this as a transaction test instead of a default test. If applied only at the time of a transaction, subsequent undesignations could leave the remaining members of the credit group in violation of this principle. When properly structured, this test will safeguard against the parent undesignating affiliates in such a way as to leave the system with too much senior lien debt. By making this an on-going requirement, it precludes a violation of the test and, as a result, the rated unsecured debt cannot fall to a junior lien position when measured against the 25% allowed limit.

Off-Balance Sheet Debt

Nonprofit health care organizations are increasingly using off-balance sheet debt to finance certain assets. How this usage is viewed from a credit perspective varies for a number of reasons. Some of the questions Standard & Poor's asks to determine the credit impact include:

- What are the assets being financed?
- Are they critical to the ongoing welfare and mission of the organization?
- What is the legal structure of the deal?
- Is there a moral or legal obligation involved?
- Are there true contingent liabilities being undertaken by the organization?

The answers to these questions, combined with an obligor's fundamental credit strength, are used to gauge the potential rating impact of any off-balance-sheet transaction. In certain cases the impact is significant; in others slight. In either case, Standard & Poor's needs to be informed of all off-balance-sheet transactions because there may be financing risks that could have credit consequences. Issuers and obligors often perceive off-balance-sheet financing as a means to preserve debt capacity and enhance operating flexibility, with no impact on their senior debt rating—a free lunch, if you will. However, this is clearly not always the case.

Broadly speaking, off-balance sheet debt refers to a host of different financing structures. These include:

- Sale/leaseback transactions;
- REIT financings;
- Various types of operating leases or guarantees;
- Contribution agreements between unrelated parties to finance jointly owned assets; and
- Public/private joint ventures or partnerships, many with a real estate developer.

The common element is that the repayment obligation does not appear as a liability on the rated organization's balance sheet and, in some cases, may appear as an operating lease.

Standard & Poor's ascertains the risks of off-balance sheet transactions—regardless of the legal structure—when a rated non-profit organization is involved and the transaction is deemed important to the organization's ongoing welfare or mission. Once the potential off-balance-sheet risk is identified, Standard & Poor's review of a rated organization factors in the relevant risks, which include additional debt-service costs or operating lease payments related to the financing. The potential of having to "step up" to a guarantee is also assessed. The impact on a rated obligor's debt could range from minimal to high, in which case it is treated as the equivalent of an obligation on parity with the obligor's own debt. This range reflects the legal structure as well as the degree to which an organization, as a whole, is legally or equally as important, morally obligated on the transaction. The importance of the asset being financed via the off-balance sheet to the overall mission and strategy of the organization is also central in determining the extent of the rating impact.

The potential risks of off-balance-sheet financings include:

- The potential dilutive effects on the rated obligor's bondholder security;
- Risks associated with the ownership and control of the asset being financed;
- Potential liability and poor public relations if the off-balance sheet financing encounters financial problems;
- Strained managerial resources resulting from administration of an off-balance-sheet project and related financing program; and
- Potential jeopardy of the rated issuer's tax-exempt status.

Fueling the rise in off-balance-sheet financing are the following one or more goals:

- Preserve debt capacity by only financing the most mission-critical assets or programs with the obligor's strongest security;
- Enhance financial flexibility by proceeding on a speedier time table than that required for a more traditional bond financing;
- Increase risk sharing through joint ownership or other collaborative relationships;

- Financing terms that can be more flexible and more suitable to the specific asset being financed; and
- Legal covenant flexibility.

In addition, some entities, especially in senior living, are attempting to fund non-recourse projects with limited support from an obligated entity. While Standard & Poor's always begins its analysis of the organization as a whole, there are limited circumstances where obligated group performance can be 'ring-fenced' from the impact of non-recourse debt that in most cases is dilutive to the obligated group. In these cases Standard & Poor's will review the strategic importance of the non-obligated entity, the financial relationship between the parties, the scope and depth of management resources and legal issues. In some case the debt of the obligated group can be up to three notches higher than the consolidated rating of the organization. This is discussed in more detail in the senior living criteria. ■

Senior Living

The majority of rated credits in Standard & Poor's Ratings Services not-for-profit senior living sector are either single-site continuing care retirement communities (CCRCs), or multi-facility organizations where CCRCs comprise the majority of the organization. CCRCs typically offer independent living, assisted living, nursing care, and additional services to senior citizens pursuant to a long-term resident contract. These contracts may include payment of an entrance, or advance fee as well as a monthly maintenance fee. CCRCs appeal to many elderly people because of the variety of living and service arrangements available, and the security of convenient access to nursing care and other support services if, and, as they become needed.

The majority of Standard & Poor's CCRC credit ratings are in the 'BBB' or 'A' categories. Ratings tend to cluster in the lower end of the investment-grade spectrum because of industry-risk factors, including the competitive and fragmented nature of the business, the small size of many CCRCs, the discretionary nature of the services provided, and the significant demand for capital to update facilities in order to attract an increasingly sophisticated and demanding resident population, resulting in generally high leverage and debt burden. Historically, the industry has generally been reliant on investment income to offset operating losses and keep annual price increases to a minimum. In the past several years, however, the industry as a whole has focused greater efforts on generating positive income from operations, since market volatility can lead to unstable earnings and coverage trends. This shift is one of the drivers behind the recent stabilization of long term care credit ratings.

Standard & Poor's analysts evaluate a CCRC's creditworthiness based on the organizational structure (including whether it is a standalone facility or a multi-site organization), the strength of the organization's governance and management, demonstrated demand for existing and planned facilities, and the adequacy and predictability of key revenue sources. The mix of private versus governmental revenue sources is also relevant to the analysis, as Medicaid and Medicare reimbursement can be unpredictable. Additionally, because of the service-oriented nature of this business, the ability to keep revenue increases in line with labor and other costs is key to Standard & Poor's analysis. A strong emphasis is placed on adequate liquidity, to meet operating and debt-service costs, as well as future capital needs and future service liabilities if the organization offers life care contracts. In addition, the service offerings, location, and the condition and attractiveness of the physical facilities are compared with those offered by other competitors in the service area, as well as the merits of the proposed project and financing. Financial performance is evaluated, including the use of ratio analysis, to determine the ability of the organization to meet operating costs and existing and planned fixed-capital costs. The annual ratio report for CCRCs explains our ratios in detail. Future capital plans, as well as potential projects at affiliated organizations, are also considered.

Organizational Structure

System ratings generally are higher than ratings for single-site facilities because of the financial and nonfinancial synergies and the dispersion of risk that generally accrues to systems. Standard & Poor's approach to rating senior living systems is similar to that used for single-site facilities. In both cases, creditworthiness depends on certain qualitative, quantitative, and legal factors. However, a

system's credit standing can be enhanced by geographic, financial, and product line dispersion. When rating systems, Standard & Poor's evaluates the extent to which these credit-enhancing qualities exist. Key rating considerations also include the system's structure, management's fiscal and administrative philosophy, and overall system level financial track record—which naturally reflects any economies achieved through the consolidation of financial and management resources.

Management

Standard & Poor's analysis of the organization and management of a CCRC is extensive. While the management strength and expertise of board members in the industry has grown significantly, this area was at one time a significant weakness. A site visit and tour of the facility and service area are usually required for all proposed financings. Standard & Poor's representatives typically meet with key members of the administration and board, and management company (if under independent management contract). It is also desirable for representatives of the sponsoring organization to attend this meeting to discern their role in, and commitment to, the continuation of the enterprise.

An organization's track record is one strong indicator of management's ability and the board's role in oversight. However, similar to the acute care sector, senior living has been impacted by outside pressures such as economic forces, rising insurance costs, reimbursement pressure and staffing challenges in skilled nursing, to name a few. Standard & Poor's analysis of management seeks to determine whether the management team exhibits the depth and experience to identify and react to upcoming challenges, to budget effectively, monitor and control financial and personnel resources, and develop and implement a dynamic strategic plan to enhance the overall health of the organization.

Management's ability to assess its institution's strengths and weaknesses and to develop sound strategies to enhance the institution's competitive position is crucial to continued success. In meetings with Standard & Poor's, management teams should be prepared to discuss these topics in detail. The provider's management, information, and capital budgeting systems should be appropriate for the size, type, and complexity of the institution. Standard & Poor's discusses with management the types and frequency of monitoring and reporting to the staff and to the board of trustees. Credit considerations include the organization's:

- Mission;
- Governance structure and financial goals;
- Compliance procedures with regulatory authorities;
- Accreditation;
- Financial planning and budget preparation; and
- Role of the Board in reviewing and providing input into the issues noted above.

Demand, Market Position And Demographics

Demand is a key indicator of the financial health of a CCRC, and demand is driven by both competitive characteristics of a facility (the attractiveness of the product, the service offerings and amenities, as well as pricing), and the demographics and economic characteristics of the service area. In this regard, Standard & Poor's evaluates the appropriateness of the CCRC's marketing program, product offerings and pricing relative to service area characteristics. Management and/or its financial representatives will be expected to prepare a competitive market profile of existing and proposed CCRCs and other organizations that could be viewed as competitors in the service area, including stand-alone assisted living, skilled nursing facilities, or other senior residential communities. The analysis should include census by contract and/or unit type and should indicate the fees in effect for each major type of contract or service offered. Area population trends, per capita wealth and income levels, as well as median home prices are also part of the analysis. Additionally, the relation of a project's entry fees to area median home prices, as well as trends in the real estate market, are explored.

In addition to service area and competitive information, Standard & Poor's reviews a range of operating statistics, including occupancy by level of service, unit turnover rates (due to move-outs and deaths), and fill-up rates of any new units, as these measures are also indicators of a facility's demand and desirability.

Contract Types

There are a variety of important financial factors that Standard & Poor's examines in addition to an organization's audited financial statements and ratios. These factors can influence how financially strong the institution must be to offset certain risks. For example, three main contract types are used by CCRCs, either singularly or, more recently, in combination. However, certain contract types are riskier than others. The first type is known as a Type A, or life-care contracts. The distinguishing feature of this contract type is that the resident pays one monthly fee regardless of the level of service received (i.e., whether the patient is in independent or assisted living or skilled nursing). Type A contracts pose the highest level of risk, as the organization must manage the cost of resident care effectively with more limited ability to recoup costs through higher fees. For all providers, entrance requirements and screen-

ing procedures (financial and health-oriented) are analyzed, but this may be most critical to life-care organizations, which are essentially offering long-term care insurance to residents.

The Type B, or modified, contract typically offers the same range of service levels and amenities as a life-care contract, except that the contract typically provides only a fixed number of skilled nursing days at no charge, with any excess utilization subject to a full or discounted per diem charge. The total number of fixed days can vary depending on the organizations specific contract details. When a resident moves permanently to a higher level of care, he/she pays higher rates for that service level. Typically, entrance fees and monthly maintenance fees are lower for CCRCs offering Type B contracts, reflecting the substantial reduction of the potential health care liability.

The third contract type is the Type C, or fee-for-service contract. Facilities employing this contract type charge different rates for each level of care, and may also offer more services and amenities on a fee-for-service basis. Residents are guaranteed access to nursing care, but pay full per diem rates.

Other features now offered by CCRCs are refundable advance or entrance fees; with these contracts, the refund amount is negotiated in advance, and usually tied to length of occupancy and/or resale of the unit. At this time, a 90% refund model is becoming more common; entry fees under this type of contract are typically significantly higher than non-refundable entry fees, but the organization has limited ability to significantly build reserves after initial fill-up as subsequent resident turnover only generates limited cash flow. Refund policies, while fulfilling a market demand, add an element of risk. Strong actuarially determined reserves help offset these risks. Because CCRC providers frequently offer refundable advance fees as an option, more scrutiny is devoted to how monthly fees are determined and subsequently adjusted, as well as the conditions for the entry fee refund (primarily whether it is dependent on unit reoccupancy). Even the refundable contracts that are dependent on reoccupancy usually have language that sets a fixed time frame for resale before the refund must be returned, typically up to one year. However, this concern is somewhat mitigated if an organization has a history of strong demand and typically refills a unit in a much shorter time frame.

Financial Performance

One of the basic factors that determine financial stability is an organization's ability to match its revenues to its cost structure. In the senior living industry, one basic factor influencing this is the contract type, as noted above. Additionally, a history of monthly and entry fee rate increases as well as pricing philosophy are central to the analysis. Additionally, Standard & Poor's examines the organization's contracts and pricing methodology vis-à-vis its ability to recoup the cost of providing services. On the cost side, Standard & Poor's evaluates trends, particularly with regard to more recent pressures such as liability and workers compensation insurance, and nurse staffing and other labor costs. Finally, Standard & Poor's will review the CCRC's overall financial performance and projections. Key financial indicators include operating and excess margins, revenue and expense growth rates, coverage of pro forma maximum annual debt service, debt burden, and days' cash on hand. The sources and reliability of nonoperating income—including contributions, and endowment earnings—are also evaluated.

Balance Sheet And Capital Program

Cash reserves and overall leverage measures play a key role in evaluating a senior living organization's creditworthiness. A solid balance sheet can offset the risk of the health care liability of a life-care facility, for example, or earnings volatility related to cost spikes or occupancy pressures. Key debt ratios include debt service as a percentage of revenues, the debt-to-capital ratio, debt-service coverage, and the cash-to-debt level. A review of investment policies, asset allocation and endowment spending policies are also examined. To determine whether the cash flows of the CCRCs are sufficient to meet the future health needs of the resident population, Standard & Poor's will also review the most recent actuary's report, with related assumptions.

As in all revenue-bond analysis, Standard & Poor's focuses on the structure of a proposed debt issue from an economic and legal standpoint to ensure that the proposed structure is feasible in light of the obligor's existing financial performance, commitments, and debt capacity. Project-related financings are generally supported by an independent feasibility study prepared by a consultant with extensive experience in the CCRC industry. In addition to the project that is the subject of the bond issue being rated, Standard & Poor's evaluates an organization's strategic and financial plans over a three-to-five year period, including annual capital spending as well as any significant upcoming development projects or future debt plans. Standard & Poor's incorporates to some degree any expected debt or spending that is planned to occur within a one-to-two year time frame, but also seeks to understand the longer-term strategic direction and planned financial goals of the organization.

Legal Criteria

Standard & Poor's legal criteria for CCRC financings are similar to those for health care revenue bond financings. They include:

- A revenue pledge of the CCRC. A mortgage may also be offered.
- A fully funded debt service reserve fund at bond closing.

Residents' and other creditors' claims to entrance fees should be subordinate to debt-service payments.

-Documentation Requirements for CCRCs

Factoring Non-Recourse Debt In Senior Living

Growth strategies in the senior living sector, including development of new communities or expansions and/or redevelopment of existing campuses, represent both an opportunity, and potential added credit stress for rated organizations. Opportunities include increased risk dispersion, the ability to capitalize on demographic growth, leverage management strength, create revenue diversity and expense economies of scale, and allocate overhead expenses over a larger revenue base. Campus redevelopment projects allow organizations to maintain marketability through offering bigger units, more amenities, such as fitness centers, or a wider range of services including Alzheimer's care. Additionally, there are a significant number of senior living organizations that were built thirty or more years ago, which require major reconstruction in order to meet expectations of today's seniors. Typically, such projects are funded primarily with debt, so management must balance the potential long-term benefit of the projects with the near-term construction and financial risk and potential rating impact of the additional debt.

The capital-intensive structure of most developments typically requires the issuance of a relatively large amount of debt, potentially creating financial stress. Long-term debt increases the financial risk of the organization in the near-term by straining the income statement with increased debt service, and increasing leverage on the balance sheet. Standard & Poor's looks at existing "in-ground coverage" as one important measure of financial impact—-whether the existing organization can pay the full amount of the new total maximum annual debt service (as well as its existing debt service) without the benefit of new project revenues, in case the project experiences significant delays in construction or fill-up, prolonged start-up losses, or in rare cases, project failure. With projects that produce new units, the cash and revenue payoff is usually anticipated three-to-five years out, so Standard & Poor's views this as a period of crucial risk. Once the facility achieves stabilized occupancy (typically 90%), the organization has a significant increase in liquidity from the entry fees received upon fill-up, and may use some of this cash to pay down a large portion of the project-related debt—in many cases, this is a scheduled pay down that is part of the original plan of finance.

When developing or acquiring a new facility, an organization can leverage the credit strength of the rated entity by issuing new project debt as part of the existing obligated group. However, many senior living organizations do not believe that 'start-up risk' of a new project should be borne by residents of existing facilities. Additionally, as a practical matter, many credits are not strong enough to successfully handle the costs and risks of a major development project without negatively impacting their current rating. In order to protect residents of existing facilities, as well as protecting their credit strength, some organizations segregate new projects from the rated entity (typically an existing obligated group), by issuing debt through non-obligated subsidiaries, or through non-recourse ventures. In addition, a number of senior living organizations are adopting a range of covenants and organizational structures aimed at protecting, or "ring-fencing" the rated entity.

Documentation Requirements for CCRCs

The following documentation is required to complete any credit analysis:

- Three to five years' audited financial statements, with current and prior-year unaudited interim statements;
- A sources and uses statement for the bond financing;
- A debt service amortization schedule;
- A description of the obligor, including members of the board of directors and management team, and affiliated organizations;
- A description of the service area, including demographic and economic supporting data;
- Utilization and payor mix data for major business segments for the past five years and current year budget;
- Current-year financial budget with supporting assumptions;
- Resident contract types and refund policies in effect for CCRCs; and
- History of advance fees and maintenance fees for CCRCs and/or room rates for nursing home services.

The following additional documents are needed to complete a public rating:

- A preliminary official statement;
- A three-year financial forecast with related assumptions for project financing;
- Legal documents;
- The latest actuary's report;
- The past two years' auditor's management letter comments, with management's response; and
- For new credits, a site visit, including a management meeting and tour.

However, Standard & Poor's seldom views these new entities as totally "off-credit" from the existing organization. Instead, we perform an extensive analysis designed to determine whether the existing organization can be separated, to some degree, from the consolidated credit, and if so by how much. The analysis hinges on how closely the non-obligated entities are tied to the existing obligated group, both legally and strategically. Non-obligated communities that further the mission and strategic intent of the rated organization, that are located near existing obligated communities, and that have the same or a similar name will likely be viewed as very closely connected to the rated organization. We also seek to understand what the financial commitments are between the rated organization and affiliated project, what support has historically been provided, if any, and whether the management team of the rated organization has the ability and willingness to let the non-obligated community fail in a worst-case scenario.

Analytical Treatment Of Non-Recourse Debt

It is Standard & Poor's long-standing practice to factor "off-balance sheet" debt related to a rated organization into the assessment of that organization's financial profile and creditworthiness, regardless of the accounting treatment surrounding the obligation. This includes "non-recourse" debt issued by non-obligated affiliates related to a rated entity. In the not-for profit health care and senior living sectors, the historical approach was to base the rating on a review of the consolidated entity (including both obligated and non-obligated entities, often under a parent organization) rather than only the obligated group, in keeping with Standard & Poor's criteria in other sectors. Under this approach, non-recourse debt and the risks associated with the non-obligated ventures (in this case, typically start-up CCRCs) were fully incorporated into the rated organization. The basis for this position was that the parent entity (which may or may not be part of the obligated group) may have the ability and incentive to divert resources from the financially healthy obligated entity in support of troubled non-obligated affiliates. Efforts to segregate risk, as well as the organization's legal ability and a willingness to divest of troubled entities, were not typically considered. This criteria has evolved in recent years, however, to incorporate the efforts by not-for-profit providers in this sector to segregate risk and to allow for some separation, in many cases, of the rated entity from non-recourse project risk.

In all cases, the rating of a financially healthy obligated group is still constrained by the creditworthiness of the consolidated organization. The central criteria issue is whether a rated entity can be sufficiently insulated (or "ring-fenced") from the credit risks of new communities such that an obligated group can be rated higher than the consolidated entity. Standard & Poor's believes "ring-fencing" is possible in some cases, and has adapted existing criteria such that it is appropriate for not-for-profit organizations. Most importantly, there are both legal and strategic considerations, which focus on both the organization's ability and willingness to allow non-recourse debt to be supported only by its specifically pledged revenue, with no additional support from the rated entity, if the non-obligated venture is not able to meet its financial commitments. The legal criteria include the use of a set of structural features, covenants and collateral similar to those used in corporate sector (see "Ring-Fencing Criteria" below). Qualitative criteria that analysts will examine range from basic operating issues such as co-branding practices and location of the facilities, the strategic importance of the non-obligated facility or facilities, to the financial relationships among the various parties and any history of support for, or divestiture of, non-obligated entities.

If an obligated group is successfully "ring-fenced", the rated credit can have its rating up to a full rating category higher than the fully consolidated analysis would suggest. However, in many cases, a development project is linked to the strategic goals of an organization and therefore the parent or even an obligated group may extend limited support for start-up projects or offers some assistance to a troubled facility before deciding to abandon the venture. Therefore, assumptions regarding the likelihood of any future support are factored in, even if the full amount of debt is not consolidated. The rating decision to 'float' a rating one, two or three notches higher than the rating that an analysis of the consolidated entity would suggest, remains a judgment of the rating committee, but this judgment will be based on four main factors:

- Strategic importance;
- Financial relationships among parties;
- Scope and management resources; and
- Legal issues

As a starting point, Standard & Poor's analyzes the creditworthiness of the consolidated organization, assuming the full debt burden and operational risk of both obligated and non-obligated affiliates. The creditworthiness of the obligated group is also analyzed on a standalone basis, without taking into consideration any risk of non-obligated entities. The ultimate rating is determined by analyzing the strategic value and risk of non-obligated affiliates, as well as the financial relationships among the entities. In addition, the legal structure and security features of the obligated group are analyzed, to determine whether Standard & Poor's "ring-fenc-

ing" criteria may apply. In some cases, even if the obligated group is adequately "ring-fenced" from credit risk of non-obligated affiliates, other factors contribute to a closer linkage than the legal structure alone may suggest.

In general, the rating model looks like this:

Strategic Importance: The Probability Of Support

The single most important judgment that Standard & Poor's rating analysts will make is whether the management team of the rated organization would let the non-obligated community fail in a worst-case scenario. To understand this, it is important to understand the strategic importance of non-obligated facilities. Non-obligated communities that further the mission and strategic intent of the rated organization, that are located near existing obligated communities, and that have the same or a similar name will likely be viewed as closely connected to the rated organization. An organization is likely to provide at least some assistance to a troubled community, or be hesitant to divest of a project that has strategic importance. Another related concept is that the obligated entity may have a "moral obligation" to support a community, particularly if it is co-branded and located in a contiguous or market with existing communities or shares a common sponsor—often a religious entity. This concept is based on the supposition that a rated entity may, from a practical standpoint, be forced to support a non-obligated facility, if not doing so could potentially cause damage to an organization's reputation or standing within a community. For example, if a "John Doe House", a (fictional) CCRC, adds a second campus in close geographic proximity and calls it "John Doe House South", and the campuses are associated with each other from a marketing perspective, the parent or even John Doe House management would likely support a troubled John Doe House South rather than abandon it to bankruptcy or closure.

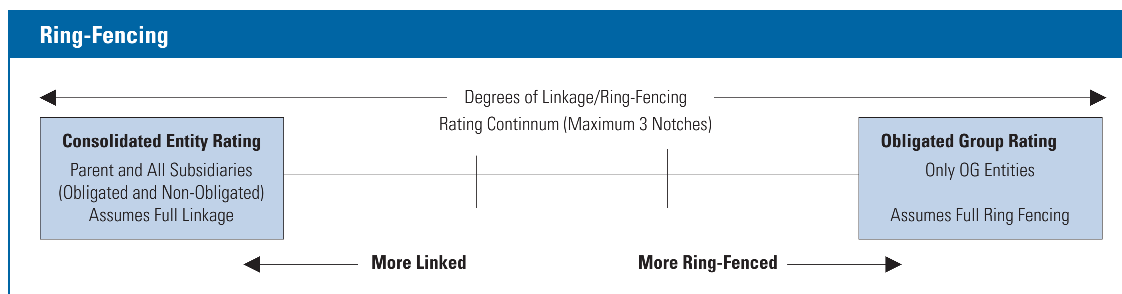
Financial Relationships Among Parties

Other evidence of linkage or separation can be detected from an analysis of the financial commitments among the obligated and non-obligated entities, as well as the obligated group's track record in dealing with affiliated projects. Most obvious areas to examine include inter-company loans, cash transfers or other movement of funds or undertaking of liabilities among obligated and non-obligated entities. Another important, but more subtle financial relationship that exists between obligated and non-obligated entities (or between a parent and its obligated and non-obligated affiliates) is related to management services. Management relationships and fees charged for management services should be clearly formulated and documented in the form of a contract. Waiving or subordinating management fees for projects that are experiencing financial difficulty is one means of providing support for an entity that falls short of explicit cash transfers, loans or subsidies. Similarly, an undefined fee methodology (or charging of higher or lower fees to communities based on financial health) can be a way to assist an ailing community. An organization's track record in this regard is germane to assessing the degree of linkage or separation of an obligated group. A history of divesting of under-performing organizations is also helpful in this area.

Scope And Management Resources

One of the most qualitative and least tangible areas of analysis is the question of the commitment of management resources toward non-obligated ventures, and the magnitude of the non-obligated projects relative to the obligated group. Even if the obligated group is legally "ring-fenced" and has no history of financial support for non-obligated projects, significant growth activities can pose credit risk, by potentially stretching the resources of the obligated group's management team or causing management to lose focus on core operations. Related to this, the sheer scope of non-recourse debt relative to the obligated group may be a credit concern, for example if non-recourse debt is orders of magnitude larger than the obligated group debt and financial resources.

Ring-Fencing



Legal Issues Related To Non-Recourse Debt

Standard & Poor's analysis hinges upon assessing both the willingness to support non-obligated entities (demonstrated by the issues above), and the ability of an organization to do so. Across Standard & Poor's, the ability to rate an obligated group or subsidiary higher than the consolidated entity hinges first on whether the entity meets a rigorous set of legal criteria (see 'Ring-Fencing' section below). The security features are designed to limit a parent entity's ability to drive the subsidiary (in this case, an obligated group) into bankruptcy, or to transfer assets or liabilities in support of non-obligated affiliates. If the legal criteria for "ring-fencing" are met, then the other factors affecting linkage are then considered.

In addition to security features and other legal issues, the regulatory environment in which a CCRC operates also plays a role in the analysis. States with strong regulatory oversight may limit or prohibit a CCRC from transferring funds outside the community to troubled affiliates. A strong regulatory environment could have positive credit implications in this regard.

'Ring-Fencing' In The Not-For-Profit Hospital Sector

Historically, the analysis of other health care credits (i.e. acute care hospitals and health care systems) has been based on fully consolidated results including obligated and non-obligated parent companies and subsidiaries. At times this has benefited entities especially when closely aligned, for example when non-obligated foundations with large endowments are factored into overall ratings. However, in the acute care sector, the most common non-obligated subsidiaries have been physician enterprises. Typically these entities dilute the performance of the obligated group. However, the physician enterprise are generally essential to the on-going operations of the organization as a whole, so no matter how legally segregated they are, Standard & Poor's considers them to be very closely linked to the rated entity and therefore a consolidated approach is used. Other types of subsidiaries can range from pharmacy operations, to nursing homes to medical equipment companies as well as to a broad range of horizontal expansion into control of other hospitals. While we expect to continue to review these arrangements in light of the "ring-fencing" criteria, these types of subsidiaries usually support the overall mission of the organization, are direct subsidized by the obligated group directly or indirectly, and thus would continue to be reviewed as a single organization for credit rating purposes.

'Ring-Fencing' Criteria

In general, the rating of a weaker parent constrains the rating of an otherwise financially healthy, wholly owned subsidiary. A weak parent has the ability and may have the incentive to siphon assets out of its financially healthy subsidiary and to burden it with liabilities during times of financial stress, although this scenario is less likely within a not-for-profit context. The weak parent might also have an economic incentive to file the subsidiary into bankruptcy if the parent itself were forced into bankruptcy, regardless of the subsidiary's stand-alone strength.

Ring-fencing may allow for an exception to this rule. In appropriate circumstances, a package of enhancements, including legal and structural inhibitors to a filing of the subsidiary by the parent and provision of so-called "nonpetition" language by the parent, along with other considerations such as regulatory insulation, may allow a subsidiary's rating to be elevated over the credit quality of the consolidated entity (assuming the stand-alone rating of the subsidiary merits the same). Typically, Standard & Poor's will not rate even ring-fenced subsidiaries more than three "notches" above the credit quality of the consolidated entity.

Additional Documentation Requirements For 'Ring-Fencing'

- Audited financial statements of obligated group and consolidated audited financial statements of parent and all affiliates (three years)
- Obligated group trust indenture and other legal documents, including any that evidence limitations on transfers of cash outside the obligated group
- List of board members of parent, obligated group facilities, and non-obligated facilities, including identification of independent directors
- Number and composition of board members required to transfer assets outside a community, make loans to affiliates, or file bankruptcy.
- Reserve powers of the parent and/or obligated group board of directors, particularly with regard to nomination and replacement of directors
- Copy of management services agreement and information on management fee methodology
- Any limited support agreements from parent or obligated group to non-obligated affiliates, including plans to replenish resources at the parent level if support agreements are drawn upon;
- Legal opinions (non-consolidation)
- Information on the role of the state regulatory agencies governing CCRCs.

Structural features

Structural features are focused on addressing two main concerns: (1) whether a healthy obligated group's assets may be subject to substantive consolidation in bankruptcy in the event of insolvency of the parent or non-obligated entities; and (2) whether the parent may have the ability to cause the subsidiary to file itself into bankruptcy. Moreover, the structure of a "ring-fenced" subsidiary should have mechanisms in place restricting the ability of the parent to siphon off assets or burden the subsidiary with liabilities. In structured finance, these concerns are partially addressed through the use of a special purpose entity (SPE) subsidiary. It is conceivable that some of these features can be applied to senior living 501©(3) organizations, including:

- The incorporation of each obligated group facility into a separate 501©(3), special purpose operating entity (SPOE). A special purpose operating entity is not a bankruptcy remote entity, as that term is traditionally used in structured finance transactions, although it does share some characteristics);
- The creation of a duty of the board of directors of the special purpose operating entity towards the residents of the senior living facility in question (this should be consistent with the charitable purposes for which the 501©(3) was established);
- Provision of a non-consolidation opinion between the parent and the special purpose operating entity, where appropriate;
- "Independent director" on each SPOE board, unrelated to or affiliated with the parent whose vote is required to file the facility into bankruptcy and to approve contracts, notes or other obligations with the parent.

Covenants

Covenants are often offered as a means to justify ratings separation, particularly protective covenants (designed to limit transfers of assets) and the nonpetition covenant (in which the parent undertakes not to file the subsidiary into bankruptcy). Standard & Poor's view is that in and of themselves, covenants do not sufficiently insulate a subsidiary from its parent, but a tightly drafted covenant package is desired, including but not limited to:

- Negative pledges.
- Nonpetition covenant.
- Restrictions on asset transfer and inter-company advances.

Collateral

If debt issued by the senior living obligated group debt is fully secured by a pledge of all or substantially all of the assets of the obligated group facilities, such pledge should reduce the parent's incentive to attempt to cause the obligated group to voluntarily file itself into bankruptcy. Such a security pledge could include:

- A gross revenue pledge and a general pledge of assets, including mortgages;
- The parent's pledge of any interest in the subsidiary;
- All pledges must be perfected; and
- In addition, all non-recourse debt must be similarly secured.

For a complete description of Standard & Poor's 'ring-fencing' criteria, please see, "Ring-Fencing A Subsidiary", RatingsDirect, Oct. 19, 1999. ■

Physician Groups And Faculty Practice Plans

Health care industry changes, including reimbursement reforms at the state and national levels during the past 15 years, have helped develop and expand more cost-effective outpatient treatments. At the same time, limitations on physicians' income and the emergence of large hospital-based outpatient departments have increased physician group competition with hospitals by bringing business into physician-owned outpatient settings that traditionally have been performed at hospitals. Ambulatory surgery and radiology procedures are two good examples that are often offered by well-organized, well-capitalized multi-specialty group practices, and typically at a lower price than hospitals. These physician groups occasionally need access to capital to build facilities and purchase equipment that will allow them to provide cost-effective health care services.

Rating Criteria

Standard & Poor's Ratings Services applies the following criteria to the outstanding public finance group practice ratings. In addition, portions of the criteria are applicable to the analysis of physician components in integrated delivery systems.

Rating considerations for not-for-profit physician groups include analysis in the following categories:

- Physicians
- Operations
- Finances
- Competition
- Leadership
- Institutional relationships
- Information systems; and
- Legal covenants.

The most critical factors for ratings assessment are the physicians, operations and finances. The other aspects of the clinics discussed below contribute to strength in these key areas:

Physicians

The most critical part of the rating process focuses on physicians, since they are the actual revenue producers. The composition, qualifications, quantity, and quality of the physician group play an important part in the analysis. In addition, physician leadership's philosophy and overall strategic vision, including managed care contracting and willingness to forge alliances with alternative providers, is an important rating factor. Although the analysis will be slightly different for stand-alone group practices compared with faculty practice plans, in general, Standard & Poor's reviews the following factors:

- Number and specialty mix of physicians, including adequacy of primary care physicians currently in the group, as well as recruitment plans and related funding;
- The nature of the local physician market (for example, practice patterns, general availability of physicians, and the competitive position of the group in the market);
- General administrative factors including the credentialing process as well as the type of employment contract used—noncompete clause, compensation allocation consistent with managed care incentives, salaries competitive with industry norms by specialty and with local salaries;
- Top-10 revenue-producing physicians (including percent of total revenues generated, age, and tenure with the group), the overall staff's average age, board certification rates, as well as additions/deletions to the staff in the past three years; and

For faculty practice plans, ages and tenure of the chairs of the top-five revenue-producing departments, vacancies in the major services (internal medicine, surgery, obstetrics, family practice), and percent of tenured faculty.

Operations

The history of the group practice, its structure, and its longevity are the starting points in Standard & Poor's evaluation of the credit. The primary consideration is the likelihood that the group practice will remain viable for the life of the bonds. Consequently, Standard & Poor's Public Finance Ratings group will rate debt issued only by not-for-profit group practices; the financial and operational incentives of a proprietary group generally are not consistent with the capital retention levels necessary for an investment-grade rating. Overall investment grade physician groups will demonstrate a competitive business position, a sound balance sheet and a track record of adequate cash flow and debt service coverage. Beyond understanding how and why the physicians came to work together, Standard & Poor's must assess the group's ongoing strategy and its appeal to physicians in the future.

Standard & Poor's focuses primarily on multi-specialty clinics with 100 doctors or more. Among the operational aspects of the clinic Standard & Poor's examines are:

- History of the group;
- Market position and breadth of patient draw;
- Nature of relationship with other medical facilities
- Economics of service area;
- Current physical assets and proposed future needs; and
- Debt structure including use of bond proceeds.

Competition

Multi-specialty group practices compete not only with other groups and solo practitioners, but often with outpatient surgery centers, diagnostic centers, testing laboratories, and hospitals. A group's ability to attract and retain physicians and patients is paramount to the rating. As competition for patients among physicians and other providers intensifies, group practices must demonstrate their cost effectiveness and ability to attract patients and profitable managed care contracts. Multi-specialty groups must demonstrate their ability to control costs and maintain profitable operations in this environment.

The key competitive factors reviewed include:

- Physician competitors for patients, including other groups, solo practitioners, and hospitals;
- Nonphysician competitors seeking to provide medical services directly to patients, including

hospitals, ambulatory care, surgery, and emergency centers, other professionals and payors, such as HMOs and insurance companies; and
- Breadth and nature of managed care contracts and relationships.

Leadership

Standard & Poor's meets with physician and non-physician leadership during the rating process. It is important to understand the strategic goals of the physicians and administration to ensure that they are compatible. Standard & Poor's looks for strong leadership from the board of trustees and prefers governance to be community oriented and not consisting solely of physician group members.

Management should be appropriately credentialed, with ample experience in the management of physician group practices. In areas with high managed care penetration, a professional devoted to contracting practices and monitoring adds strength. The review includes:
- Management tenure and qualifications;
- Review and discussion of strategic planning issues;
- Compensation, financial, and operating policies;
- Finances and operations of other subsidiary or sister corporations; and
- Influence of university management and policies on faculty practice plans.

Institutional relationships

Group practices have many opportunities to cooperate, join, and contract with hospitals, universities, insurance companies, and other payors. In addition, partners ranging from hospitals to large for-profit specialty companies are joint venturing with physicians in a variety of projects from ambulatory centers to specialty hospitals. Standard & Poor's examines formal and informal relationships that exist with other institutions.

For stand-alone group practices Standard & Poor's reviews:
- Operational relationship with primary admitting hospitals;
- Financial contracts and/or joint ventures to share costs, revenues, or overhead; and
- Managed care contracting practices.

When evaluating faculty practice plans, issues surrounding university and medical school finances as well as the dean's tax are explored. To the extent that the university hospital has forged alliances with other community providers, the relationship between the faculty group and local physicians will be discussed.

Information systems

To manage a health care enterprise efficiently and profitably, integrated information systems are necessary. Standard & Poor's will review the medical group's plans for development of an electronic medical record either on its own or in conjunction with local partners such as nearby hospitals. In addition Standard & Poor's will assess the group's ability to meet and monitor any required quality metrics as part of its reimbursement agreements. Standard & Poor's will also look for the group's ability to generate certain key reports from its information systems such as:
- Managed care members profile, benefit plan, utilization, and cost per member per month;
- Encounters per full time equivalent (FTE) physician by new and existing patients;
- Hospital inpatient use rate and cost per patient per month versus regional averages;
- Revenue and expense by physician, payor, and service;
- Analysis of clinical outliers and out-of-area utilization; and
- Physician profiling reports including any reports needed to meet pay for performance targets.

Finances

Standard & Poor's will review five years of audits based on the accrual method of accounting as a starting point in the financial analysis. Although accrual-based accounting is preferred, Standard & Poor's recognizes that it may not be available for some faculty practice plans, based on their financial integration with universities. Management letters, reimbursement issues, research commitment, fund raising, working capital needs, and future financing plans also are explored. The revenue and expense components of the income statement are examined to assess overhead levels and allocation, physician compensation, sources of revenue from outside payors, and sources of revenue from clinical departments and research. Questions concerning the balance sheet include trends in accounts receivable and collection rates, adequacy of malpractice reserves, level of cash reserves and restricted funds for research and capital investment, strategic and routine capital needs, and other liabilities.

Information requested includes:
- Five years of financial statements, most recent interim statements, and if available, projections, including flow of funds to and from associated university or medical school, if applicable;
- Utilization information—patient visits, new patient growth, covered lives, and encounters per physician;
- Payor mix as a percentage of revenues;
- Research grants, expenses, and subsidies;
- Joint-venture documents;

- Other liabilities, such as incurred but not reported claims, malpractice claims paid and pending, guarantees, leases, and other debt; and
- Endowment funds available at the university in support of faculty practice operations or debt.

Legal covenants

Standard & Poor's requires legal and security provisions similar to those used in other health care financings. A GO or revenue pledge is customary, and a mortgage is not required, although a negative pledge on assets is needed if the GO pledge is used. A liquidity covenant is an important consideration and may be requested to help maintain balance sheet strength. Criteria for funding debt-service reserve funds vary according to the rating category and are consistent with other health care financings. Although Standard & Poor's prefers to have physician salaries subordinate to the repayment of bonds, this covenant alone is not sufficient to ensure an investment-grade rating, since, without adequate physician compensation, the clinic is at risk for turnover and subsequent loss of business and revenue. ■

Human Service Providers

Human service providers serve individuals who have development disabilities or are suffering from mental illness, and who typically need substantial support to function at their highest level. The human service providers support their clients with distinct programs to meet distinct challenges.

Criteria

The following rating approach is applicable to quasi-governmental providers and freestanding traditional nonprofit community agencies. A provider's organizational model, governmental relationship, and type of service provided, among other factors, will be given greater or lesser weight, depending on each situation. Due to the constrained reimbursement systems in which the providers operate, and the generally weak reserves held by these organizations, ratings tend to range from high speculative-grade ('BB' level) to medium investment-grade ('A' level).

Major factors in Standard & Poor's Ratings Services review include:

- Service essentiality;
- Provider assessment;
- Management quality;
- Financial analysis;
- Funding agency relationship;
- Fund raising history; and
- Pledged security and legal structure.

Essentiality

The most important factor is essentiality, which incorporates the likelihood that government, through funding agencies, will continue to fund certain critical services. Because many human service providers have break-even operations and limited liquidity, Standard & Poor's relies on strong service essentiality to boost credit quality.

The courts have mandated community-based treatment for developmental disabilities and mental health, making these services essential. On the other hand, chemical dependency programs as well as day care and training programs receive less support from the judiciary, government, and the public. Therefore, Standard & Poor's views these services as less essential as well. However, if a provider can demonstrate a history of funding support for less essential services, this would be a positive factor in the rating determination. A history of funding support by leading state or local agencies through good and bad times is also a critical factor.

The provider

Standard & Poor's looks at two key items when assessing the provider: An analysis of services provided and the provider's market position.

Services should be self-supporting from their funding sources with a minimum of subsidization from investment income or contributions. A broad array of services offered to a variety of populations minimizes the impact of funding reductions or market forces in one or two particular service lines. However, if taken to the extreme, this strategy can expose the provider to additional risk if lines of business are new and unproven, or do not complement other service offerings. For example, if a provider takes on a highly specialized treatment, such as services for severely autistic children, without prior or related experience, this can expose the provider to additional risk. Standard & Poor's also reviews geographic diversity,

which can diversify funding and market risk. However, there is additional risk if the provider's service area is too large to manage, or so small that it is vulnerable to competition.

Standard & Poor's analysis of market position seeks to understand the provider's importance in a service area. A dominant market position, including largest number of clients served, most contracts received, or high barriers to entry in a specific service niche are favorable factors. Standard & Poor's investigates market penetration, contracts received and lost, as well as competitors' strengths and weaknesses. Of particular concern are a number of for-profit providers that are entering the market. In addition, it can be difficult to assess the competition since measurable units of output and cost are not standard and often not measured within the industry.

Management

The quality of management affects all factors in Standard & Poor's credit evaluation. Management's history and track record, its ability to maintain a viable organization and strategically move it toward the future are integral to Standard & Poor's analysis. Evidence of an experienced management team, one not reliant on one or two people, is key. Standard & Poor's assesses the sophistication of management practices by analyzing strategic plans, use of cost measures, and standard procedures. Standard & Poor's will also investigate the strength and oversight of the board of trustees. Where appropriate, accreditation by national bodies, such as the Commission on Accreditation of Rehabilitation Facilities, can indicate compliance with professional standards. In addition, the level and degree of state oversight is especially important given overall state mandates to provide these services.

Financial analysis

Financial analysis, similar to that for revenue bonds, emphasizes a strong track record of financial viability that allows the organization to make timely debt service payments. This includes an historical analysis of utilization and types of contracts, and how these contribute to profitability. Standard & Poor's looks at referral patterns to gauge whether major referral sources will continue. Standard & Poor's also looks for evidence of a service backlog, such as a waiting list. Since providers have minimal price flexibility, Standard & Poor's emphasizes cost control in its analysis and looks for treatment costs on a per-client basis. Standard & Poor's also asks providers to discuss examples of historical problems affecting finances, management, funding and treatment, and how they were remedied.

Revenue and income trends are reviewed including operating and excess margins, debt service coverage and the overall debt burden of the organization on a historical as well as pro forma basis if new debt is being issued. Liquidity and debt structure are also important to determine the provider's flexibility and cushion against future events. Various liquidity measures, including unrestricted days cash on hand as well cash to pro forma debt are two important metrics as well as various measures of overall leverage. Most human service providers are not highly profitable organizations, and margins are generally not as high as for comparably rated health care providers. Some providers rely on gift income to balance operations.

An established fundraising program, and a steady stream of bequests and fundraising can sometimes offset weak operating performance if similar levels are achieved on a recurring basis. However, over time, most organizations rated by Standard and Poor's are able to break-even based on program revenues alone. The presence of an endowment can provide a steady source of operating income for some providers. In this case, Standard and Poor's would ask about whether there is a standard spending policy that can provide some operational stability, or whether the endowment is only used to cover operating deficits that might occur.

Funding agencies

An integral component of the provider's financial strength is its relationship with the funding agencies, the major sources of revenues. Since providers often rely on one-year renewable funding contracts, it may be difficult to assess revenue-stream quality. Standard & Poor's generally speaks directly with the major funding agency in order to understand several key points about the durability and strength of major contracts. These points include:

- The nature of the contracts with the provider;
- How contracts are awarded and renewed;
- The history of cancellation and funding cutbacks; and
- The day-to-day working relationship with the provider.

Standard & Poor's reviews the nature of the contracts and their award procedures to evaluate the competitiveness of the process. Standard & Poor's favors contract renewals based on performance, not price, because the former supports financial and treatment stability. If contracts are frequently canceled, Standard & Poor's will be concerned about the quality of the selection process as well as the quality of the agency's revenue stream. Cancellations will be unlikely when there are strong cooperative relationships between the agencies and providers. In addition, the use of various types of intercepts from different funding programs can potentially provide credit enhancement.

Legal and security provisions

The legal and security provisions are also similar to those found in revenue bond financings. In general, the provider's entire revenue stream will be pledged and assigned to the payment of debt service. Other legal provisions should include the presence of a debt service reserve funded at maximum annual debt service, appropriate security pledge, and assurances that providers have made provision for successors to meet debt service payments. Providers also must meet published Standard & Poor's guidelines on permitted investment. ■

Higher Education

College And University Credit Ratings

The evaluation of private colleges and universities focuses on four core areas—demand, finances, management, and debt. Demand is particularly significant because student enrollment often drives financial operations, especially at tuition-dependent colleges and universities. Enrollment declines can result in shortfalls in tuition revenues, directly affecting budget operations. Since most private universities rely heavily on tuition revenues, enrollment and admissions trends are therefore critical. These trends are perhaps even more significant than for public institutions, where state support can sometimes cushion the impact of enrollment declines. A school that experiences weakened demand may be forced to cease operating, while a school that suffers from deteriorating finances can recover if demand is favorable, and management is astute.

When asked to evaluate the credit or debt rating of a new private institution, Standard & Poor's Ratings Services will often make a site visit to the institution. At a minimum there should be a conference call with management for any newly rated credits. Seeing the institution provides an opportunity to see facilities from an outside perspective—an especially important consideration for a product that is discretionary and highly consumer driven. The process involves evaluating a full range of information ranging from enrollment and demand information, to 5 years of audited financial results, budget information, and other information about the institution.

Demand

Standard & Poor's evaluates an institution's demand in the context of the school's niche and the current higher education environment. Demographic trends, the popularity of particular types of programs, and the existence of competing institutions also are incorporated into the rating process. Standard & Poor's measures demand in terms of enrollments, applications, acceptances, student quality, yield, and retention.

Enrollment

Standard & Poor's first examines enrollment size and trends. While size is not by itself a primary rating factor, it can indirectly affect the rating. Smaller institutions tend to have more limited program offerings, making them more vulnerable to shifts in program popularity. Furthermore, for smaller institutions, the loss of a few students can have a proportionately greater impact on revenues. A small college that has little or no financial cushion and limited budget flexibility can find itself particularly vulnerable. However, many students prefer a small college setting for the personal attention and level of involvement it may provide, and there are, indeed many highly rated small colleges. Whatever a school's size, enrollment trends are analyzed, and the reasons for upward or downward cycles are determined. Specialized schools tend to be smaller than more comprehensive institutions.

To isolate particular trends, enrollment is broken down into headcount and full-time equivalents, graduate and undergraduate students, and full and part-time students. Often, enrollment in particular programs is examined. Application, acceptance, and matriculation information provides an ongoing measure of demand for an institution and reveals the school's admissions flexibility or ability to cope with changes in student demand. While all three figures often fluctuate from year to year, Standard & Poor's focuses on general trends and their consequences. Standard & Poor's also evaluates information about the number of transfer students, and selectivity information related to transfers. For some institutions, transfer students can supplement a weak retention rate.

Enrollment in nontraditional programs—such as adult learners, noncredit or nondegree programs—tends to be more volatile than enrollment in traditional four-year college degree programs.

Standard & Poor's requests at least five years of demand information for new ratings.

Flexibility

An institution's admissions and program flexibility is an essential part of demand analysis. The more flexible an institution, the better able it is to deal with the vagaries of demographic declines, economic downturns, increased competition, and changing program preferences. Standard & Poor's assesses an institution's flexibility in seven areas:

Selectivity. Selectivity is measured by an institution's competitive position and the degree of difficulty in gaining admission to an institution. Standard & Poor's evaluates the absolute number of

applicants to an institution's programs—for undergraduates, graduate, and professional students. Standard & Poor's measures completed applications only, and evaluates the acceptance rate. For the most competitive institutions, acceptance rates of below 20% are increasingly common. Among the investment-grade rated universe, acceptance rates vary from a low of 5% to as many as 95% of students being admitted from completed applications. Matriculation rates, measured by the percentage of admitted students who enroll, range from as low as 15% to as high as 80%. Generally, the lower the acceptance rate and the higher the matriculation rate, the more competitive the institution. Sometimes, more specialized schools such as engineering-based universities, or art and music schools exhibit a high degree of self-selection. Acceptance rates may be slightly higher than for other comprehensive institutions, but at the same time, matriculation rates may be higher as well. Standard & Poor's considers whether a particular niche changes the degree of selectivity for an institution.

Geographic diversity. As a rule, the wider an institution's student draw or geographic diversity, the less likely it is that a regional demographic downturn will affect enrollment. Hence, a wide geographic draw is a rating strength. However, in attempting to widen its draw, an institution may lose ground on its matriculation rate, since applicants from farther away are often less likely to matriculate than those closer to the college. Sometimes institutions attempt to widen their geographic draw, but they may do so at the expense of their historic demand base. States like California, Texas, and Florida (high growth states) create special circumstances in the assessment of demand. Rapid population growth and the vast population in these states makes it difficult for an institution to expand geographic diversity. Location in a high growth state is generally viewed as a positive credit factor for private institutions as the potential demand for an institution grows naturally.

Student quality. Strong student quality, as measured by class rank or average high school GPA, standardized test scores (SATs and ACTs), and other factors, enhances a school's ability to withstand a decline in demand. Schools with high-quality standards often can maintain enrollment by lowering admissions requirements. Since student quality measures differ substantially from one college to another, care is taken to understand the method used at the institution being rated. While student quality measures are one indicator of flexibility, Standard & Poor's never views these scores and ratios in isolation.

Faculty. High levels of tenured faculty generally mean higher levels of fixed expenses for items such as salary and benefits. In addition, fixed faculty levels may not allow a school to easily change program offerings to reflect current demand, therefore limiting an institution's flexibility. Applications, in turn, may drop off if program offerings do not match current preferences. A high tenure rate can create problems if the number of faculty needs to be adjusted. Standard & Poor's considers a tenure ratio of over 70% to be somewhat constraining. Nonetheless, most highly rated institutions also have a high rate of tenure for full-time faculty.

Documentation Requirements

Bond documents

- Bond resolution or indenture.
- Lease or mortgage.
- Official statement.

Demand information

- Five years of headcount enrollment information broken down by undergraduates and graduates and reflecting full- or part-time status.
- Five years of first-time freshman application information, including acceptances, matriculants, and student quality indicators and average test scores.
- Top 10 competitor institutions and win/loss statistics, if available.
- Program offerings indicating additions and deletions of programs over the past five years.
- Five years of student fee tuition and room and board charges.
- Five years of faculty information broken down by full- and part-time faculty, percentage tenured, and percentage holding doctorates.

Financial information

- Five years of audited financial statements and current year budget summary.
- History of state appropriations and formula used to determine appropriation, if applicable.
- History of annual giving, capital campaign, and fund drives, including participation rates and goal success.
- Endowment investments, investment reports, and spending policy.
- Capital improvement and future debt plans, and comprehensive debt service schedule.

Management

- Brief management biographies.
- Description of governing board or body and relationship with institution.
- Strategic plan.

Program offerings. Schools with highly specialized programs can fall out of favor quickly. On the other hand, schools with specialized programs are often successful because of a lack of significant competition, or a niche program. Conversely, comprehensive institutions with a wide variety of undergraduate offerings plus many strong graduate programs generally experience less volatile enrollment, even if demand falls off in a particular area. Standard & Poor's examines the popularity of various curriculum offerings and notes program closures and openings.

Competition. In analyzing competition, a key question is, which colleges does this institution win or lose students from or to? Although exact win/loss statistics can be hard to obtain, such information gives Standard & Poor's insight into the institution's competitive position. Analysis of competition enables Standard & Poor's to determine whether the school has its own niche, or whether it must constantly change its programs to adjust to external competition. Obviously, first-choice schools are less vulnerable than students' second or third selections.

Retention and graduation. A trend of increasing attrition is a sign of rising student dissatisfaction and is often a precursor to declining demand. The reasons for such a trend, and actions taken to correct it, are examined. The nation's most selective institutions generally demonstrate freshmen reten-

Selected College/University Financial (FASB) Ratios

Ratio	Definition
Revenue diversity (all numerators divided by total unrestricted operating revenues)	
Tuition dependence (%)	Numerator = gross tuition and fees
Gifts and pledges (%)	Numerator = annual fund gifts and pledges
Endowment income (%)	Numerator = endowment spending policy income
Health care operations (%)	Numerator = health care operating revenues
Auxiliary operations (%)	Numerator = auxiliary system operating revenues
Expense and financial aid ratios	
Instruction (%)	Instructional costs/total operating expenses
Tuition discount (%)	Total financial aid costs/gross tuition and fees
Financial aid burden (%)	Total financial aid costs/total operating expenses
Bottom line results	
Net operating income (NOI) (%)	Change in UNA/total unrestricted operating revenues
Net income (IN) (%)	Change in UNA/total unrestricted revenues
Return on net assets (%)	Change in total nett assets/total net assets (BOY)
Balance sheet ratios Liquid ratios	
Cash and investment/operations (%)	Total cash and investments/total operating expenses
Unrestricted resources/operations (%)	Unrestricted resources/total operating expenses
Expendable resources/operations (%)	Expendable resources/total operating expenses
Debt ratios	
Unrestricted resources to debt (%)	Unrestricted resources/total debt
Expendable resources to debt (%)	Expendable resources/total debt
MADS burden (%)	MADS/total operating expenses
Full-time equivalent measures	
Net tuition per FTE (%)	Tuition revenue less financial aid/FTE students
Revenue per FTE ($)	Total operating revenue/FTE students
Expenses per FTE ($)	Total operating expenses/FTE students
Pro forma debt per FTE ($)	Total pro forma debt/FTE students
Unrestricted resources per FTE ($)	Unrestricted resources/FTE students
Expendable resources per FTE ($)	Expendable resources/FTE students

UNA—Unrestricted net assets. MADS—Maximum annual debt service. Unrestricted resources—(UNA - (net PPE - long-term debt). Expendable resources—(UNA + TRNA - (net PPE - long-term debt). PPE—Property, plant and equipment. TRNA—Temporarily restricted net assets.

tion rates of 90% or more. A retention rate of 65% or below, or conversely, an attrition rate of 35% from year-to-year can be cause for concern. Graduation rates nationwide are dropping over time, and a failure of students to continue their educational progress represents a significant concern for institutions, both in terms of maintaining institutional demand and demonstrating favorable outcomes. Graduation rates tend to correlate with selectivity—the more selective an institution, the higher the four-and five-year graduation rates. Institutions with a large number of engineering programs tend to have slightly lower four-year graduation rates, but five-year graduation rates should be closer to the norm for its competitive peers.

Finances

Standard & Poor's analysis of a private university's financial strength focuses on revenue and expenditure composition, financial operating performance, financial resources, balance sheet liquidity, and debt burden. Standard & Poor's evaluates at least five years of historical audited information, as well as current year's budgets to actuals, and any forecasts or multi-year financial plans that are being used by management.

Revenues. Standard & Poor's evaluates historical and projected trends in revenue composition. A diversified revenue base is viewed positively, since multiple revenue sources tend to mitigate fluctuations or shortfalls in an individual revenue stream. Larger institutions with graduate programs and research activities tend to have greater revenue diversity. Many smaller colleges and universities also demonstrate less dependence on tuition and fees because of gift income and endowment levels, which provide annual operating income. However, at many private institutions, tuition and fee income usually accounts for at least 20% of total revenues. Standard & Poor's considers financial aid to be a discretionary expense item, and therefore we gross-up tuition and fee revenues. Unlike the health care sector, where discounts are contractually determined, financial aid is not a contractual obligation. Research grants, endowment income, private gifts, public grants, and auxiliary income from dormitories, dining, and parking facilities can reduce reliance on tuition.

Standard & Poor's assesses an institution's ability to raise revenues through tuition adjustments, intensified research activities, or auxiliary operations. Tuition rates are compared with competitors' charges to determine rate flexibility. Research grants are reviewed for diversity in source, purpose, and recipient. For most institutions, research revenues tend to be nearly equal to research expenses, although a thorough accounting of all costs may show otherwise—that the costs of research actually exceed revenues. A new area of revenue for many colleges and universities is patent income and royalties, especially from the development of new drugs. Generally this revenue is a small source for most universities, however, major discoveries can lead to hundreds of millions of dollars over the life of a patented drug. Generally, these revenues are viewed favorably and can provide additional revenue to an institution. Conversely, the revenues tend to be accruing to already highly rated, and usually revenue-diverse, institutions.

An institution's endowment spending policy also is reviewed to determine income-raising capability and to ensure that the endowment corpus is being preserved. Many colleges and universities are experimenting with new spending models and moving away from an historical industry standard that allows spending 5% of a three-year moving market value average. Concerns that might cause an institution to adjust its endowment spending model include smoothing spending levels in volatile markets and guaranteeing a minimum or maximum level of spending. Ultimately, institutions that adjust their endowment spending models are hoping to improve the predictability of spending rates. Whatever the model, Standard and Poor's examines deviation from prior spending practices, especially when the rate of spending exceeds or is substantially lower than comparable peers.

Finally, Standard & Poor's examines past fundraising experiences, as well as planned fundraising efforts, and proposed purpose of gifts. Alumni participation rates usually are highest for colleges and universities, which have produced mostly undergraduates. Alumni of graduate and professional schools tend to donate at lower rates than alumni with undergraduate degrees. Alumni participation rates tend to be highest at small to medium, liberal arts colleges, where rates of 40%-60% are not uncommon. Alumni participation rates are lower at public colleges and universities, but some flagship public universities, which have produced hundreds of thousands of alumni, have strong fundraising records and development potential.

Expenses. Standard & Poor's evaluates expenses and assesses an institution's ability to reduce costs if revenues decline. A high ratio of fixed to variable costs limits this flexibility. Faculty commitments, financial aid budgets, utility costs, plant maintenance needs, health care costs, pension payments, and debt service payments constrain financial flexibility. Standard & Poor's looks at historical expenditure trends and will investigate large percentage increases.

Risk management

Standard & Poor's evaluates institutions for their ability to plan in the event that operations become disrupted for any reason. Many institutions are now developing an office of risk management, or appointing chief risk officers, who oversee the development of contingency and emergency plans for the institution. Standard & Poor's asks about insurance coverage in three areas: property and casualty, business interruption, and liability.

Operating results

Standard & Poor's analyzes a college's income statement over the most recent five-year period, focusing on activity within unrestricted net assets. Generally, Standard & Poor's expects at least modest operating surpluses over the long run, signifying that revenues are sufficient to meet all operating needs, including depreciation and plant renewal expense. However, a one-or two-year operating deficit is not considered a problem, if the school has a large, liquid financial cushion. Standard & Poor's notes whether the school includes depreciation as a budgeted expense. Often, year-end GAAP results are negative, because depreciation was not a budgeted item for the year.

Endowment and long-term investment pools

Depending on its size and restrictions, endowment (or a long-term investment pool) gives an institution significant financial strength and liquidity. Growth trends in endowment are examined, and investment and spending policies are analyzed. Endowment levels are compared with an institution's debt level and budget, and a per student endowment level is calculated and compared with those of other colleges and universities. Generally, the larger the portion of unrestricted endowment, the better, but even a largely restricted endowment can provide significant strength, as it also produces spendable endowment income. Restricted endowment funds also may be somewhat fungible, freeing up other operating funds that can be used for other purposes. In addition, endowments restricted for scholarships or faculty chairs may lend programmatic strengths and help a college attract students and faculty.

Investment performance is compared to broader benchmarks such as the National Association of College and University Business Officers (NACUBO) mean, which is published every year based on a national survey, and to particular benchmarks selected by the institutions themselves. These measures provide a yardstick—how well did the institution's investments perform relative to its choices. Standard & Poor's generally asks for a copy of the investment report reviewed by the board on a quarterly basis. This report typically provides important information on asset classes, recent investment performance, and highlights any anomalies related to investment performance. Liquidity of the endowment is a growing concern as colleges and universities diversify their investment portfolios in an effort to enhance return and reduce volatility. Standard & Poor's asks how frequently the portfolio is valued; management should be aware of what portion of the invested assets are highly liquid—could be valued on a daily basis as marketable securities. If large portions of the endowment are "locked-up" in private equity arrangements, that would need to be disclosed during the rating process. Most schools spend a prespecified portion of their endowment on annual operations. The most common spending policy has been that 5% of a three-year market value average of the endowment will be utilized for operations. Because of recent fluctuations in equity markets, however, more schools are adopting spending policy caps or collars—to spend no more or less than a certain percentage of the endowment. Standard & Poor's considers an endowment spending rate above 6% to be high, and above 8% to be excessive.

Liquidity

In general, liquidity measures how long a school could function without taking in additional revenue. Three different measures are used to assess both operating and debt liquidity: cash and investments, unrestricted resources, and expendable resources. Each of these figures is drawn from the balance sheet and then compared to operating expenses, total debt (long-term and short-term) outstanding, and pro forma debt. Because endowment is included in the balance sheets of private colleges and universities, available liquidity can include sources derived from all funds of the institution—endowment, operating funds, and internal plant funds. Standard & Poor's does not exclude endowment from its assessment of liquidity, unless the endowment is restricted for a specific purpose. Therefore the calculation of available liquidity rests on the type of equity and generally includes only unrestricted or temporarily restricted net assets. However, unrestricted equity and temporarily restricted equity should be supported by sufficient liquid assets such as cash and marketable securities. If unrestricted resources to operating expenses exceed 100%, or a year of annual operating expenses, the school exhibits good liquidity. Conversely, institutions with unrestricted resources to operating expenses below 30% have more limited cushion and operating constraints. Unrestricted resources at less than 25% of pro forma debt are a concern.

Debt

A college or university's total debt burden or total amount of debt outstanding relative to its operating budget also is part of Standard & Poor's financial analysis. One way to measure a university's debt burden is to compare maximum annual debt service to annual operating expenses. A ratio greater than 10% generally indicates an excessive debt burden, and over 7% is considered to be moderately high. However, schools with particularly high levels of endowment and liquidity, and good operating performance, often can support a greater debt load. Unrestricted resources are particularly important when evaluating unenhanced short-term or demand feature debt. Standard & Poor's compares the variable-rate debt burden in a "worst-case scenario" with unrestricted and expendable resources and with operating expenses. There are no guidelines as to what the ideal debt structure should be for a college or university. In general, the higher the level of endowment, the greater the amount of variable rate debt issued by these institution. When a university has a very high level of floating-rate debt (above 50%), Standard & Poor's expects the institution to budget for a higher cost of capital to cover any unexpected rises in interest rates. Most interest rate swaps for highly rated colleges and universities are used to hedge interest rate exposure—to convert variable rate payments to a fixed rate of interest and therefore ensure some predictability in future payments. Standard & Poor's expects that issuers who enter into swaps or other derivative instruments understand their use and can quantify the relative risks of these transactions and provide a swap management plan, whether the swap is used to hedge interest rate risk on debt instruments or to enhance investment return.

Management And Governance

Decisions in admissions, finances, and debt strategy can be critical to an institution's future and reveal a great deal about management's philosophy. The choices made by different schools in very similar circumstances can mean the difference between ongoing viability and financial distress, or even closure. Standard & Poor's analysis evaluates management's:

Ability to foresee and plan for potential challenge

Management's ability to anticipate the impact of events such as changes in the general education market, demographic trends, or deferred maintenance needs is assessed.

Strategies and policies

Whether proactive or defensive, the policies adopted by an institution must be evaluated in light of how realistic or attainable they are. While Standard & Poor's does not try to determine whether one strategy is better than another, it does evaluate whether a strategy seems realistic. For example, a college budget that assumes an incoming class of 500 freshmen when recent new enrollments have consistently been below 450 would not be convincing.

Track record

An institution's track record indicates how management will deal with new situations and problems. Standard & Poor's examines the effectiveness of past operations and plans and evaluates management's ability to lead an institution through industry and environmental shifts.

Tenure

Sudden or frequent management turnover can be a sign of stress or weakness. While less quantifiable in and of themselves, management decisions directly affect the variables involved in Standard & Poor's demand and financial analysis.

Board composition and structure

Standard & Poor's evaluates boards and governance by looking at a number of areas. These include board composition, committee structure, strategic planning, board financial contributions, and board elections. A board should be an independent body that is able to replace a president or other senior leadership. A recent trend is a reduction in the number of board members. Certainly a board needs to be large enough to have an appropriate committee structure: generally including audit, finance, academic affairs, and an executive committee. Most boards meet on a full basis four times a year. Less frequent board activity could be a concern unless there is an active executive committee. A board should be financially independent from the college and conflicts of interest should always be disclosed.

Debt

Legal provisions

Security pledges. Standard & Poor's debt ratings refer to a specific bond issue; they are not a general statement about the issuer. In contrast, an issuer credit rating is a current opinion of an obligor (such as a college or university) to meet its financial obligations. An issuer credit rating focuses on the Obligor's capacity and willingness to meet its financial commitments as they come due. The opinion is not specific to any particular financial obligations, as it does not take into account the specific nature or provisions of any particular obligations.

The demand and financial analysis described above allows Standard & Poor's to assign ratings to

a general obligation pledge of a private university. Most private universities that sell debt issue unsecured general obligations, supported by a full faith and credit pledge. Sometimes particular issuing authorities (since most private universities who issue tax-exempt debt must issue debt through a tax-exempt conduit issuer) require a lien against certain revenues of the institution and the maintenance of legal covenants such as asset to liability ratios. However, these legal requirements would not raise a private college debt rating above its GO rating.

Public universities, in contrast, may issue a variety of debt types and very few have the ability to issue full faith and credit debt. However, a school's flexibility to raise tuition and fees charged against all students, for example, allows Standard & Poor's to rate unlimited student fee or tuition fee pledges for public colleges and universities on par with an institution's GO rating. This policy is important in analyzing public institutions because many public schools are restricted in their use of GO and state appropriation pledges. Other types of security pledges may be applied to a university's bonded debt, such as pledges of revenues from a specific enterprise, including dormitories and parking systems, or a limited pledge of tuition or student fees (see section on privatized dormitories and enterprise financings for more information on auxiliary revenue bonds).

Standard & Poor's views debt secured by enterprise funds to be generally weaker than GO or tuition pledges. For example, a dormitory bond's revenue source may be limited to room rentals, while a GO or tuition pledge implies a much broader revenue-raising capability. A bond secured by tuition or a school's GO pledge is likely to experience problems only if the entire school experiences difficulty. An individual dormitory, on the other hand, could close without necessarily affecting university operations. However, if the revenues pledged are from a large dormitory system, and most students live on campus, dormitory revenues could perhaps be as important to the college's overall health as tuition and student fees. The dormitory's value to the school largely determines the distance between the dormitory rating and the school's GO rating.

Covenants

Rate covenants and additional bonds tests also are examined. However, with the exception of enterprise debt, these provisions generally carry less weight in university analysis than in other types of bond issues for other municipal enterprises. This de-emphasis is because the payment of debt service depends less on the maintenance of specific rates and charges than on demand for the institution's services and its financial health. Additional bonds tests for virtually all GO pledges do not enhance bondholder protection because the requirements, which are usually based on assets and liabilities, impose no real constraint on the college. However, enterprise operations must set rates to provide sufficient coverage; therefore, for enterprise-backed debt, Standard & Poor's prefers rate covenants and additional bonds tests with substance. Rate covenants usually require institutions or their governing boards to set rates and charges which would enable debt service coverage to meet greater than sufficient coverage. Minimum rate covenants of 1.15x-1.2x are acceptable, if debt service coverage is historically good and stable. The strongest additional bonds tests require historical revenues to be at least 1.25x future maximum annual debt service, including the proposed bonds. Many other additional bonds tests in this sector are proposed, rather than historical, and allow certification of future revenues by a business officer of the college.

Debt service reserve policies. Cash flow considerations in colleges and universities usually are less of a problem than in other municipal enterprises; therefore, reserve funds are not always necessary. While it is true that tuition revenue inflows are seasonal, the presence of unrestricted resources and endowment often compensates for the absence of a reserve, or rainy day, fund. Nevertheless, bonds secured strictly by enterprise revenues generally require a fully funded debt service reserve fund, even if the college has a large endowment.

Other liabilities and debt-like instruments

Standard & Poor's also incorporates other liabilities in its analysis of financial resources. These can include short-term debt outstanding at year-end, unfunded pension liabilities and postretirement benefits, contingent liabilities, debt obligations of affiliates and wholly owned subsidiaries, and operating leases. Because our analysis focuses on retained equity, versus strictly cash and investments, all liabilities reduce the amount of equity. Therefore, all liabilities are indirectly captured in Standard & Poor's calculation of unrestricted and expendable resources. A large unfunded liability relating to postretirement benefits such as health care and pensions could be of concern if management has no plan for how to fund these liabilities or benefits over time. Many colleges and universities are frequent users of commercial paper and variable rate debt obligations. Often commercial paper has been authorized, but not issued. If a commercial paper program is dormant, or the institution has never issued up to the authorized amount of the program, only the actual amount issued by the college will be incorporated in the financial ratios based on audited financial statements. However, our rating takes into account the possibility that additional may be issued.

Rating Public Colleges And Universities

Standard & Poor's rating approach for public universities is similar to that used for private institutions in terms of demand, management, finances, and legal provisions. However, since fiscal 1996, financial accounting for private institutions has differed from the accounting standards that public institutions follow. As a result, Standard & Poor's maintains two different sets of financial ratios for use in evaluating colleges and universities. In addition, since a major portion of a public university's annual budget comes from state sources, analysis of state support is also a rating factor. State mandates and policies also can greatly influence the demand and financial characteristics of a public university.

State support

On average, public colleges and universities derive much less than half of their unrestricted operating budgets from state appropriations and the amount provided for operating support continues to decline over time. On the other hand, many states provide considerable capital support for construction and maintenance of academic facilities along with general operating support. Standard & Poor's evaluates state support by focusing on the following factors:

- The state's GO rating, which provides a snapshot of a state's economic, debt and financial condition and offers a basis for evaluating the strength of higher financial education support.
- The track record of appropriation support for higher education within a given state. Particular attention is paid to how higher education fares in times of financial stress at the state level. Standard & Poor's is interested not only in how successful individual institutions are in obtaining appropriations, but also in the strength of a state's overall support for higher education.
- The history of allocations to the specific institution being rated. In addition, Standard & Poor's compares the institution's historical percentage share of total higher education appropriation with that of other state institutions.
- Nominal amount of state support and changes in the funding formula which might benefit higher-growth, stable, or slow-growth institutions; and
- The history of state appropriations per full-time equivalent enrollment. Some of the highest levels of support on an FTE basis, such as at the University of California and University of North Carolina, are virtually double other flagship peers.

While not the sole rating feature, a state's general creditworthiness (often measured by a GO rating) may provide a helpful starting point for a public university rating. An analysis of an individual public institution's demand and finances, combined with similar information about the state's other public universities, allows Standard & Poor's to develop a range of possible ratings. The highest ratings for public colleges and universities are usually assigned to flagship institutions characterized by high funding levels, nationally recognized academic programs, and unusually strong admissions or financial position. Other state schools generally receive lower ratings, depending on the strength of state support to specific institutions, financial and admissions characteristics, and the security pledge. However, ratings tend to be higher than for private colleges and universities because of the presence of state support.

While a state has unlimited taxing power, a state university may have less flexibility because a major portion of its annual budget is at the discretion of the state legislature. Thus, without overwhelming demand or financial strength, a state university's creditworthiness usually does not exceed or even equal that of its sponsor state. Public institutions have broken through this barrier on the basis of highly selective demand, large endowment holdings, and/or comprehensive research programs, and broad revenue diversity. Most public universities are not affected by a positive or negative change in a state's financial condition, except that a funding environment can become more favorable if a state's financial condition improves. The degree of change, if any, in a rating will reflect institutional demand and financial characteristics, as well as the university's role in the state system of higher education and its funding history.

During periods of fiscal stress, many public universities are able to increase tuition and fees considerably, without any reductions in demonstrated demand. Universities with significant insulating characteristics could experience some fiscal strain, if their respective states make cuts to higher education, but it may not be demonstrated in the university's financial results. Standard & Poor's evaluates each institution on a case by case basis, in the event of state rating changes, to determine whether the outlook has changed, or the financial circumstances are unchanged, better, or weaker.

State policies

In addition to actual appropriations, underlying state mandates and policies also impact public university finances and must be considered in the rating process. Mandated tuition caps, budgetary reversions back to the state, required remission of excess or unspent dollars back to the state, and limits on bonding for specific projects can all affect an institution's financial operations. These policies make analysis of a public university's finances quite

Selected Public College/University Financial Ratios (GASB)

Ratio	Definition
Income statement ratios Revenue diversity (all numerators divided by adjusted operating revenues)	
Net tuition dependence	Numerator = net tuition
Student dependence (net tuition + auxiliary rev)	Numerator = net tuition + auxiliary revenue
State operating appropriations	Numerator = state operating appropriations
Grants and contracts	Numerator = state, private, and federal grants
Gifts	Numerator = gifts
Auxiliary income	Numerator = auxiliary income
Health care income	Numerator = total health care income
Total adjusted operating expenses	Audited operating expenses plus appropriate nonoperating expenses considered to be operating expenses, such as interest expense
Total Adjusted Operating Revenues	Audited operating revenues plus appropriate nonoperating revenues considered to be operating revenues such as state appropriations, investment income, and private gifts
Operating results (all ratios computed relative to adjusted operating expenses	
Change in adjusted operating income	Change in estimated operating income/adjusted operating expenses
Change in unrestricted net assets	Change in UNA/adjusted operating expenses
Change in total net assets	Change in total net assets/adjusted operating expenses
Balance sheet ratios Liquidity and debt ratios	
Cash and investments/expenses	Univ. C&I/adjusted operating expenses
Cash and investments/pro forma debt	Univ. C&I/pro forma debt principal
Cash and investments/outstanding debt	Univ. C&I/outstanding debt principal
UNA/expenses	UNA/adjusted operating expenses
UNA/pro forma debt	UNA/pro forma debt principal
UNA/ outstanding debt	UNA/pro forma debt principal
Adjusted UNA/expenses	Adjusted UNA/adjusted operating expenses
Adjusted UNA/pro forma debt	Adjusted UNA/pro forma debt principal
Adjusted UNA/outstanding debt	Adjusted UNA/pro forma debt principal
Adjusted UNA	UNA, adjusted at analytical discretion to include: foundation quasi endowment or foundation UNA; debt service reserves; debt service balances; board-designated reserves or endowment; university-held quasi endowment not included in UNA
Debt burden	
Current debt service burden	Current debt service/adjusted operating expenses
MADS burden	Current MADS/adjusted operating expenses
Pro forma MADS burden	Projected MADS/adjusted operating expenses
Average age of plant (years)	Accumulated deprecation/annual depreciation expense
Full-time equivalent measures	
Net tuition per FTE ($)	Net tuition/total full-time equivalent students
State operating appropriations per FTE ($)	Total state operating appropriations/total full-time equivalent students
Outstanding Debt per FTE ($)	Outstanding debt/total full-time equivalent students
Pro forma debt per FTE ($)	Proforma debt/total full-time equivalent students
Net capital assets per FTE	Net capital assets/total full-time equivalent students
Endowment per FTE	Endowment (market value)/total full-time equivalent students

different from that of a private institution. For example, while a large financial cushion allows a university more flexibility and independence from the state, some public institutions are limited as to the amount of unrestricted reserves they can retain. Standard & Poor's considers public colleges and universities with unrestricted resources below 5% of total annual operating expenses to be vulnerable to severe operating constraints. Capital campaigns to increase unrestricted resources or endowment are looked upon favorably.

Mission

Although analysis of demand is similar for private and public universities, ratings of public schools are sometimes skewed by the institutions' role in providing education and the importance of state support. Standard & Poor's generally regards acceptance and matriculation rates as key factors in determining an institution's overall demand position. However, public institutions generally have more liberal or open admissions requirements, and acceptance rates for public schools (ranging from 30%-80%) are generally not as competitive as those for comparably rated private institutions. In addition, while some premier public institutions have very high student quality indicators, and acceptance rates may equal those of more selective private institutions, many public institutions exhibit lower quality measures because of open admissions policies. However, a public university may be a primary provider of higher education, or the state's flagship institution and matriculation rates may be very high. Thus, public universities are often highly rated, despite having less admissions flexibility than their private counterparts.

Legal provisions

Since public universities enjoy state funding support, they have less need to guard against revenue volatility. Where the debt being rated is a GO, or equivalent, of a public institution, a debt service reserve is not needed if a college has met two ratios for each of the past three years. First, unrestricted resources divided by operating expenses and interest, should exceed 5%. Second, maximum annual debt service divided by unrestricted resources should be less than 50%. In Standard & Poor's view, meeting these two ratios demonstrates enough liquidity to mitigate the absence of a debt service reserve.

Rating Community College Debt

As the role of community colleges has expanded over the past decade, enrollment growth and improved state support have resulted in increased creditworthiness for these institutions.

Community colleges have developed along the same lines as public four-year institutions. However, while public colleges and universities look much the same from state to state, community colleges exist in many different forms.

In some states, community colleges fall under the responsibility of large flagship universities. Other states have less centralized systems, whereby individual community college districts have been formed that resemble independent school districts. Other structures include a state board of education that oversees activities of community colleges, in much the same way as a state board of regents governs four-year institutions. Finally, some states do not even have community colleges, but, rather, elect to offer technical and vocational classes through their four-year institutions.

The wide array of structures has led to debt being issued under a variety of security pledges. It is this variety of security pledges, rather than any real differences in debt-repayment ability, that has resulted in the ratings on community college debt being spread across the spectrum, from potentially a 'AAA' where debt is secured general obligations or ad valorem tax revenues to the 'BBB' category.

Most community colleges are supported by three main revenue sources:

- Local ad valorem property taxes;
- State appropriations; and
- Tuition and fees.

These income streams can be pledged individually or in combination to create numerous security pledges. The most common pledges, in descending order from broadest and most creditworthy to narrowest, include:

- A GO pledge of all of the school or district's resources, including ad valorem property taxes;
- A pledge of tuition or tuition and fees, excluding property tax support;
- A pledge of one or more unlimited student fees, excluding tuition and property tax support; and
- A pledge of auxiliary (dormitory, dining hall, parking) revenues.

Depending on the underlying security, ratings assigned to the debt of a single community college, or district, could vary from one issue of bonds to another. Community college revenue bonds are typically rated below GO bonds, depending on the breadth of the pledged revenues. Issues secured by tuition and fees, and other enterprise revenues might be rated higher than revenue bonds secured solely by enterprise revenues of the community college. All ratings still take into account the community college's financial performance and other credit characteristics.

The revenue pledge

The GO analysis also forms the starting point for the analysis of a community college or district revenue bond. Because the bondholder no longer can rely directly on tax-raising capability and the usually predictable nature of property taxes for repayment of bonds, an assessment of the demand. financial, management, and legal characteristics behind the pledged revenue stream becomes more important.

For this purpose, the analysis can be broken down into four main areas:

- Demand or enrollment and admissions trends;
- Financial operations;
- Management; and
- Debt type and structure.

The last three factors are assessed according to the criteria that Standard & Poor's has established for public four-year colleges and universities. Demand is evaluated from a slightly different perspective than it is for traditional four-year public colleges and universities.

Demand analysis

Unlike most public colleges and universities, community colleges generally do not apply strict admissions criteria. Instead, they employ open-enrollment policies that guarantee full access to students who meet minimum entrance requirements. Thus, the most telling demand statistics are not related to selectivity, but to enrollment trends.

To measure enrollment trends, Standard & Poor's looks at several factors, including:

- The absolute number of enrollees from year to year;
- Total credit hours annually for five years;
- The breakdown between full-and part-time students;
- Reasons for any cyclical increases or declines in enrollment;
- The presence of other two-year educational options in the immediate area;
- The breadth of the college's course offerings and any overlap with other local educational institutions;
- The college's role in local economic development efforts and reliance on agreements with private industry for retraining of workers;
- The strength of the underlying economy and demographics as a generator of students; and
- The number and type of articulation agreements with nearby colleges and universities.

Typical demand characteristics of an investment-grade revenue bond rating for a community college would be increasing enrollment trends, a balanced mix of full-and part-time students, and a management team that is actively seeking articulation, or transfer, agreements with four-year institutions and/or tie-ins with local private industry. Declining enrollments can be an indicator of competition from neighboring districts or colleges, negative underlying demographic trends, or poor management.

Auxiliary Revenue Bonds And Privatized Dormitories

Traditional auxiliary revenue bonds

Standard & Poor's has been rating university auxiliary revenue bonds for decades. Traditionally, proceeds from these bonds financed parking, dining, residence and athletic, and research facilities. In most cases, auxiliary bond issuance is driven by public universities who often have limited GO or tuition-backed bonding capability. Auxiliary, or enterprise, revenue bonds are generally supported by revenues from the related project being financed such as room and board charges, parking fees, indirect cost recoveries, and other limited student fees.

The starting point for Standard & Poor's assessment of all auxiliary revenue bonds is the full faith and credit, or GO, rating for the university issuing the bonds. This rating assesses the university's demand and financial strengths and weaknesses and provides a measure of institutional long-term viability and potential demand for the auxiliary project under consideration. This approach also reflects the university's role as project manager responsible for project maintenance, rate-setting, and control over policies governing facility use (for example, a policy that all freshmen must live on campus). Standard & Poor's perceives this high level of university oversight and ownership to be equivalent to a pledge of the university's moral obligation to repay auxiliary system debt.

Because auxiliary revenue bonds are secured by a narrower revenue stream than the GO or tuition debt of the university, ratings on such debt are usually not as high as the university's general obligation rating. In most cases, auxiliary revenue bond ratings are placed one-to-three notches below the university's GO bond rating, but the ultimate rating depends on the size and strength of the particular facility or system, financial performance, historical and projected debt service coverage, and legal provisions. The GO bond rating typically acts as a ceiling for these ratings and it is unlikely for auxiliary debt that is not secured by unlimited student fees, or a very broad pledge of revenues, to be rated on par with a university's GO debt.

After establishing the GO rating for the university, Standard & Poor's analyzes the specific characteristics of the auxiliary project including:

- Demand for the facility;
- Essentiality of the service being provided;

- History of financial operations including coverage of pro-forma maximum annual debt service;
- Scope of the pledged revenue stream; and
- Legal provisions, including rate covenants and additional bonds tests.

Analysis of these factors, in combination with institutional demand, long-term viability, and underlying creditworthiness, helps to determine the rating.

Modified rating approach for on-campus privatized housing

The issuance of dormitory revenue bonds is not a new development in higher education finance. Many of the dormitory revenue bonds rated by Standard & Poor's date back to the 1960s. Their use, like bonds used to finance parking, dining, and athletic facilities, was almost universally limited to public universities because debt constraints or other statutory limitations were not experienced by private colleges and universities. Private colleges have not been prohibited from issuing debt for any reasons other than the former cap on tax-exempt bonds. Private colleges and universities always pledged their general obligation because they could do so.

However, beginning in the 1990s the environment began to change. Colleges experienced a surge in demand for modern, updated apartment style housing, and needed to respond more quickly to market demands. The concept of using developers' expertise and separately created 501©3 issuers to help issue the debt for these projects rose in popularity. The motivation for most institutions was obvious. For public institutions, the ability to circumvent traditional financing guidelines can cut years off a construction project and significantly reduce construction costs.

Private colleges and universities, meanwhile, face their own growing capital needs and are looking for ways to preserve their debt capacity and yet remain competitive. Colleges and universities pursuing the option of privatized housing often want to know two things: (1) whether using off-balance sheet debt for residential facilities will affect their existing credit profile and debt capacity; and (2) the degree to which they need to support a project to ensure a lower cost of capital for their students' housing. Standard & Poor's criteria for off-balance sheet housing addresses these concerns and largely rests on the "credit-risk" relationship model.

The credit-risk relationship model

If a college transfers credit strength to an affiliated entity or project, then the corresponding risks of that enterprise will almost always transfer back to the college. The greater the linkage between the sponsor institution and the project, the more likely the debt financing will affect an institution's credit profile, whether the financing is "off-balance sheet" or not. However, a closer link to an institution's credit strengths and the possibility of subsidization of debt service will usually mean a higher standalone rating and a lower cost of capital. A new housing project with very little link to a sponsoring institution will probably not benefit from the institution's creditworthiness. On the other hand, the institution can probably safely assume that the issuance of the related debt will not affect its rating at or after the time of the transaction.

Nonetheless, debt related to an entity's business is always of concern, especially when the primary customers are the institution's students. Even a project that does not require immediate subsidization may require management effort or time. Future accounting rules could also change, requiring debt that was off balance sheet to be consolidated in subsequent financial statements. A project related to an institution can also represent competition; if future housing occupancy drops on campus, an important question is whether students will occupy newer facilities related to the campus, but not the university's own housing facilities. Issuing additional debt, even if off-credit, could represent credit dilution for existing bondholders of dormitory revenue bonds. Because of these issues, Standard & Poor's uses two standards in evaluating the "credit-risk" relationship: economic interest and control. Does the university or school have an economic interest in the project; and does it control who uses the facilities being financed, project budgets and rate setting, and who manages the property (control).

Comparing traditional dorm revenue bonds and privatized housing

When rating on-campus privatized housing facilities, Standard & Poor's first focuses on the differences between these projects (often called off-balance sheet debt) and traditional university dormitory revenue bonds. The chief distinction between off-balance sheet debt and traditional auxiliary bonds is the absence of university oversight and ownership. Traditional dormitory revenue bonds are, in nearly every instance, sold directly under the university's name, controlled by the university, and revenues and expenses of the project and related debt are consolidated in the university's financial statements. Because of the absence of ownership, Standard & Poor's does not rely on its historic method of shading ratings on dormitory revenue bonds using the institution's GO equivalent rating as a starting point.

Instead, for project-based, privatized housing, Standard & Poor's will use a university's long-term rating as a proxy for long-term viability and poten-

tial demand for housing. If demand for on-campus housing is weak or non-existent, and the university's long-term rating is low investment grade, it is unlikely that any proposed financing will achieve an investment grade rating without a very substantial link to a sponsoring institution. Conversely, if housing demand is strong, and the proposed project is being used to replace existing housing, the project would be viewed favorably. A substantial link might be a college guaranty of debt service or an unconditional lease vacancy agreement.

The chief similarity between traditional dormitory revenue bonds and project dormitory bonds is that even traditional dormitory revenue bonds are technically non-recourse obligations. Bondholders are often entitled only to pledge revenues derived from the project or system of projects. So, for both, the revenue streams are narrowly defined as being produced by a particular project or set of projects. Another corollary is that both are occupied by customers—students of the college or university. As such, it is probably incumbent on the college to ensure that any project to which they are related provides students with decent, livable, and economical space. If students in the privatized facilities also receive financial aid from the institution for living expenses, the school is indirectly paying for the facility. If the college is a residential college, it may not make financial sense to use financial aid for a project in which the college builds no ownership equity.

Rating methodology

In assessing this type of debt—without ownership (and usually without management) by the university—Standard & Poor's examines many of the same characteristics that are evaluated for traditional auxiliary bonds. Generally the following factors are necessary to achieve an investment-grade rating. While the following section speaks largely to housing, any other enterprise financing could apply the criteria for relevancy.

Evidence of long-term institutional viability

A school with a long-term GO rating of 'BBB+' or higher and a strong residential mission is likely to have the capacity to consider this new type of financing option. Below this rating threshold, achieving an investment-grade project-based rating might be difficult, unless the school provides direct financial support.

Relationship between project owner and related institution

The relationship between the two will be evaluated based on board composition, ground lease structure, management agreement, and the factors leading to the decision to pursue the particular financing. A university that will ultimately own housing in the middle of its campus seems to have a vested interest in making that project successful. However, the degree to which a university, particularly a public university that does not currently own a project, can legally, or is willing, to cover a shortfall in debt service for that project is untested. It may be easier for private universities to step up to a financially unsuccessful project, but only if it is on their campus and they already exercise some control and oversight.

Project demand

Student demand for a new housing facility might be demonstrated by demand for existing on-campus housing. High occupancy rates, replacement housing, the presence of waiting lists, university leasing of off-campus housing accommodations, and recent enrollment growth will all be viewed favorably. Standard & Poor's will evaluate external feasibility studies that show sufficient demand for on-campus housing, but these usually provide only partial comfort.

Project location

Most projects rated in this way will be on or near the core college or university campus. If the proposed housing is off-campus, the college does not the land, and there is no significant financial or managerial link to the school, Standard & Poor's would most likely use its affordable housing criteria to rate the project debt.

Project management

The highest rated projects will often by managed by an institution itself (which connotes a higher degree of responsibility and oversight). At the behest of the university, other projects will be handled by outside managers, usually a for-profit company. The length of management contract is generally not as important as other credit factors. A stronger institutional link will include university rate setting, budget setting, and housing policies that are virtually indistinguishable from other university housing.

Rate covenant

Rate covenants will typically cover debt service and operating expenses. A typical rate covenant will set rates at a minimum level of 1.20x the next year's debt service and operating expenses. In Standard & Poor's experience, many standalone privatized housing projects, that have been completed, have experienced either pricing pressure or higher than expected costs, such that it has been difficult to meet the standard 1.2x rate covenant.

Additional bonds tests

Additional bonds tests should protect bondholders against the possibility of future debt weakening or diluting the specific project's revenue base.

Historical additional bonds tests are viewed more favorably than projected tests. The absence of an additional bonds test will be viewed negatively.

Reserves and insurance

A full debt service reserve should either be funded from bond proceeds or through an approved reserve substitute. A portion of net cash flow should also be retained to build up maintenance and repair reserves. Projects should include a capital (per bed) reserve funded from cash flow, sufficient to handle annual maintenance. Housing maintenance is important to keep the facility attractive during the life of the bond issue and provide for unanticipated major maintenance. Standard & Poor's evaluates business interruption insurance and the provision for coverage (generally 18-24 months) in the event of damage or destruction. The single site nature of many of these projects creates additional risk and full insurance and reserves are crucial.

Coverage

Most projects rated by Standard & Poor's provide adequate or better cash flow protection, with a multiplier of at least 1.2x coverage of maximum annual debt service in every year.

Other considerations

Projections should include a reasonable allowance for vacancies and expense growth. Historically many projections provided for these projects have used a very high occupancy rate of 95%-97%. Standard & Poor's looks for break-even occupancy that is much lower than this level; generally if break-even occupancy is less than 75%, cash flows are viewed more favorably.

Because of the untested history of these projects and the concurrent risks of an aging facility, a shorter debt maturity is viewed more favorably than a longer maturity, even if coverage drops slightly with the shorter maturity.

Many investment-grade projects do not include construction risk. However, construction risk will be evaluated based on Standard & Poor's criteria, and a project with construction risk can be rated investment grade. There are mechanisms available to mitigate construction risks so that a project can be rated prior to actual completion. Sometimes the formation of a new "privatized housing system" can offset concerns about single site project or construction risk. Significant university involvement in the construction process is also viewed favorably.

Credit links

As seen from the above section, the closer the link between a project and its sponsoring institution, often the higher the rating. However, the closer the relationship, the more likely it is that the housing debt will be considered a direct or indirect obligation of the institution. Good reasons to consider off-balance sheet, or indirect debt, as institutional debt are:

- The institution receives a direct economic benefit;
- The institution manages the project as if it were any other on-campus activity;

Accounting Issues

Currently public and private universities follow very different accounting standards-in general public universities follow standards proposed by the Governmental Accounting Standards Board (GASB) and private universities follow standards set by FASB. These differences in accounting rules for similar institutions make comparisons between private and public colleges and universities difficult and require the use of separate analytical ratios for the two groups. However, beginning in fiscal 2002, and for early adopters, fiscal 2001, public universities produced financial statements in accordance with Governmental Accounting Standards Board Statement No. 35 (GASB 35). While these financial statements resulted in different-looking statements for public colleges and universities than under fund accounting, they are similar to the current format followed by private colleges and universities. Perhaps the most striking effect of the change is the appearance of a large operating loss on a university's statements, because any state operating appropriations are considered to be a nonoperating revenue, or subsidy, item under the new statements. Not unlike our approach to endowment spending, we add back in state appropriations as an operating revenue item. Public colleges and universities are also required to expense depreciation. Operations should be balanced including depreciation, as failure to account for depreciation expense will lead to reduced equity over time. Since Standard & Poor's ratios for higher education institutions measure liquidity largely based on equity, this accounting issue can ultimate reduce a college or university's unrestricted equity.

Measuring Operating Performance

Recent investment losses highlight an analytical problem in the credit analysis of higher education: the absence of a standard industry measure of operating performance for colleges and universities. Not only do accounting applications vary among private and public colleges, but private colleges and universities also record their financial results in very different ways. Some colleges record all investment income and gains as operating revenue. When investment performance is positive, their operating results appear favorable. On the other hand, for those who record only endowment spending as operating revenue, even a year with significant investment losses can appear uneventful. Investment losses of millions or more simply tend to fall below the line. Performance appears to vary dramatically from year to year without endowment spending as a smoothing device. Thus, in order to place institutions on an equal footing and eliminate dramatic ups and downs in investment markets, Standard & Poor's adjusts for differential accounting by moving all investment income and gains (or losses) below the line for those institutions who do not record some component of endowment spending as operating revenue. Standard & Poor's then adds back actual endowment spending allocation to get a measure of operating performance. If an institution does not have an endowment spending policy (a rare occurrence), realized income in the form of interest and dividends are often a proxy for endowment spending. A major concern surrounding this exercise is the necessary adjustment of audited financial information. When GAAP statements are difficult to reconcile, Standard & Poor's higher education analysts often ask management for internal operating statements. In these cases, internal statements do not replace the need for audited statements, they merely provide a supplement.

- The project is highly essential for the institution and loss of control could be harmful to the institution's overall performance and reputation;
- The institution benefits from immediate or eventual ownership of the project being financed.

Ultimately, ratings encompass a variety of factors, of which debt is just one. The inclusion of additional indirect debt in an analysis of an institution's overall credit picture does not necessarily mean that a rating will change. Most often the revenue-producing nature of projects will be taken into

Auxiliary Revenue Bond Rating Factors

	Scope of Pledge	Demand	Essentiality	Financial Operations	Legal Structure
Housing					
	% of students housed on campus	Historical occupancy	Commuter or residential school	Adequate coverage	Additional bonds test
	Revenues derived from standalone facility or system	Evidence of waitlist	Part-time or full-time student body	Rate flexibility	Rate covenant
		Competition—on or off campus		Budgeted capital expenditures	Closed or open flow of funds
		Location of facility			Debt service reserve
					Renewal and replacement reserve
Dining					
	% of students participating in meal plan	Competition—on or off campus	Commuter or residential school	Adequate coverage	Additional bonds test
	Revenues derived from standalone facility or system		Part-time or full-time student body	Rate flexibility	Rate covenant
				Budgeted capital expenditures	Closed or open flow of funds
					Debt service reserve
					Renewal and replacement reserve
Parking					
	Number of spaces in system	Historical occupancy	Commuter or residential school	Adequate coverage	Additional bonds test
	Revenues derived from standalone facility or system	Defined users—students	Faculty and/or visitors student body	Part-time or full-time	Rate convenant
		Evidence of waitlist		Budgeted capital expenditures	Closed or open flow of funds
		Competition—on or off campus			Debt service reserve
		Location of institution—urban or rural			Renewal and replacement reserve
		Location of facility(ies) relative to main campus building			

account when considering institutional ratings. Self-supporting projects are generally viewed more favorably than projects, which produce no additional revenues, all other factors being equal.

Rating Stand-Alone Medical Schools

From a rating perspective, since most U.S. medical schools are affiliated with a university or hospital or both, it is impossible to evaluate the medical college without considering the associated university/hospital operation. Partnerships and affiliations with other health care entities is still an important part of the rating analysis, but only one of many factors.

Most ratings associated with medical colleges are refined by their relationship with a related university and/or hospital. In the case of publicly supported medical colleges, the rating also incorporates an evaluation of state support. However, Standard & Poor's does rate free-standing medical schools not affiliated with a university or a hospital.

The rating process begins with evaluation of demand and a financial analysis similar to that used when assessing other higher education institutions. The analysis is tailored to incorporate special characteristics of medical schools, such as limited class size, high tuition levels, state reimbursement programs, research programs, affiliation agreements, and revenues from faculty practice plans.

State-Supported Medical Schools

State support adds another twist to the evaluation of medical schools. Standard & Poor's rates a few combined hospital/medical school entities that receive significant state appropriations. While student demand, hospital utilization rates, and service area characteristics are important rating factors for schools of medicine that also run teaching hospitals, strength of state support can be a key credit factor.

Independent Medical Schools

Free-standing medical schools—those without hospital facilities, offer an opportunity to assess a medical college unaffected by the credit characteristics of affiliated institutions or hospital revenues. These colleges depend more on student demand and tuition, than other medical schools, and must support themselves without the benefit of state money or a larger university or hospital. However, they may benefit from affiliated income from partnerships with adjacent or associated hospitals, and the amount of reimbursement for residents and faculty can be significant. In addition, because their faculty practice in associated clinics and hospitals, they are still subject to health care industry risk. Because of their limited wherewithal and sometimes their weak financial performance, historical ratings on free-standing medical schools generally have not been rated higher than the 'A' category.

Demand Analysis

Demand analysis of medical schools mirrors that used in evaluating colleges and universities. Standard & Poor's focuses on enrollment trends, application, acceptance and matriculation results, student quality, and competition from other programs. Medical schools often offer more than just medical degrees, and some medical schools offer both allopathic and osteopathic programs in medicine. Larger, more comprehensive programs provide diversity, particularly since health science academic programs are known for their cyclicality. However, historical demand for medical school admission has far exceeded the available supply. This relationship holds, despite several years of a national decline in applications to medical schools. In general, allopathic schools of medicine tend to be more competitive in admissions than osteopathic schools of medicine, however, there are more standalone osteopathic schools of medicine rated by Standard & Poor's than allopathic. More of the nation's allopathic medical schools are associated with large, research universities. Osteopathic medicine schools, with a few exceptions tied to public, research universities, tend to be standalone institutions.

Since there are so few medical school spaces, students' choices are limited, and matriculation rates are often higher than for other unrelated professional programs such as law and business. The flexibility afforded by such selective admissions is particularly significant for medical schools that cannot rely on enrollment in other programs to offset periods of falling demand. While medical colleges remain vulnerable to industry changes and changing attitudes regarding the medical profession, Standard & Poor's expects demand for medical education to remain strong, and in fact, recent trends indicate a positive movement upward in medical school applications.

Financial Analysis

Standard & Poor's financial analysis of medical colleges also parallels the approach used for other higher education institutions, centering on:

- Revenue and expense composition;
- Annual financial operating results;
- Liquidity and endowment; and
- Debt load.

Standard & Poor's uses the same financial ratios and indicators used in the assessment of colleges and universities. The chief focus on the balance sheet is liquidity represented by various degrees of restrictions on equity. Many medical schools built their financial reserves more through decades of

strong operating performance, until the 1990s and 2000s, when performance was more strained. Thus, most medical schools have a higher degree of unrestricted equity than most colleges and universities. The chief focus of the income statement is operating performance and revenue diversity, as well as an underlying Profit and Loss analysis of the various components of the income statement.

While the analytical approach is similar, some of the financial characteristics of medical schools are very different from other colleges and universities. For example, revenues from faculty practice plans, research grants, and state capitalization programs can result in much greater revenue diversity for small medical schools than for similarly-sized colleges and universities. Medical schools affiliated with hospitals, or those classified as state institutions, often derive an especially small portion of their revenues from students and tuition. Tuition discounting is usually not a concern for medical schools.

While these other revenue sources help to insulate medical colleges from fluctuations in student enrollment, they may be vulnerable to change themselves. For example, financially strapped state governments can reduce state support, forcing potentially large increases in tuition rates.

Faculty practice revenues, mirroring reimbursement pressures on other health care providers and institutions, are often strained, with costs exceeding revenues. Payments for graduate medical education or residency programs can also come under pressure if the affiliated hospitals, with which the medical schools partner, face weak operating results. When payments under affiliation agreements decrease, often it is reimbursement for graduate medical education that suffers the most. Most payments under affiliated contracts are multi-year in nature, providing some revenue stability, but renegotiations can prove difficult in a weak environment. Most standalone medical schools are not heavily leveraged, but few also have the large endowments seen at other colleges and universities. ■

Private Elementary And Secondary Schools

The universe of rated private primary and secondary schools, although still relatively small, encompasses a diverse group of educational institutions whose operations and characteristics resemble colleges and universities more closely than traditional elementary and high schools. As a result, in rating private primary and secondary schools, Standard & Poor's Ratings Services assesses operational indicators similar to those used in rating colleges and universities.

A key element in the rating is demand, measured by such factors as enrollment, the number of applicants, the percentage accepted, matriculation rate (percentage of students offered admission who attend the school), and student quality. Institutional characteristics, such as the curriculum offered and whether a particular institution is a boarding or day school, also are important considerations. Financial factors, management, and legal provisions generally, but not always, modify the rating. A high endowment can considerably offset weaker demand. Most debt sold by private schools is secured by a GO pledge, so legal provisions bear less weight for debt ratings in this area.

Independent schools, while facing many of the same challenges as colleges and universities, operate in an environment vastly different from that of higher education institutions. For example, independent primary and secondary schools generally draw from a smaller, more regional market—particularly if they only offer day school programs—than do colleges, which may receive enrollment applications from across the country. In addition, independent schools typically are smaller than their public school counterparts, which receive local support and property tax revenues. Given the high tuition levels, a significant number of students attending such schools are affluent, which further limits the potential applicant pool.

Tuition is an important element in the financial profile of independent schools, and in general, private primary and secondary schools have considerably less revenue diversity than colleges and universities. However, with student charges already rivaling those of colleges and universities, the potential for additional increases may be limited. More and more tuition increases are being matched by rising financial aid costs. Although most of the schools make significant amounts of financial aid available to help offset the high tuition cost, Standard & Poor's believes that local economic fluctuations may be more likely to affect parents' decisions to send their children to private primary

and secondary schools. Parents may be forced to choose between a private primary/secondary education or a private college education for their children. While many parents are motivated to finance a private primary or secondary education, it still represents a discretionary choice. Typically, independent schools are very small and their revenue base is very concentrated. This concentration provides limited flexibility, and the loss of just a few students can have a big impact on a school's financial performance. Too, because of their small size, independent schools may find it difficult to achieve economies of scale.

Demand

In analyzing demand factors, Standard & Poor's first considers the school's mission (day versus boarding school, level and number of grades offered, single-sex versus coeducational, parochial versus nonsectarian, and program type). Standard & Poor's also reviews the size of the territory from which students are drawn and the number of schools in competition for this select pool of applicants. Boarding schools, with a wider geographic draw, are potentially more creditworthy than day schools, which draw students only from their local areas. However, the creditworthiness of boarding schools is often affected by the additional financial stress of having to maintain housing and a larger overall plant. A day school with local draw would be able to achieve a high rating if, for instance, it had a very large endowment and considerable unrestricted monies. This, in addition to solid demand, would more than compensate for its position as a day school.

Student demand factors are reviewed to determine a school's popularity and selectivity. Standard & Poor's examines enrollment and application trends, acceptance rates, matriculation, and student quality, as measured by standardized test scores (secondary SAT scores of applicants and SAT scores of graduates), and retention. Independent schools generally display stable demand trends, i.e. the number of applications tends to be very stable, along with enrollment levels. Management should explain changes or disruption in the number of applications or wide swings in enrollment. The highest rated independent schools often lose less than 5% of their students each year to attrition. In addition to these factors, Standard & Poor's looks at colleges attended by students upon graduation from the independent school.

Despite smaller enrollment levels and applicant pools, which often result in acceptance rates that are generally weaker than comparable measures for colleges and universities, most private primary and secondary institutions have had a relatively strong record of growth.

As a means of increasing enrollment, some independent schools use marketing efforts similar to those employed by higher education institutions. Such strategies include broadening geographic draw by targeting specific areas, increasing student aid, and expanding programs. An example might include an expansion from solely day programs to a mix of day and five-day boarding.

Admissions flexibility is a key factor in evaluating an independent school. Strong student quality enhances a school's ability to withstand a reduction in its applicant pool, allowing it to accept less qualified students. Other measures of student quality include the percentage of graduates attending college, analysis of the colleges attended, and graduates' success in college. Indicators for elementary and middle schools tend to be less standardized, requiring case-by-case determination of appropriate criteria, such as students' performance on statewide tests compared with norms. For all schools, Standard & Poor's assessment of competing institutions also is important. The attrition rate, or the percentage of students who do not return each year, is helpful in measuring student and parent satisfaction with the school and also provides insight into financial performance.

Documentation Requirements

- Five years of audited financial statements.
- Current year's budget summary.
- Comprehensive debt service schedule.
- Major strategic, capital, operating, or academic plans.
- Official statement providing descriptive information.
- Most recent investment report.
- Bond resolution or indenture.
- Lease or mortgage (if applicable).
- Loan agreement (if applicable).

Operational And Financial Factors

Standard & Poor's review of operations and finances starts with an examination of revenue sources and diversity of funding. The private schools rated by Standard & Poor's are evaluated using the same ratios and financial indicators used to assess the creditworthiness of private colleges and universities. These ratios are developed for institutions that follow FASB standards of accounting and display. Important areas of inquiry are relative restrictions on equity, total change in net assets, and change in unrestricted net assets from operations. Similar to many private colleges and universities, many independent institutions rely on

tuition as their main source of revenues, although endowment income and auxiliary revenues from sources such as boarding fees, summer programs, and rental facilities provide significant support for some schools. However, for more highly rated schools, endowment income and private contributions are increasingly important. Most independent schools run annual fundraising campaigns, and major comprehensive fundraising or capital campaigns. The largest of these campaigns is generally much smaller than the largest of capital campaigns for colleges and universities, but the alumni base for most independent schools is quite limited. Parental participation rates for many of the schools rated by Standard & Poor's are quite high—as high as 90% or more. Alumni participation rates vary, but can be much higher than a comparable level at a private liberal arts college.

Standard & Poor's also examines expenses and fixed costs, such as tenured faculty, operation and maintenance of plant facilities, and debt service. In general, primary and secondary schools do not have tenured faculties, giving these schools greater ability to react to fiscal pressures than educational institutions that award tenure to faculty. On the other hand, these schools are often so small that it may be difficult to achieve economies of scale seen in larger institutions. It is not uncommon for a school with fewer than 400 students to receive an investment grade rating. However, it is likely that it is not strong operating margins, but a good balance sheet, balanced operations, and good demand that drive an independent school rating.

The debt service burden is assessed by looking at maximum annual debt service as a percent of operating expenses. Because of their small size, and small operating budgets, independent schools debt service burden is often a high percentage of operating expenses. A debt load above 10% could be significant and may be a rating factor, however, it depends on whether the school has the existing operational capacity to take on the debt. A troubling indicator is the need to raise the endowment draw to support the increased costs of debt service, particularly if the increase in endowment spending results in a rate well above 5%. Day schools without large auxiliary operations present a special case. For example, in the context of a small budget and lack of tenured employees, even a high maximum annual debt service could be considered manageable if operating performance is good and an endowment provides additional support. Many independent schools issue variable rate debt secured by letters of credit or other credit enhancement. More of these schools are using interest rate swaps to hedge the interest risk exposure on the transactions. Standard & Poor's evaluates swaps to calculate a Debt Derivative Profile (DDP) score.

Standard & Poor's reviews a school's annual operating results to determine long-term financial stability and strength. Liquidity analysis principally compares cash and investments, unrestricted resources, and expendable resources with operating expenses and debt. Unrestricted resources exceeding 100% of expenses indicate strong liquidity position. Schools with unrestricted resources to operating expenses below 50% have more limited cushion and operating constraints. Often, again because of their small operating budgets, most independent schools have higher relative resources to expenses and debt than a comparably rated college or university.

Finally, Standard & Poor's reviews facility needs, capital plans, and deferred maintenance to determine their potential impact on future financial strength. Strong operating results may be significantly offset by substantial deferred maintenance, which can cause future financial strain. Little or no deferred maintenance would be an added financial strength to a school. Some independent schools fail to account for depreciation in their operating budgets, which subsequently results in a year-end decline in unrestricted net assets. Because Standard & Poor's evaluates liquidity using net equity ratios, the drop in unrestricted net assets directly leads to a drop in liquidity. If a school does not budget for depreciation, Standard & Poor's will evaluate the quality of the physical plant for signs of neglect and will ask about annual allocations to plant renewal and replacement.

Relevant Admissions Statistics*

- Headcount enrollment and projections.
- Total full-time equivalent enrollment.
- Total number of boarding and/or day students.
- New student information—including applicants, acceptances, and matriculants for each class, if available, and average SSAT scores or SAT scores of graduating seniors.
- Top 10 competitor institutions and win/loss statistics.
- Attrition and/or retention rates.
- Colleges and universities attended by graduating seniors.
- Day and boarding tuition and fee charges.
- Average room and board charge.
- Number of part-time and full-time faculty.

*Five-year historical data required.

Private primary and secondary schools that show a combination of strong results when evaluated against the criteria discussed above will be positioned to achieve investment-grade ratings. Standard & Poor's is unlikely to assign ratings much higher than the 'A' category without significant endowment and financial strength. Furthermore, Standard & Poor's expects that most institutions with ratings at the higher end of the spectrum will continue to be very selective boarding schools with a diverse student draw. ■

Charter Schools

A charter school is an independent public school, receiving public funds, that operates under a charter or contract for a specified period of time to educate children according to the school's own design, outside of the existing public education bureaucracy. It may be a new school, a start-up school, or an existing one that separates from an existing school district. It is held accountable in terms of its charter and continues to exist only if it fulfills those terms. The statutory framework under which charter schools operate varies significantly by state and often requires the reauthorization of the charter by the sponsoring entity after a specified period of time, typically three to five years. After renewal, some charter authorizations may run as long as 10-30 years. The first charter school opened in Minnesota in 1991.

Charter schools pose unusual analytical challenges. Public school districts and charter schools differ in critical ways. Public school districts must remain "going concerns", regardless of management performance or economic environment. Financial stress does not cause a public school district to go out of business, and may even generate positive counter-measures due to state oversight and support. In addition, public schools do not need to get their charter renewed periodically to stay in business. In contrast, charter schools may permanently go out of business. Most charter school closures to date have occurred largely because of issues relating to financial mismanagement.

Standard & Poor's Ratings Services' approach to rating charter schools depends on factors affecting each local school, as well as the state legal framework for authorizing and funding charter schools from statewide revenue sources. Rating analysis will vary from state-to-state and continue to evolve, because each school and state charter structure is very different.

Standard & Poor's rating methodology for both school districts and charter schools includes an overview of the following:

- Charter framework
- Demand for a school
- Finances
- Management and administration
- Debt, capital planning, and expansion risk
- Demographics
- Legal structure of the debt

State Statutory Framework

An important ingredient of a creditworthy charter school includes a clearly established state statutory framework for establishing, maintaining, and financing charter schools.

Charter authority

Standard & Poor's examines who, under statute, has the authority to grant charters. Powers are usually vested with a state-appointed board, a state university, or most commonly, a local school district. When a local school district is granting the charter, Standard & Poor's needs to feel comfortable that the school district supports the charter school, since the two may compete for the same students. Local school districts may support the charter school for varying reasons, such as relieving new building needs in growing districts, or providing a unique educational curriculum not currently provided. The number of charter schools and competing new entrants that are allowed by statute or may be established in the future is an important demand consideration. In some cases, a local school district official may serve on a charter school board, enhancing support and integration of the charter school with the local school district. In some states, charters can be granted by a city, state, or a university that do not actually compete directly with a local school district, thus eliminating some of the competitive aspects.

State legal framework

State charter statutes set the legal foundation—as well as the payment mechanism—for charters in a state. A very important component of the statutes is

an impartial legal framework for charter renewal or revocation, including a right to appeal a charter non-renewal; such oversight contributes to more uniform results. A clear renewal and appeal process should diminish the political elements involved in establishing or maintaining such schools, while ensuring adequate community input.

Some states also provide start-up or other additional capital funding for charter schools, enhancing the ability of a charter school to fund its debt.

Charter term

The charter term is an important credit factor. The state statute will either limit the term or establish the entity that is charged with granting the charter term. Charter schools are often granted charters of limited terms—typically up to five years—and therefore are subject to periodic renewal evaluations. Some states do grant charter renewals for longer periods, some as long as 20 years. Charters can usually be revoked even prior to the end of the charter term, usually for cause. While charters may only extend for five years, longer-term capital financings are generally amortized over a 20-30 year term. A good match between the charter term and bond amortization may contribute to a better rating, although Standard & Poor's does not require long charter authorization periods for an investment-grade rating. A school with good financial operations and stable enrollment is likely to remain a going concern, and thus a shorter charter term relative to debt maturity can be acceptable. Schools that have been through a charter renewal or similar review process at least once support the assumption of future successful renewals, and are most likely to be rated investment grade.

In general, Standard & Poor's believes that the periodic need to renew a charter does not necessarily pose a major risk to receiving an investment-grade rating. A successful charter school with high demand for its product will have its charter renewed, much as successful hospitals will have their operating licenses renewed if they meet a community need. Closures of charter schools generally follow from management or financial disorder, not from the arbitrary charter revocation or closure decision of the authorizing body.

The role of the charter school authorizer

The charter school authorizer plays an important role in determining credit quality. Nearly all of the investment-grade charter schools rated by Standard & Poor's have been through a successful charter renewal process, although schools that have not been through the renewal process may still merit an investment-grade rating. A long-term charter could be a positive rating consideration. In addition, a school that has received interim charter approvals as new grades are added or programs changed will be considered to have gone through a process similar to a charter renewal. In some cases, where the initial charter term is long, Standard & Poor's has accepted a letter from the charter authorizer affirming current school compliance with the terms of its charter.

Standard & Poor's focuses on the following questions when evaluating the authorizer as part of a credit review:

- What are the guidelines for charter renewal? If this is a detailed and specific process, there is less room for arbitrary revocation.
- What is the history of charter revocation in the state and for the specific authorizer? Have a sponsor's charter decisions been appealed? Who handles the appeals?
- What is the level of oversight from a financial reporting and facilities planning standpoint? Is there a formalized financial reporting and oversight process during the fiscal year that allows for corrective action to be taken in advance of the charter review time frame?
- Is there a role for the authorizer in providing liquidity or credit enhancement relating to short-or long-term debt issuance? This could be a positive credit factor.
- Is there an interim charter renewal period when grades are added or triggered to some other event?
- What is the relationship between the sponsor and its charter(s) over time? What level of academic, planning, or administrative support is available?
- How many charters have been granted and/or are overseen by the charter authorizer? How many schools has the charter authorizer closed?

The strongest sponsor/charter relationships will have formalized coordination and reporting in place, and good communication that allows quick resolution of any academic, policy, facilities or financial issues that arise. As part of the rating process, Standard & Poor's will typically meet with officials from both the sponsoring entity and the charter school.

Charter School Financing

A key part of the analysis deals with the funding mechanism for charter school operation, that is, whether a combination of state or local funds will be predictable and adequate. Many states simply finance students in their charter schools at or near the same per-pupil funding level of traditional public schools, while others leave the funding formula to negotiation with the sponsor. In some states, charter schools get less funding per pupil than public schools and receive no public funds for capital

facilities financing. Others provide special per-pupil facilities funding. While each state's formula for distributing funds to its charter schools differs, the strongest systems occur when the state standard per-pupil funding of public schools follows the students to the charter schools. Additionally, per-pupil funding may flow-through a sponsoring district, or come directly from the state.

Standard & Poor's will evaluate the funding mechanism and payment requirements to determine if cash-flow difficulties of a sponsor, such as a sponsoring school district, could create cash-flow difficulties at the charter school. A stand-alone charter school typically has less flexibility to withstand funding reductions or timing delays than a traditional multi-facility and multi-grade public school district.

The statutory authorization for issuing charter school debt needs to be clear. If specific funding under statute for facilities is available, it is also evaluated and considered a credit strength. Some states provide direct funding for facilities, while others provide statutory authorization for local school districts to provide facilities funding. Other states provide no capital funding provisions for charters.

Student Demand

Student demand for the charter school is one of the key elements of a rating evaluation. State funding generally follows pupil attendance for most charter schools. Charter schools need to demonstrate a record of demand for their educational services, as measured by stable-to-increasing enrollment, in order to retain funding.

Standard & Poor's does not have a minimum enrollment size threshold for any given rating category. However, a small school may sometimes become dependent on only one or two key administrators, or be less able to be withstand minor random fluctuations in enrollment. There may also be economies of scale involved with some larger schools, although every example must be examined on its own merits.

Specifically we look at the following:

- A well-documented waiting list that is regularly updated and maintained. A positive trend is particularly important if the charter school is issuing debt to significantly expand its facilities. The quality of waiting lists will vary dramatically depending on its requirements, such as, the age of the list, the level of detail required per applicant, parent volunteer time agreed to serve upon enrollment acceptance, and other requirements.
- An overview of competition in the area that affects the long-term viability of the school. This would include an analysis of other charter schools currently operating in the area and whether competing new charters could be authorized in the future or whether competing charter schools have authorization in their charters to expand enrollment. In addition, the local public school district is examined as a potential competitor in terms of quality of school offerings and its degree of overcrowding. Analysis of other private school alternatives in the area is also done. Forecast assumptions should be based on reasonable well laid out assumptions as regards public and private competition and anticipated future competition.
- A charter school enrollment trend that is stable or growing is also preferable, with good retention rates and manageable student turnover. Enrollment forecasts should be based on reasonable, well laid out assumptions.

Unlike private independent schools rated by Standard & Poor's, charter schools are required to maintain open admissions policies. If demand exceeds supply, most charters use a lottery system to fill available spaces.

Unusual curricula present a challenge in the rating process. Standard & Poor's has to determine whether a unique academic focus is relevant to the community and will continue to attract students. Another challenge associated with charter schools is a frequent absence of recreational and student facilities typically found in large suburban high schools or private independent schools. Limited athletic facilities and related programs can significantly hamper recruitment efforts for older students, particularly those in high school and junior high, although they may reduce charter school operating costs. Some charter schools have the ability to charge a facilities fee to offset activities' costs; others cannot. Some charter schools may be able to coordinate with their local public school districts to provide recreation programs.

Financial Factors

The charter school's own management of its resources is a key determinant of its creditworthiness. Since most charter schools are likely to be small, there will be fewer opportunities to realize economies of scale; therefore, careful financial management is critical. Of particular importance is the formula by which revenues are derived, often net a management fee to the sponsor. Revenues in some

states are not always determined on a per-pupil basis. Other financial factors include:

Operating history

Investment-grade rated charter schools will likely have a stable financial operating history, preferably for at least three years.

Fund balance

Fund balance reserves are critical due to charter school reliance on enrollment for funding. Enrollment can, and does, fluctuate, while fixed costs may not. Standard & Poor's examines whether there is a formal fund balance policy based on cash flow requirements, and if the school successfully adheres to such policies.

Financial flexibility

The ability to reduce budgets, if necessary, also contributes to financial flexibility in the event of an unexpected downturn in enrollment, as do conservative budgetary policies. Standard & Poor's routinely asks charter schools how they would maintain a balanced operating budget if enrollment dipped or state funding were delayed or reduced. In this respect, low class sizes provide some flexibility to increase student-to-teacher ratios and cut costs.

General financial policies

Adequate casualty insurance is advisable since charter schools often use a single site facility. Existence of long-range financial and facilities planning, and formalized policies relating to fund balance and cash flow reserves are also positive management and financial factors.

Audits and financial reporting

While Standard & Poor's strongly prefers independent audits, we have rated schools that are presented as a component unit of a school district that is also the authorizer. Availability of independent audits—at the charter school level—may be a critical rating factor. Uniform financial reporting is important for fiscal accountability and also factors into charter renewal decisions.

Cash management

Cash management policies and procedures are important. The frequency and timing of payments to charter schools throughout the year varies by state, which may affect daily cash flow. Banking relations may also be reviewed when access to liquidity becomes important due to modest cash reserves, since cash flow requirements can be uneven. While some states have provisions to accelerate funding to charter schools that can alleviate cash flow issues, other states have no such provisions.

Renewal and replacement reserves

Existence of a formal reserve for future renewal and capital expenses that is funded within the operating budget each year is considered a positive credit factor. The establishment of such a reserve with funding up-front or through required payments over time may strengthen credit security.

Endowment/fundraising

Is there an established endowment or fundraising program? The existence of such a program may contribute to financial flexibility. Conversely, is there a dependence on fundraising to support programs crucial to attracting students to the school?

Management And Administration

Management factors are a critical part of charter school review and will be a pivotal factor in determining if a school is investment grade. Standard & Poor's considers the history of charter school establishment. Biographies of key staff members may indicate the depth of the management team. Key staff should have solid experience in financial management in addition to the expected academic/educational credentials, or an experienced management company or public school district staff should provide such expertise. Charter school management is expected to have, or obtain, construction management expertise, as needed. In situations where the success of the charter school is closely tied to the charisma and personality of a founder, succession planning is necessary to ensure ongoing viability of the school.

Private management contracts are not uncommon. This is generally credit-neutral as long as the management company is experienced and the terms of the management contract do not adversely affect bondholder repayment. There should be policies in place to maintain operations in case a management company resigns or is fired.

Details about the budgeting process are important financial management issues, and Standard & Poor's checks to see if management has been generally accurate in its enrollment and cost projections. Information regarding teacher recruitment is also important, as well as teacher certification, salary scale comparisons with the local school district and competing charter schools, how teachers are recruited, certification requirements, comparative salary scale, and turnover.

Debt And Capital Planning

Many state statutes specifically authorize charter schools to issue debt. Public capital financing for charter schools, however, is in its infancy compared to other municipal rating sectors. Many states have

not yet developed an active public debt market for charter schools. Although charter school facilities financing varies substantially from state to state, many schools are left to their own resourcefulness and the diligence of interested community members to secure and finance adequate facilities. Many new schools initially finance space using short-term leases, then later purchase their leased facilities or relocate to new facilities purchased with long-term debt once they have established a financial track record. If a substantial portion of classroom space will still remain under short-term lease after a debt-financed expansion, a contingency plan needs to be in place in case the leased space cannot be renewed.

Charter School Information Requirements

Relevant demand information

- Description of school's history and founding
- Total student enrollment (for last 5 years)
- Current year and future enrollment targets
- Number of students on waiting lists (for last 5 years), preferably broken out by grade-level
- Measures of educational outcomes (test scores, performance on standardized tests)
- Number of faculty and staff
- Description of current facilities (if more than one location, indicate number of students
- Number and description of close competitors

Relevant financial information

- Sponsor (names and addresses of key contacts)
- Charter School management biographies
- Current charter provisions (term and funding levels)
- Charter renewal history and description of charter renewal process
- Audited financial statements (or independent financial reports for last 3 years)
- Current year operating budget
- Description of funding mechanism and cash flow
- Description of any fundraising activities, public or private gifts or grants
- Revenue projections (including estimated enrollment, revenues, expenses, and debt service coverage)

Other documentation requirements

- Sources and uses and debt service schedule
- Description of bondholder security
- Offering statement/disclosure information
- Independent property appraisal (market value assessment of completed project and land may be required)
- Independent site assessment (may be required)
- Lease agreement
- Trust indenture

A key charter school debt ratio is the debt service burden relative to the operating budget. An annual debt service burden of more than 20% of expenses would be considered onerous in most cases. This is probably one of the more critical measures, because a high fixed cost for debt service can significantly limit fiscal flexibility. Any charter school expecting to raise its debt levels needs to demonstrate an ability to pay for the increased debt service, especially if the revenues are expected to come from enrollment growth. The need to grow enrollment rapidly to meet approaching debt service obligations is considered a weakness. The strongest charter schools can demonstrate ability to meet future debt service with existing enrollment levels or very limited reliance on enrollment growth. An example of limited reliance on future growth might be the addition of an extra grade level, which currently enrolled charter school students may graduate into.

Using a lease structure to repay debt rated at the lower end of the credit spectrum may not be considered a material credit weakness, although it is preferable to have a general obligation pledge of the charter school in addition to a mortgage on a school building.

Charter school lease structures must meet Standard & Poor's lease criteria. Basic security features such as appropriate debt service reserve funds, additional bonds tests, use of a trustee to hold bond funds, and similar security features should be incorporated into the financing structure. Legal covenants such as a rate covenant are not relevant to a charter school; charter schools do not charge tuition, but receive state revenues. A charter school usually can only increase net revenues by increasing enrollment or reducing expenses.

Standard & Poor's also considers what future capital requirements and other projects will be necessary to keep schools viable and competitive:

- How will annual maintenance requirements be handled as part of the operating budget?
- If capital facilities are to be expanded, how will the increased operating costs be handled?
- How thoroughly have expansion plans been considered?

Charter schools are at a disadvantage compared with public schools, because their state operating revenues might also be needed for paying debt service, in contrast, public schools enjoy a separate property tax levy for debt service. A formal comprehensive business or capital plan can be a credit strength.

Also of concern are the debt issuing provisions of the entity providing the charter authorization. Is it actively involved and does it have an approval role on projects under consideration? Does the

authorizer have guidelines regarding facilities or debt structure?

Projected future debt service coverage margins are evaluated but may be of limited value compared to a demonstrated ability to manage budgets and generate revenues. Projected budgets should adequately provide for future debt service payments plus a margin for unexpected financial fluctuations. Identifying areas of the budget that could be cut would be an advantage and may serve the purpose of providing a hedge against potential drops in enrollment.

Standard & Poor's prefers projections indicating a coverage margin on new debt. However, the unique nature of charter schools, which receive the bulk of their revenues from government, as opposed to tuition receipts, makes the level of coverage of debt service less important, since the credit quality of the state providing the funding provides a certain level of revenue stability, assuming enrollment stability. Revenues will be stable due to stable state funding and stable enrollment, not from tuition-setting power. Given this, flexibility that can be found in the budget on the expenditure side of the budget to accommodate fixed debt service costs will demonstrate credit strength.

Charter schools that finance facilities to accommodate significant additional student enrollment growth will usually have greater difficulty achieving an investment-grade rating. Facilities construction/expansion risk is present if debt service is onerous and the ability to repay the increased debt is limited if the facility does not open on schedule, is over budget, or can not attract enough additional students to pay for itself. Demonstrating demand for an expanded facility becomes increasingly difficult as the anticipated percentage increase in enrollment grows. It may be even harder to demonstrate the ability to attract enough new students to pay for the increased debt if the school plans to open a new satellite campus in a far away location.

Even a move to new facilities in a nearby location can create the risk that not all students will follow to the new location. In some cases, the attraction of a school may be the ability to walk to school, or a desirable central drop-off location, a feature that may be lost in a move.

Sometimes an additional bonds test can help mitigate concerns about potentially aggressive expansion plans, although additional bonds tests don't necessarily provide full protection, since subordinate debt could also create financial hardship. A senior lien on debt does not help if a school closes due to the difficulties of repaying its other obligations.

Socioeconomic Factors

Traditional economic indicators for general obligation public school districts, such as income, employment base, and unemployment rates, are less of a credit issue for charter schools than for public schools because charter schools are not directly tax supported by the local economic base, but by statewide school funding appropriations. Demographics of an area serviced by a charter school are nonetheless analyzed, particularly population growth. Historic and projected student enrollments are an indicator of overall education demand. A rapidly growing area is generally more capable of supporting education alternatives in order to meet demand for facilities. However, a charter school can be successful in a slow or declining enrollment environment if public school options are substandard, the charter school represents a more attractive alternative curriculum, and there is not major political friction with a charter authorizer from the competition for a declining student pool. Documentation of higher test scores than in competing public schools can help demonstrate the appeal of a school. In some cases, the attraction of a charter school over a public school may be simply the amount of greater discipline being offered, or maybe a less structured environment. Some public school districts view charter schools with specialized curriculum options as almost another kind of magnet school within the overall public school system, and worthy of their support. ■

Non-Traditional Not-For-Profits

The substantial number of rated not-for-profit corporations generally falls into four broad areas that are separate from the traditional sectors of health care and higher education. They are:

- Cultural institutions and attractions;
- Voluntary membership organizations;
- Endowed and charitable foundations and corporations; and
- Research institutions.

In many respects, the only similarity between these four entities is their tax-exempt status. Yet, despite this diversity, Standard & Poor's Ratings Services has developed a common rating methodology to assess their creditworthiness. This methodology builds on our criteria for hospitals and universities, yet incorporates the unique characteristics of each new nonprofit entity. In general, Standard & Poor's public finance does not rate political parties and churches.

Rating Methodology

The four main credit factors considered for each organization are:

- Demand for the organization's products and services;
- Management and governance;
- Financial performance and resources; and
- Debt and capital structure.

While these factors are the same as those used for assessing many types of credits in public finance, the focus of the evaluation is quite different, depending on the type. For cultural institutions, demand is often the focal point. Most of the cultural institutions rated by Standard & Poor's are admissions-driven, and earned income is a function of the number of people who attend or visit a facility. For membership organizations, the primary focus is the tie between the organization and its members, and an analysis of the service or services provided. Membership revenue may not be the largest source of operating income for the organization, but the relative importance of the corporation to a particular industry is often a key factor. Analysis of endowed foundations focuses less on demand and more on financial resources and balance sheet strengths, and the likelihood of growth or stability, or the possibility of reduction in the pool of assets. The driving factors behind the analysis of research organizations are the nature and level of the research, whether the costs of research are fully reimbursed, and an entity's ability to withstand funding changes. Most of the research institutions rated by Standard & Poor's, in addition to a sizable research base, also benefit from the presence of long-term investments or endowment.

Demand

Standard & Poor's assessment of demand requires a thorough understanding of each entity, its mission, market, and niche. An important component shaping the character of these organizations is an issuer's tax-exempt status. Such status entitles nonprofits to an exemption from taxes on related business income and to issue tax-exempt debt—two significant advantages not available to for-profit counterparts. Conversely, not-for-profits often run breakeven financial operations; but because these organizations retain earnings without shareholder distribution, they tend to build reserves over time.

Standard & Poor's reviews an organization's charter to assess its mission and changes in this role over time. Depending on the primary activity of the organization, we examine various measures of industry effectiveness and performance. For example, when assessing a museum, Standard & Poor's might review net revenues per visitor, a common industry statistic. When assessing an endowed or charitable foundation, assessment of fundraising efficiency (what portion of dollars raised is spent on programs and what portion on administrative costs), is also important. This point is especially true for organizations that engage in direct mail fund drives and which raise a substantial portion of their annual budgets from external donors.

An assessment of competition or competitive position is also important. Unlike a municipality, which provides essential services and therefore is likely to survive despite fiscal stress, nonprofits must have a role unique enough to ensure ongoing viability. Closing a local service nonprofit organization might not cause significant long-term distress or dislocation to the local community or users. But closing an important federally sponsored research institution that provides essential research for the federal government might be more disruptive to the government of the entities in this sector rated by Standard & Poor's. However, very few of these institutions go out of business. Some organizations have voluntarily rescinded their exempt status and

converted to taxable, or proprietary corporations. Typically, any tax-exempt debt would be refunded at that point.

Management and governance

Management is an important credit factor, particularly for nonprofits wrestling with industry competition and often limited financial flexibility. Standard & Poor's assesses management and governance by reviewing:

- The composition of the board of trustees, its expertise, its independence, its committee structure, and its role in setting financial guidelines and goals;
- The quality of management information readily available in the rating process;
- Operational policies, investment and debt policies, and strategic plans;
- The ability to anticipate and react to new developments in the marketplace; and
- Current tenure of existing administrative officers of the organization and their relevant experience in the industry.

While nonprofit corporations are not required to fully adopt the provisions of Sarbanes Oxley at this time, in practice many of them voluntarily adopt most of these as practices, with the exception of certification of financial statements. Most of the organizations in this sector that achieve investment grade ratings also engage in multi-year financial planning and can easily produce budget models that forecast future operations.

Since many exempt organizations rely on large endowments, balance sheet management (both asset and liability) also is important. Standard & Poor's reviews investment policies, investment performance relative to market benchmarks, current asset allocation, and spending policies. As far as liabilities, Standard & Poor's reviews debt policies, existing debt structure (including any off balance sheet or subsidiary liabilities), plans for reducing any postretirement liabilities, and employment cost structure.

What is a Nonprofit?

A nonprofit organization is an entity organized so that no part of its income benefits a private shareholder or individual. A nonprofit corporation usually applies for a tax-exemption under Subchapter F of the Internal Revenue Code. The majority of tax-exempt organizations rated by Standard & Poor's derive their tax-exempt status from Section 501(c)(3) of the Internal Revenue Service Code.

Financial performance and resources

Financial analysis begins with an historical overview of the institution's operations. The not-for-profit corporations rated by Standard & Poor's almost universally report their operations under FASB reporting guidelines. Financial analysis typically incorporates five years of historical performance, current year's preliminary results, and the next year's operating budget. If 5-year, or multi-year forecasts are available, these documents provide a good indication of management's assumptions about future business activities. Within the financial context, Standard & Poor's examines:

- Growth in the operating budget and budgeting practices;
- Revenue diversity and cyclicality and the opportunity for future revenue growth;
- Expense flexibility, or the ability to make programmatic changes without negatively affecting demand; and
- Rate flexibility, particularly in those cases where there is significant industry competition;
- Financial performance on an aggregate basis, measured by the existence of operating surpluses or deficits;
- And financial resources, measured by cash and investments and unrestricted and expendable resources.

Affiliated organizations are generally consolidated in financial statements of the entity being rated, and Standard & Poor's analysis incorporates the assets and operations of subsidiary corporations of not-for-profits. Projections beyond the current budget year also are reviewed, for they often reveal new program directions and can be a gauge of management's realism. Important financial ratios involve the assessment of debt burden and operating cushion.

For debt burden, Standard & Poor's examines maximum annual debt service as a percentage of expenses and total debt relative to cash and investments and to total unrestricted resources. Unless there is an ability to adjust rates on an ongoing basis, Standard & Poor's expects current operating surpluses to cover total debt service, including principal and interest associated with new debt. While many nonprofits operate on a breakeven basis, Standard & Poor's believes that these organizations should have an operating cushion to shield them from inevitable economic cycles. Operating margin varies by type of organization. Some membership organizations demonstrate a high level of profitability, while some charitable organizations only break-even from year-to-year. The most important cushion ratio compares unrestricted resources to expenses

and provides a measure of an entity's ability to fund operations if operating revenues decrease.

Different organizations require different cushion levels. For the most part, the level of working capital required is a function of the organization's cash flow. An entity that receives a steady stream of income throughout the year can operate on thinner reserves than one that receives most of its revenue once or twice a year. An exempt organization that can quickly and easily reduce expenditures at midyear can operate with thinner reserves than one that must commit funds well in advance. Most not-for-profit corporations rated by Standard & Poor's have a good sense of their cost structure—what portion of their operating expenses are fixed and what portion, or components, are variable. Some organizations indicate that a substantial portion of their salaries and benefits could be considered to be variable in nature, while facilities costs, insurance, and legal fees are not. Generally, institutions with unrestricted resources (measured in cash and liquid investments) below 25% of their annual operating budget have a limited financial cushion.

In addition to operating revenues, many nonprofits rely on annual voluntary contributions. A long history of successful fundraising managed by a professional staff can offset concerns about the cyclicality of this revenue source. However, these strengths would not be enough to offset the risks associated with an organization totally dependent on contributed revenues.

Debt and capital structure

In addition to reviewing specific debt ratios as noted above, Standard & Poor's considers security, the project being financed, and future capital plans in its assessment of debt. Organizations that are capital, or facilities-intensive, should have debt policies in place. Debt policies should include the types of allowable debt, directions about when derivatives can be used, and how an appropriate level of debt is determined. Other long-term liabilities, such as postretirement obligations, may need to be considered in addition to any long-term bonded indebtedness. The level of debt that is manageable is very much specific to the type of institution being rated. Cultural facilities, which are more place-intensive, tend to have higher debt burdens than other types of nonprofit corporations.

Security. Most not-for-profit corporations' bond issues are secured by an unsecured corporate, GO pledge of the obligor institution. While Standard & Poor's will consider a narrower pledge, such as membership fees at a museum or indirect cost recoveries of a research laboratory, it is unlikely that such a structure will receive as high a rating as a GO pledge. As additional security, a fully funded debt service reserve is prudent unless the issuer has substantial liquidity. Most issuers also include legal covenants, such as rate covenants, asset-to-liability tests, and restrictions on the issuance of additional debt. The rating impact of such covenants depends on the nature of the entity and each covenant's relative strength or degree of restriction. Some covenants are so loosely written that they do not provide any real protection for bondholders. Stronger legal covenants generally do not result in a higher general obligation rating. Endowed foundations present a special case for bondholders. While they look for some indication that a pool of assets will not be spent down, nonprofit corporations issuing tax-exempt debt are subject to arbitrage restrictions, which would be a strong disincentive to pledging any kind of "reserves". However, restrictive covenants and policies remain a protection that bondholders wouldn't otherwise have, and a gauge of willingness to meet the needs of investors.

Project. An analysis of the project to be financed incorporates several factors. Standard & Poor's initially will examine the need for and scope of the project, and how it fits into the organization's overall activities. Many of the nonprofit project financings rated by Standard & Poor's involve the construction of new headquarters buildings and the consolidation of operations in one location, and are considered fairly essential. Standard & Poor's also analyzes the degree of self support assumed for the project, compares debt maturity with project life, and evaluates other sources of funding. Undertaking a project that does not help meet an organization's mission, that takes it in new untested directions, or that is likely to require considerable financial resources in the future even when an organization has debt capacity, could be considered a negative rating factor. Most of the project financings rated investment grade are projects being undertaken by existing exempt organizations. Start-up projects by new organizations without a track record, or by entities without any financial resources, may find it difficult to achieve investment-grade ratings.

Capital improvement program. A review of the size, sources of funding, and timing of future capital plans provide important insight into an organization's needs and goals for expansion. Standard & Poor's also is interested in determining whether these plans will significantly change an organization's scope or mission. Some organizations, such as aquariums or other attendance-driven cultural institutions, must constantly plan for new attraction and updates of their facilities. A failure to consider new exhibits or changing exhibits could be of concern.

Cultural Institutions

While the rated universe of cultural organizations largely consists of museums, the rating approach is similar for all types, including zoological parks, public radio and television stations, aquariums, and historical sites. Rated issuers are highly diverse, ranging from fine arts to natural history institutions. They also vary widely in their constituencies (adults, children, tourists, or local residents), admission and membership levels, revenue sources, and financial flexibility.

To assess demand for a cultural institution, Standard & Poor's examines:

- The national and/or international prominence of the collection;
- Admissions and membership levels and trends;
- Competition from and location near other local museums, similar organizations, and tourist attractions; and
- Fee structure and rate flexibility.

Service area economic conditions also play an important role, particularly when the institution has a more limited, local draw. In addition, admission and membership trends often are affected by the use of blockbuster or special exhibits, a phenomenon somewhat unique to museums. These super shows usually run for a limited time and, despite huge crowds and swelling revenues, often are money-losing propositions. Nonetheless, blockbusters can have a longer-term positive effect by attracting new members and repeat visitors.

Because blockbusters dramatically inflate revenues and expenditures in show years, it is often difficult to make accurate financial plans. As a cultural institution assumes long-term debt, it is important that it budget for these variations and maintain an adequate financial cushion to offset fluctuations. In fact, the highest-rated museums enjoy significant financial flexibility, with endowment and unrestricted monies well in excess of the annual operating budget, even though they do not always produce consistently good operating margins.

The visible civic role played by many cultural institutions often results in high levels of municipal government and/or private donor support. Attendance-based cultural facilities with cyclical revenue streams, limited outside support from governmental or private donors, and no endowment, would be unlikely to achieve investment-grade ratings. Start-up cultural organizations are not likely to be rated investment grade, since they do not have a record of attendance or membership, and might not have an endowment. Museums that undergo significant expansions must demonstrate that there is some predictability to their current revenue source, such that projections seem attainable. In fact, most forecasts are far more positive for first year attendance after a major project completion than what actually occurs.

An important part of Standard & Poor's analysis of a cultural institution is a review of the proposed project, particularly its potential impact on attendance or membership and the organization's mission and focus. Exempt organizations often receive substantial governmental support, which might offset the risks associated with increased debt issuance. Therefore, the outlook for future governmental and private support is a crucial part of Standard & Poor's analysis.

Documentation Requirements

- Official statement or other disclosure
- Bond resolution or trust indenture
- Lease or mortgage
- Five years audited financial statements and current year's budget summary
- Entity descriptive information
- Legal opinions*

*In addition to tax and validity opinions, Standard & Poor's may require certain bankruptcy-related opinions, including the status of the issuer under section 303(a) of the Bankruptcy Code-the inability of a creditor to file an involuntary petition against the issuer-preference opinions, and, if applicable, nonconsolidation opinions. Most private universities issue tax-exempt debt through conduit issuers. Sometimes this requires additional documentation such as loan agreements and information on the intent to perfect security interests.

Membership Organizations

One subset of not-for-profits that has garnered significant market interest is voluntary membership organizations. Such entities range from professional membership organizations to trade associations, religious organizations, and scientific societies. The rating analysis depends, in large part, on the primary activity of the organization and the benefits derived from membership.

As with other not-for-profits, Standard & Poor's analysis of a membership organization begins with a comprehensive evaluation of the operating history of the institution and its current activities and management. While actual membership growth is important as a proxy for demand, the main focus is on understanding an institution's particular industry and role within that industry. To that end, Standard & Poor's examines offered services, membership trends, and measures of industry effectiveness and performance. Some organizations have a role so unique that they have no competition in their particular industry. For example, the

Association of American Medical Colleges is the accrediting body for the majority of the nation's medical schools and the only sponsor of the Medical College Admissions Test (MCAT). Regardless of an organization's competitive position, Standard & Poor's expects to see a consistent or stable membership base. Wide fluctuations in membership make planning and budgeting difficult and are viewed negatively. Standard & Poor's rates both large and small membership organizations and size is an important characteristic. Generally, the larger the organization, the more revenue diversity and greater level of financial resources it possesses relative to operating expenses and debt. However, a small membership organization could be highly rated with a substantial endowment and good operating performance.

Other areas of inquiry for membership organizations include:

- Historical membership data by type of member for at least ten years;
- Breadth of focus. Organizations with a narrow focus are felt to be most vulnerable to periods of economic stress;
- Degree of professionalism in the administrative staff. For any investment-grade credit, Standard & Poor's would expect to see an experienced, permanent staff with functions distinct from the governing body, or membership directorate of the organization;
- Benefits derived from membership. Exceptionally strong credits provide services that are highly desired and cannot be obtained elsewhere; and
- Competing membership organizations who provide the same type of services and may overlap with members
- Percentage of members who count the organization as their primary professional society.

Financial performance

The financial history of a membership organization is analyzed for at least a five-year period. Standard & Poor's evaluates historical financial performance to determine how well the organization performed given its available revenues (income statement) and resources (balance sheet). Most of the membership organizations rated by Standard & Poor's have limited capital needs and an operating cushion equal to six months of operating expenses, however, there are entities with a considerably higher cushion and those with a much lower cushion who pursue a rating. While many organizations have sufficient liquidity to pay for the project being considered, partially paying the project costs with accumulated equity to reduce debt burden also reduces operating cushion. Unless debt burden is a concern, using equity for long-term projects is unlikely to result in a higher rating for the organization.

Standard & Poor's examines the major sources of revenues and patterns of expense growth. As for most rated organizations, revenue diversity is important and shields membership organizations from potential cycles. A critical issue is budgetary flexibility and the ability to cut expenditures midyear without jeopardizing operations. Management should be able to quantify areas of variable costs that can be eliminated, or scaled back, in the event of financial stress. Ancillary services, provided at no cost to the membership, account for a major portion of operating expenses at many membership organizations, and are often the first place that management will look to scale back. However, organizations must recognize that major cuts in public service activity could call into question their tax-exempt status. Membership fee history also is examined and compared with that of any competing organizations. Rate flexibility is particularly important, and it is preferable that any rate-setting capacity be centralized within the financial management function rather than with a voluntary board.

Endowed And Charitable Foundations

The common characteristic of all tax-exempt endowed foundations is a pool of money used to support a specific cause, such as health care or medical research, educational endeavors, or programs for low-and moderate-income people. United States tax laws, in fact, require that certain philanthropic organizations give away at least 5% of their assets every year. This required drawdown in resources is an important consideration, since most foundations will secure their bonds with an unsecured GO pledge, which in effect, encompasses the corpus of their unrestricted endowment and related income. Many of the not-for-profits currently rated by Standard & Poor's have no source of income other than investment earnings. The size and quality of a foundation's endowment relative to both debt and operating expenses is thus of

Relevant Statistics for Cultural Institutions

- Historical admissions and membership trends.
- Competitor institutions (local tourist attractions and other museums).
- Fee structure and history of rate increases.
- Revenue diversity.
- Net revenue per visitor.
- Average annual membership fees.

paramount importance. Standard & Poor's requests at least five years of historical financial data and asks for portfolio and endowment data such as quarterly board reports.

In evaluating endowment, Standard & Poor's looks beyond size at a number of specific factors, including:

- Growth in endowment assets over time;
- Asset allocation policies and quality of the investment pool, and a comparison to targeted investment mix;
- Historical rates of return compared to broader market or customized benchmarks;
- Relative liquidity and availability of the portfolio;
- Endowment spending policies; and
- Restrictions on use of earnings and principal.

Since the endowment is the basis for any rating of an endowed organization, Standard & Poor's may require legal covenants restricting the foundation's use of its endowment. Generally, restrictions mandate liquidity and asset coverage tests, and limit additional debt issuance.

While the above analysis focuses primarily on the balance sheet, foundation mission, activities, and budgetary flexibility are also important. To date, rated foundations tend to fall into one of two categories—independent or grantmaking and operating. Although, one type is not necessarily more creditworthy than the other, grantmaking entities may have more budgetary flexibility than operating foundations that actually run their own charitable programs. Standard & Poor's is particularly interested in the type of activity supported by a foundation and the extent to which it can curtail this support and control operating costs. Once started, Standard & Poor's assumes that certain programs or foundation giving would be difficult to stop, particularly if the foundation is the sole sponsor.

Research Institutions

While nonprofit research institutions abound, those most capable of achieving investment-grade ratings generally have a long history of working with a governmental agency, or have a medium-to-high level of endowment. Despite their close ties to governments or sponsors, research organizations often face considerable credit risks, including contract nonrenewal and cyclical support for the type of research being sponsored. Because of these risks, small institutions in a single competitive field, or in a field with a low funding priority, are more likely to receive lower ratings.

As with most areas of credit analysis, Standard & Poor's reviews industry information to assess a nonprofit research organization. Specific governmental contracts are needed if the institution is operating under an especially large or long-term contract that provides the bulk of its operating income. Management meetings might include not only the institution's management, but also large sponsors to gauge ongoing support for the organization.

Standard & Poor's considers the following factors to be particularly applicable when rating research institutions:

- History of research programs and dollar amount of funding;
- Areas of research specialization and competition;
- Growth in the number of contracts and funding;
- Diversity of research—both classified and unclassified;
- Indirect cost recovery rates currently in place and timetable for renegotiation
- Funding stability—options for contract renewal if less than five years to termination dates; and
- Budgetary flexibility and the capacity to downsize.

Other lines of inquiry go beyond the research program and include an evaluation of management, financial operations and resources, and debt burden as previously discussed. Like membership organizations, Standard & Poor's expects rated institutions to include permanent staff whose functions include financial management and day-to-day operations. Most research institutions rated by Standard & Poor's are financially and operationally autonomous; however, any ties to a parent organization would involve an analysis of this relationship. Research institutions receiving federal funds for research have an incentive to issue tax-exempt debt for facilities. These organizations can include the costs of facilities capital in their requests for reimbursement. For many of them, being able to recoup the cost of capital makes debt a more favorable option than leasing research facilities.

Bondholder security for debt issued by these organizations is typically a GO of the institution, but for many research organizations, direct and indirect costs of research are the primary sources of

Relevant Statistics for Research Institutions

- History of research programs and funding
- Areas of research specialization and competition
- Growth in the number of contracts, funding levels, and rate of indirect cost recoveries
- Diversity of research-both classified and unclassified
- Funding stability-options for contract renewal if less than five years to termination dates
- Budgetary flexibility and the capacity to downsize

operating revenue. While research funding has become increasingly competitive, and there is potential for continued changes in reimbursement mechanisms, research funding in general is proving to be a stable source of reimbursement and revenue for research institutions. Rate covenants generally carry little weight in legal provisions, since these organizations do not have the ability to adjust their rates to federal or other sponsors on an annual basis. However, additional bonds tests carry more weight, and historical additional bonds tests add comfort that historical revenues have at least been sufficient to pay for the current and proposed debt. ■

Introduction To Structured Finance

Structured municipal financings are an integral part of the municipal debt market. Structured debt includes conventional transactions—such as bonds, notes, and commercial paper (CP)—secured by various types of credit and liquidity facilities, and secondary-market derivative products—such as principal and interest strips, custodial receipts, and tender option bonds.

Standard & Poor's Ratings Services rates primary market structured debt on the basis of third-party credit or liquidity support without regard to the issuer's underlying rating. To substitute the third-party credit provider's rating for that of the issuer, the credit provider must secure debt service payments, and/or, in the case of bonds with demand options, guarantee payment of tenders.

In the secondary market, a municipal trust structure is used to issue receipts and act as a conduit for the payment of principal, interest, and premiums, if any, from the underlying obligation to the derivative receipt holder. The rating of the derivative is determined by the rating on the underlying bonds, which must have a current Standard & Poor's rating. However, the rating on the derivative may also be enhanced by using credit and/or liquidity support.

Standard & Poor's assigns a long-term or note rating to fixed-rate municipal bonds and notes. A dual rating (for example, 'AAA/A-1+') is assigned to municipal variable-rate demand obligations (VRDOs) and generally benefit from credit and/or liquidity enhancment. The first component of the dual rating reflects the likelihood of payment of principal and interest when due. The second component addresses the demand feature of the bond and the likelihood of payment of the purchase price of tendered bonds. In the case of short-term variable-rate notes, Standard & Poor's note rating symbols (for example, 'SP-1+/A-1+') are used for the first component of the rating instead of long-term symbols. For municipal commercial paper programs, Standard & Poor's commercial paper symbols are used (for example, 'A-1+').

Documentation Requirements

The primary documents needed to rate structured issues are listed below. While the list is fairly standard, additional documents may be requested in order to complete a rating.

Primary market issues

- Rating request.
- Trust indenture.
- Letter of credit or SBPA as applicable.
- Authorizing resolution.
- Remarketing agreement.
- Paying/tender agent agreement.
- Depository agreement (commercial paper issues only).
- Preference opinion, if requested.
- Enforceability opinion(s), if requested.
- Offering memorandum.

Secondary market issues

- Rating request.
- Custody/trust agreement.
- Offering memorandum, if requested.
- Cash flow verification, if requested.
- Offering memorandum for underlying security.
- Tender option agreement, if applicable.
- Broker-dealer agreement, if applicable.
- Auction agent agreement, if applicable.
- Market agent agreement, if applicable.
- Credit or liquidity support documents.
- Tax opinion.
- Enforceability opinion(s), if applicable.
- True sale opinion, if applicable.

Outlooks are generally placed on VRDOs that have credit provided by other than an LOC bank. The outlook will reflect the outlook of the obligor or bond insurer as applicable. Commercial paper ratings, due to the tenor of the security do not receive outlooks. ■

LOC-Backed Municipal Debt

A bond transaction backed by a letter of credit (LOC) is typically issued by a municipal entity, which serves as a conduit. The bond proceeds are loaned to the underlying obligor, which is the entity that bears the responsibility for repayment of the debt. Banks provide LOCs, which cover full and timely payment of principal and accrued interest in exchange for annual commitment and drawing fees.

Standard & Poor's Ratings Services has rated a variety of structures, including fixed-rate bonds and variable-rate put bonds. Fixed-rate bonds only carry a long-term rating. Put bonds, which require LOC coverage for purchase price, as well as for principal and interest, carry a dual rating. In its analysis, Standard & Poor's seeks to ensure that the likelihood of payment is equal to the likelihood of the bank's honoring draws on its LOC. The bondholder is insulated from any bankruptcy, default, or lack of performance by the obligor.

The rating that Standard & Poor's assigns to a LOC-backed transaction is based on the LOC bank's issuer credit rating. Standard & Poor's applies the weak-link theory if two or more LOCs combine to support a transaction. If each bank has a several obligation, the transaction's rating will be that of the lowest-rated bank. Confirmation LOC deals can earn ratings in accordance with the joint support criteria.

Preference Concerns

Standard & Poor's is concerned that the payment of debt could be recaptured from the bondholders as an avoidable preference in the event of a filing of a bankruptcy petition by the issuer, the borrower, or any general partner or guarantor of the borrower. A trustee in bankruptcy may set aside, or recapture, certain payments on account of antecedent debt made within a certain period of time prior to the filing of a bankruptcy petition. The appropriate preference period within the U.S. is 90 days (or 365 days in the case of any "insiders").

Payment structure

There are several ways to address possible preference problems, beginning with the choice of payment structure. The three basic structures are:

- Direct pay;
- Prioritized direct pay; and
- Standby LOC.

In a direct-pay structure, the primary source of payment to bondholders is funds drawn under the LOC. This is the only source Standard & Poor's considers in its rating analysis. The LOC must specifically state that the bank will pay with its own funds or reference International Standby Practices version 1998.

The prioritized direct-pay structure is similar to direct pay. Bondholders are paid with LOC funds as the secondary source if the trustee does not hold sufficient preference-proof funds. Preference proofing entails providing the trustee with funds for the appropriate preference period before a payment date and certifying that no bankruptcy has occurred with respect to the depositor within such period.

In standby LOCs, the least common payment structure, bondholders are paid first with nonpreference-proof funds. Since this structure could allow for the disgorgement of bond payments following a bankruptcy, the LOC is sized to cover the maximum amount of preference payments, in addition to its coverage of principal and accrued interest. Upon a bankruptcy filing, the LOC is drawn upon to establish an escrow fund for the preference risk. To protect bondholders from the consequences of a bankruptcy following a final payment, the LOC expiration date must extend beyond the duration of the appropriate preference period after such final payment. At the conclusion of such period, if the trustee does not receive evidence indicating that no bankruptcy has occurred, the LOC shall be drawn upon to establish an escrow fund.

Purchase price

Variable-rate demand bonds that use remarketing proceeds as the initial source for purchase price payments also raise preference concerns. The remarketing proceeds that are used as a payment source to tendering bondholders must be restricted. These proceeds may not include funds from the issuer (if not a municipal entity), the underlying obligor (if not a municipal entity), any general partner, or guarantor. The guarantors that raise this concern would be those of the bonds or the loan agreement, but not of the reimbursement agreement. If there are no guarantors of the bonds or loan agreement, then Standard & Poor's may request a written statement to this effect.

Preference opinions

In analyzing LOC-backed transactions, Standard & Poor's considers whether the payment of debt may be recaptured from the bondholders as an avoid-

able preference in the event of filing of a petition under the U.S. Bankruptcy Code with respect to the issuer, the borrower, any general partner of the borrower, or any guarantor. Under the U.S. Bankruptcy Code, a trustee in bankruptcy may set aside, or recapture, certain payments on account of antecedent debt made within a certain period of time before filing a bankruptcy petition. Preference opinions have indicated that any payments to bondholders from particular sources of funds will not be recaptured as a preference in the event of bankruptcy of a related party.

Standard & Poor's no longer requests a preference opinion for transactions that limit payment sources to the following:

- Initial bond proceeds;
- LOC draws;
- Remarketing proceeds (as appropriate);
- Funds held by the trustee for at least 90 days (or other appropriate preference period), during which time there has been no bankruptcy filing by or against the issuer, borrower, general partners, or guarantors;
- Insurance proceeds paid directly to the bond trustee; and
- Other money, including refunding proceeds, accompanied by a future preference opinion.

Standard & Poor's will continue to request preference opinions for the following:

- Deals in which LOCs have been provided for antecedent debt if there is a pledge of new collateral to the bank; and
- Transactions that may fall outside the jurisdiction of the U.S. Bankruptcy Code; and
- Standard & Poor's reserves the right to require a preference opinion for any deal if circumstances so warrant.

Credit Cliff Issues

A Standard & Poor's rating reflects the probability of full and timely payment to the bondholder until final maturity, or such time as the bonds are paid in full. Credit cliff events—that is, events that lead to a termination or reduction of the amount or level of credit support prior to such time—are, therefore, important factors in analyzing these structures.

LOC expiration

Structures allowing for the expiration of the outstanding LOC prior to bond maturity have a common potential credit cliff. Most bonds rated by Standard & Poor's have 20-to 30-year maturities, while the LOCs supporting them rarely have initial terms beyond seven years. The bondholder faces the possibility of having purchased a rated LOC-backed bond issue, but holding unrated and unsupported bonds. To prevent such a scenario, an extension of the LOC or a substitute LOC must be executed prior to expiration of the existing LOC, or it is necessary to take out the bondholders through a mandatory redemption or a mandatory tender. Any alternate LOC must meet the conditions for rating maintenance or lead to a mandatory tender.

LOC substitution

A potential credit cliff arises from the provision of a substitute LOC. To avoid such a scenario, any substitution of the LOC must be accompanied by written confirmation from Standard & Poor's that the provision of the substitute credit facility will not, in and of itself, result in a reduction or withdrawal of the then-current rating on the bonds (rating maintenance). Alternatively, a substitution may be executed without certification of rating maintenance if existing bondholders are taken out via a mandatory tender or redemption on or prior to the date of substitution. Note that either of these two remedies is necessary prior to an assignment by the bank of the LOC, or prior to the granting of participation interests to additional banks (unless it is clearly stated that the granting will not relieve the provider of its obligation under the LOC).

Nonreinstatement

Another potential credit cliff arises from provisions in the LOC that allow the bank to declare an event of default under the reimbursement agreement or nonreinstatement of interest coverage under the LOC, following a draw for interest. Any notification from the LOC provider to the trustee of these events should lead to an immediate acceleration of the bonds, mandatory redemption, or mandatory purchase. In such a scenario, the LOC must have sufficient interest coverage to cover all interest until it ceases to accrue. Any waiver of events of default should be contingent on written evidence of the LOC provider's reinstatement of principal and interest coverage in full and rescission of the notice of event of default under the reimbursement agreement.

Conversion

Conversion from one interest rate mode to another can also give rise to credit concerns if the LOC either expires on conversion or has insufficient interest coverage for the new mode. The provision of a substitute LOC with sufficient interest coverage and rating maintenance, or a mandatory redemption or mandatory tender upon conversion, can adequately address this concern.

Affirmative retention option

To mitigate the impact of credit cliff events, bondholders may be given the option to retain their

Criteria Outline for Bank-Supported Municipal Debt

VII. Miscellaneous

I. Preference-proofed monies (issuer and/or obligors not bankruptcy-remote)

A. Available monies/eligible funds for payments not derived from credit and liquidity facilities.

B. Remarketing proceeds prohibited from issuer and obligor(s).

C. Preference opinion covering all payment events except defeasance not paid with available monies/eligible funds.

II. Payment events

A. Regularly scheduled principal & interest.
  1. All interest rate modes described in detail
  2. Adequate interest coverage provided by bank:
    a.) Maximum days in longest rate period covered, plus
    b.) Number of calendar days required to reinstate interest coverage after a draw on the bank facility, plus
    c.) Number of calendar days required to take out bondholders through mandatory tender, mandatory redemption, or acceleration following receipt of bank notice of interest nonreinstatement

B. Mandatory tender
  1. Mandatory tenders described in detail
  2. Sources of payment

C. Optional tender (puts)
  1. Put options described in detail
  2. Sources of payment

D. Mandatory redemption
  1. Mandatory redemption events described in detail
  2. Sources of payment

E. Optional redemption (calls)
  1. Mandatory redemption events described in detail
  2. Sources of payment
  3. Premiums not covered by credit facility, if any:
    a.) On hand at time of call notice to bondholders
    b.) Investment options adequate to support rating

F. Acceleration
  1. Events of default and remedies described
  2. Specify when interest ceases to accrue
  3. Sources of payment

G. Defeasance
  1. New preference opinion required at time of legal defeasance if issuer and obligor(s) are not bankruptcy-remote
  2. Standard & Poor's rating maintenance required for variable-rate defeasance
  3. Acceptable defeasance securities:
    a.) Cash
    b.) U.S. government obligations
      i.) U.S. Treasury obligations
      ii.) Agency obligations fully guaranteed by U.S.
      iii.) Obligations of certain agencies sponsored by U.S. government
    c.) Securities rated 'AAA' refunded with U.S. government obligations

III. Required bondholder takeouts
(mandatory tender, mandatory redemption, or acceleration)

A. Interest nonreinstatement following credit facility draw

B. Bank facility expiration

C. Replacement of bank facility without rating maintenance

D. Receipt of bank notice of event of default and termination of bank facility

Criteria Outline for Bank-Supported Municipal Debt (continued)

IV. Bank facility drawing instructions

A. Credit facility draws must be consistent with bank document timing

B. Liquidity facility draws

1. Timing consistent with bank document
2. Amount drawn is according to remarketing proceeds on deposit, if any

V. Bank document termination events

A. Timed termination

1. Termination countdown begins only after actual receipt of notice of bank notice by trustee or other party
2. Bondholder takeout honored by bank must occur following receipt of bank termination notice

VI. Reimbursement provisions

A. Credit advances

B. Liquidity advances

VII. Miscellaneous

A. Investment instructions for unused remarketing and bank facility proceeds must be adequate to support rating

B. Trustee or other specified drawing party may not resign or be removed until appointment of a successor

C. Drawing party may not require indemnity to draw under bank facility

D. Custodian instructions to release bank bonds only after written notice of liquidity facility reinstatement from bank

E. Notices to Standard & Poor's

1. Fixed rate conversion
2. Redemptions
3. Bank facility expiration, termination, extension, or substitution
4. Changes to legal documents
5. Defeasance
6. Acceleration

bonds. To affirm their intent to retain the bonds, bondholders should acknowledge in writing their understanding of the rating consequences prior to the event occurring.

Timeliness of LOC draws.

It is necessary to synchronize the trustee's draw instructions under the bond indenture with the payment terms of the LOC to ensure that the LOC is drawn upon in accordance with its terms to provide for full and timely payment of principal, interest, purchase price, and premium, if any.

LOC Sizing

An LOC must be for a specific amount with a definite expiration date. Other limitations reviewed within an LOC include its terms for draws, its terms for reinstatement, and its turnaround times for the bank to honor an LOC draw. These terms are reviewed in conjunction with the structure of the bond documents to conclude that the LOC offers full and timely coverage for the transaction.

The factors used to calculate the required amount of LOC coverage are the following:

- Principal: the principal portion must equal the current outstanding amount of bonds.
- Premium: the amount corresponding to the largest premium applicable to a mandatory redemption or tender.
- Interest: the interest portion shall be an amount equal to the maximum number of days of interest that could accrue calculated at either the actual rate for fixed-rate bonds or the maximum rate for floating-rate bonds.

For purposes of calculating the interest coverage of the LOC, the appropriate length of the calendar year, 360 or 365/6 days, must correspond with the basis of calculation within the bond documents. The LOC provider should always agree to pay with immediately available funds. It is critical that the LOC covers the maximum amount of interest that can accrue in the worst-case scenario.

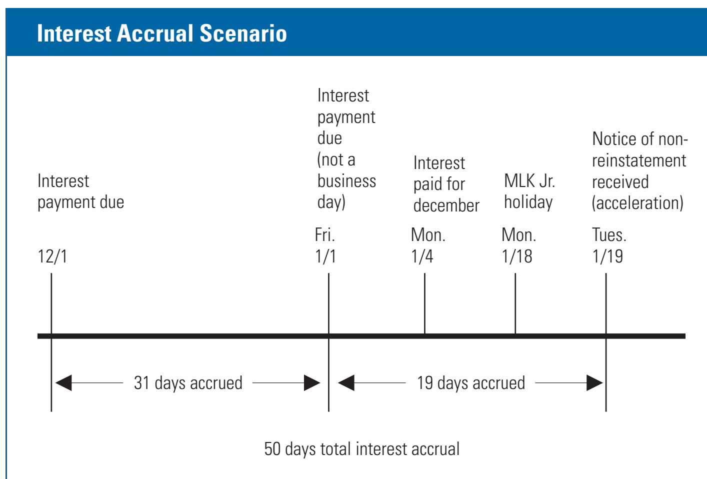
For direct-pay and prioritized direct-pay transactions, the following worst-case scenario would apply. In this instance, the trustee draws on the LOC for full coverage of the longest interest period. Following the draw, the LOC bank sends notice of

nonreinstatement of interest coverage at the latest possible date under the terms of the LOC. The trustee then accelerates the issue, and interest ceases to accrue at the latest date in accordance with the indenture. Standard & Poor's calculation of interest coverage also considers delays in notices or payments caused by nonbusiness days. The timeline is an example of Standard & Poor's calculation of minimum interest coverage for a direct-pay LOC transaction. Assume the following structure:

- Interest is paid on the first business day of each month, based on a 365-day year.
- LOC interest coverage automatically reinstates on the tenth business day following a draw, unless the trustee is notified of nonreinstatement.
- If the trustee is notified of nonreinstatement, it will immediately accelerate the bonds.
- Interest ceases to accrue upon the date of declaration of acceleration.

If the trustee is paying interest for the month of December, interest will be due on the first business day of January. If Jan. 1 is a Friday, then on Monday, Jan. 4, the trustee will draw on the LOC and pay 31 days of interest. The LOC bank can send notice of nonreinstatement as much as 10 business days later. Since Saturdays, Sundays, and holidays are nonbusiness days, notice of nonreinstatement could come as late as Tuesday, Jan. 19. The trustee would accelerate the bonds, and interest would cease to accrue that day. Therefore, 19 days of interest would have accrued in January. In addition to the 31 days of interest from December, the total minimum interest coverage would be 50 days. Note that if interest does not cease to accrue upon the date of the declaration of acceleration, additional coverage will be needed. Additional coverage may also be needed if there is a longer accrual period between the bond closing date and the first interest payment date on the bonds (for example if the bonds closed on Nov. 20 and the first interest payment date was Jan. 4).

Interest Accrual Scenario



In standby LOCs, where nonpreference-proof money is the first source of payment to the bondholder, the worst-case scenario also includes the consequences of the borrower's bankruptcy. In addition to coverage for accrued interest, the LOC must also cover the maximum amount of interest that can be disgorged from bondholders if it were deemed a preferential transfer. Most transactions of this type have individual features. The factors to consider in calculation of interest coverage are:

- Schedule of loan payments;
- Timing of notice of bankruptcy;
- Events of default;
- Grace periods;
- Acceleration schedule; and
- Applicable preference period.

Note that the LOC's stated expiration terms should take into account the applicable preference period as well.

Tender Process

Standard & Poor's applies a similar analysis to the payment of purchase price as it does in assessing the likelihood of full and timely payment of regularly scheduled principal and interest. If remarketing proceeds are the first source of funds to be used for tenders and LOC funds are the second, the trustee should be instructed to draw on the LOC in an amount equal to the total purchase price due to tendering bondholders, less the amount of the remarketing proceeds on deposit prior to the draw time deadline established in the LOC. It is important that the trustee only consider proceeds actually on deposit, as opposed to proceeds that are expected to be received. If the trustee were to draw on the LOC on the basis of expected proceeds and any expected remarketings were to fail, a shortfall in total funds available to pay tendering bondholders would jeopardize the timeliness of payment. In most instances, it would be too late to make a second draw on the LOC to make up the shortfall and still make timely payment of purchase price. Alternatively, there can be reliance on expected proceeds if the remarketing agent provides an unconditional commitment to deliver remarketing proceeds by the time necessary to pay tendering bondholders regardless of whether or not expected remarketings are successful.

Since the tender process often involves several different parties (trustee, tender agent, remarketing agent), proper coordination of the flow of information and funds among the various participants is necessary to ensure full and timely payment of purchase price to bondholders. As a result, the analysis

involves an examination of details such as who receives the tender notices and who pays the purchase price to tendering bondholders.

In some transactions, payment of purchase price to bondholders is made by the tender agent rather than the trustee. If the LOC is written to the trustee and the trustee is instructed by the indenture to make draws on the LOC, the trustee must be instructed do one of the following: (1) transfer the money received from an LOC draw to the tender agent, while allotting adequate time for the tender agent to pay bondholders prior to the close of business on the purchase date; or (2) direct the LOC bank to pay all proceeds of a tender draw directly to the tender agent.

Another acceptable option is to have the LOC bank authorize and the indenture instruct the tender agent to make all tender draws directly, without involving the trustee. Remarketing proceeds must also be transferred from the remarketing agent to the party paying purchase price in adequate time for payment to be made to bondholders prior to the close of business on the tender date. In the case of mandatory tenders, undelivered bonds must be deemed tendered.

Purchase price reinstatement

Any time all or a portion of tender price is paid from proceeds of a drawing on the LOC and the LOC coverage amount reduces upon honoring of the draw, the concept of purchase price reinstatement is an important factor. Bonds that are purchased with LOC money must not be released to the new purchasers until the agent holding these bonds has received written confirmation from the LOC bank that the LOC has been reinstated to its full amount of coverage for the bonds in question; otherwise, bondholders could be exposed to credit cliff risk by holding bonds that are not supported by the LOC.

Remarketing discount

Most put bonds only allow the bonds to be remarketed at par. On some transactions, the remarketing can be at a discounted price. To ensure full payment to tendering bondholders, the discount must be limited to the amount of LOC coverage specifically for remarketing discounts.

Expiration of the put option

The short-term component of a dual rating on a put bond reflects the likelihood of full and timely payment of purchase price upon a mandatory or optional tender. As with principal and interest, the likelihood of payment is equal to the likelihood of the bank's honoring a draw for purchase price. The bondholder is insulated from the performance of the issuer or the underlying obligor. Events of default due to bankruptcy or technical default by the issuer or underlying obligor should not lead to the immediate expiration of the put option, which would be inconsistent with the short-term rating of the transaction.

Optional Redemptions

Certain transactions are structured so that payment of premium or principal associated with an optional redemption is not covered by the LOC. For such an event, the trustee shall not send out a notice of redemption to the bondholders unless there are sufficient preference-proof funds on deposit prior to the giving of notice, or such notice will be conditional and contain language to the effect that the redemption will be rescinded in the event there are not sufficient preference-proof funds on hand prior to the scheduled redemption date.

Investments

Funds held by the trustee, for which an investment loss could lead to a lack of full and timely payment, must be restricted in their investment. This is most common when the LOC is scheduled to fund earlier than the payment date or when preference-proof funds are being held as a payment source. Permitted investments may only be investments rated by Standard & Poor's at least equal to the then-current rating on the bonds. The investment must mature within 30 days or as needed for full and timely payment on the bonds.

Defeasance

In a true legal defeasance, the bonds are deemed paid, the trust estate is released, the trust indenture is discharged, and, generally, the LOC is released. The trust indenture and LOC are replaced by an escrow of funds, which provide for the payment of any debt service. Criteria for defeasance are designed to address both the credit quality of the escrow account and the legal structure of the escrow. Except for municipalities eligible to file for bankruptcy under Chapter 9 of the Bankruptcy Code, defeasance should be accomplished with sufficient preference-proof (as defined in the following sentence) funds to pay for principal and interest until the bonds' maturity, or earlier redemption. As in any other payment structure, preference-proof funds include:

- Funds provided under an LOC;
- Money accompanied by a preference opinion of counsel experienced in bankruptcy matters; or
- Funds "aged" for the proper preference period, depending on the details of the transaction.

The preference-proof funds may be held in the form of either cash or direct obligations of the U.S. If U.S. government obligations are used, they should not be redeemable at the option of the

issuer, and they should mature at such times and in such amounts as will be sufficient to cover the full and timely payment of all principal, premium (if any), and interest on the bonds.

Certain additional criteria apply to effect a legal defeasance in the variable-rate mode. Standard & Poor's short-term rating addresses the likelihood of full and timely payment of purchase price. If, as in legal defeasance, the indenture were to be discharged, the put feature would no longer be available to the bondholders—a risk inconsistent with the rating on the transaction. To maintain the integrity of the rating and ensure full and timely payment of debt service, as well as purchase price, Standard & Poor's looks for the following:

- That defeasance be eliminated in all variable-rate modes; or
- That the defeasance period in variable-rate modes be limited by requiring a mandatory redemption or purchase in whole to be scheduled no later than the first possible purchase date (whether mandatory or optional) or interest adjustment date; or
- That the trustee receive written evidence from Standard & Poor's that the defeasance would not result in the reduction or withdrawal of the then-current ratings.

To ensure that sufficient money will be provided in the variable-rate mode for future payments to bondholders, defeasance deposits must be made at the maximum rate allowable on the bonds due to the interest reset feature of the bonds. The escrow agreement should address not only the interest reset feature, but also the potential of bondholders' tendering their bonds during the defeasance period and the resulting liquidity issues that arise. To account for possible tenders, escrow funds must either be held in cash or in an investment that matures or would be redeemable at par no later than the first possible purchase date (whether mandatory or optional) or interest adjustment date.

The residual interest or the difference between the maximum floating rate provided for by the escrow fund and the actual variable rate of interest may also raise concerns during the defeasance period. If this excess flows back to the underlying obligor and the obligor were to file for bankruptcy during the defeasance period, a bankruptcy court might apply the automatic stay provisions and delay future payments out of the escrow fund. To address this scenario, Standard & Poor's will look for either that the residual interest flow back to the credit provider or a legal opinion stating that the bankruptcy of the obligor would not, by the application of the automatic stay provisions of Section 362(a) of the U.S. Bankruptcy Code, delay the use of money in the escrow fund to pay principal and interest on the bonds. Alternatively, if the underlying obligor carries an investment-grade rating, Standard & Poor's may be able to conclude that the likelihood of the obligor going bankrupt during the defeasance period is consistent with the rating on the bonds, and the legal opinion would not be needed.

The trustee and any other participant integral to the tender process (sending or receiving notices, transferring money, or paying bondholders) must remain in their position during a defeasance where bondholders have retained their right to tender the bonds.

Trustee's Role

In LOC-backed transactions, the trustee is obligated to fulfill its fiduciary responsibilities. Standard & Poor's relies on the trustee to follow the terms of the bond documents and to draw upon the LOC in accordance with its terms. In standby LOC transactions, the trustee should remain in place beyond the payment in full of the bonds (including maturity) until the applicable preference period has expired.

Indemnity

The trustee may not require indemnity for draws upon the LOC or for accelerations. If the trustee is allowed to require an indemnity prior to accelerating the maturity of the bonds, bondholders might be exposed to credit-cliff risk. An acceleration of a transaction's maturity often occurs in response to an event of default resulting from nonreinstatement of LOC interest coverage. If the trustee in this instance were allowed to wait for satisfactory indemnity before taking action required by the indenture, the bonds would remain outstanding without corresponding credit support for interest coverage.

Resignation or removal of the trustee

No resignation or removal of the trustee should be effective until the appointment of a successor trustee. Full and timely payment is compromised any time a vacancy exists in the position of trustee. Terms of the transaction must provide for the appointment of a successor trustee prior to the resignation or removal of the trustee then in effect. Either the LOC must be transferable or a new LOC must be issued to the successor trustee.

In many deals, draws on the LOC are made, and purchase price for optional and mandatory tenders is paid by the tender agent or some other party, rather than by the trustee. In these transactions, the same concern with respect to a vacancy in that position would exist, and as a result, the provisions used for the resignation/removal of the trustee would also apply to the resignation/removal of the party in question.

LOC Substitution

In the event of an LOC substitution, Standard & Poor's must again review the transaction in order to maintain the rating. The review looks to conclude that the terms of the substitute LOC, along with the terms of the bonds, support the transaction, as did the then-current LOC.

For U.S. transactions, Standard & Poor's will also inquire if any new or additional collateral is being granted to the new LOC bank. In two cases, courts held that under certain circumstances a payment under an LOC may be recaptured as a preference by a bankrupt account party (the debtor). The two rulings concerned are In re Compton Corp., No. 87-1135 Slip Op (5th Cir. Nov. 12, 1987) and In re Air Conditioning Inc. of Stuart, 72 BR 657 (S.D. Fla. 1987). In both cases:

- The LOC was issued to secure a preexisting obligation of the debtor;
- The debtor collateralized its obligation to reimburse the bank for payments under the LOC;
- The debtor became subject to a bankruptcy proceeding within 90 days after its obligation to reimburse the bank for payments under the LOC; and
- After the bankruptcy, the bank was permitted to pay a draw under the LOC.

The courts held that:

- The pledge of collateral was a transfer by the debtor of its property on account of an antecedent indebtedness;
- The pledge occurred within 90 days prior to the debtor's bankruptcy; and
- Although the pledge was made directly to the bank, it induced the bank to issue the LOC. Therefore, the pledge was for the benefit of the LOC's beneficiary.

As a result, the courts ruled that elements of a preference existed and, therefore, the debtor could recapture the LOC payment from the beneficiary to the extent of the pledged collateral.

These two cases affected Standard & Poor's criteria regarding the substitution of an LOC during the life of a transaction and the provision of an LOC subsequent to the issuance of the debt. If a substitute LOC is provided or an LOC is brought in subsequent to the closing of the transaction, Standard & Poor's will rate the issue if there is any new collateral offered to the bank issuing the new LOC, only if Standard & Poor's has received a preference opinion of counsel that specifically addresses the Air Conditioning and Compton cases. Standard & Poor's concerns can be addressed by providing a written statement that no new collateral is being offered to the bank issuing the new LOC.

Confirmation LOC Rating Criteria

A confirmation transaction is structured to provide full credit enhancement of debt service with an LOC from a lower-rated or unrated financial institution (the facing LOC) and a confirmation in the form of a second LOC from a higher-rated institution. This second LOC (the confirmation LOC) also provides full credit enhancement of debt service following the wrongful dishonor, default, or insolvency of the fronting bank.

In its analysis, Standard & Poor's seeks to ensure that the likelihood of payment is equal to the likelihood of the confirming bank's honoring draws on its confirmation LOC. Bondholders must be insulated from any bankruptcy, default, or lack of performance not only by the underlying obligor, but also by the facing LOC bank. Standard & Poor's, therefore, seeks to ensure that sufficient funds will be available from the confirmation LOC to make full and timely payment of all amounts due to bondholders if the fronting bank wrongfully dishonors a draw request or if, upon the insolvency of the fronting bank, its facing LOC has been repudiated by a conservator or receiver. As a result, the rating that Standard & Poor's assigns to a confirmation transaction is at least the confirming bank's issuer credit rating. If applicable, the transaction could be rated in accordance with the joint support criteria.

LOC repudiation

The concern of LOC repudiation developed as a legislative effect of FIRREA, the 1989 U.S. savings and loan bailout legislation. FIRREA includes provisions describing the FDIC's rights and responsibilities when acting as conservator or receiver of an insolvent institution. Under the provisions of FIRREA, if an LOC issuer becomes insolvent, the FDIC, as receiver of the insolvent institution, is able to repudiate the LOC if it is perceived to be a burdensome contract. Since an LOC can be repudiated before it is drawn on, the confirmation LOC must be available and be drawn on if the facing LOC is repudiated.

Confirmation credit cliff issues

The same credit cliff concerns regarding expiration, substitution, nonreinstatement, conversion, and purchase price reinstatement also exist and will be analyzed in the context of the confirming LOC structure.

Confirmation LOC expiration

A confirmation LOC can expire without prior redemption or tender of the bonds if there is prior written evidence from Standard & Poor's of rating maintenance. This could occur if rating changes equalize the ratings of the fronting bank and the confirmation bank. At that point, the confirmation

LOC could be terminated without any change to the rating of the bonds.

Single-draw confirmation

Some confirmation LOCs have no terms for reinstatement. They are available only for a single draw. Upon any wrongful dishonor or repudiation of the facing LOC, the trustee must be instructed to draw for the full stated amount of the confirmation LOC and redeem or accelerate the bonds.

Sources of payment

In a LOC-backed transaction, the trustee is instructed to make payment of principal, interest, premium, and purchase price in accordance with the prioritized list of sources of payment. In addition to the facing LOC as a source of payment, the trustee must also be specifically instructed to use the confirmation LOC as a source of payment.

Timeliness of LOC draws

It is important to synchronize the trustee's draw instructions under the bond indenture with the payment terms of the facing LOC and the confirmation LOC to ensure that each credit facility is drawn on to provide full and timely payment. In the case of bonds supported by both a facing and a confirmation LOC, the trustee's draw instructions must leave sufficient time to draw on the confirmation LOC in order to provide full and timely payment upon the wrongful dishonor or repudiation of the facing LOC.

Draw procedures

Terms of a confirmation LOC include the procedures for the trustee to properly conduct a draw. The terms must allow draws under any circumstance of facing LOC repudiation or wrongful dishonor. In addition, the confirmation LOC should not require the trustee to represent the drafts of the dishonored draw on the facing bank as a condition of honoring a draw on the confirmation LOC. This enables the trustee to draw on the confirmation LOC following bank insolvency even if either the facing LOC is repudiated before it is drawn on, or the dishonored drafts are not properly returned to the trustee.

Preference concerns

A key question about confirmation LOC structures is whether or not, subsequent to a fronting bank insolvency, the FDIC as receiver could recover payments made to bondholders by the trustee that were derived from a draw on the facing LOC. This concern is based on the theory that the payments either were not made in the ordinary course of business of the bank, were made in the preference of one creditor over another, or were made to prevent the application of the bank's assets in the manner prescribed by the National Banking Act.

In a January 1991 statement, the FDIC addressed this concern by stating that, in its view, a court would hold that the FDIC, as receiver or conservator, could not recover payments made to bondholders from the trustees draw under the facing LOC. Based upon this statement, Standard & Poor's does not have additional preference concerns for U.S. confirmation LOC structures beyond those evident within other fully credit-enhanced structures.

If the fronting bank is a non-U.S. bank, Standard & Poor's will research the possibility of whether payments from the fronting LOC bank could be disgorged under the bankruptcy law of that country. If there is such a possibility, a solution could be that upon the fronting bank's insolvency, the trustee will no longer draw on that LOC, but rather, will directly draw upon the confirmation LOC to avoid this preference concern.

LOC-Backed Commercial Paper

Standard & Poor's also rates municipal commercial paper (CP) programs secured by LOCs. With a direct-pay LOC, a depositary draws for the entire principal of and accrued interest on the CP notes at maturity. The proceeds from the sale of new CP notes are used to reimburse the bank for the draw on the LOC.

In a CP program, the depositary usually acts as issuing and paying agent. The depositary issues, authenticates, and delivers new CP notes on the issuer's instructions. It also pays the notes at maturity and ceases CP note issuance at the issuer's and LOC bank's requests. To ensure adequate LOC coverage, the depositary determines that the amount of any new CP plus the amount of outstanding CP does not exceed the LOC commitment. Typically, the CP notes mature within 270 days and, in any event, no later than the 15th day prior to LOC expiration. The bank is obligated to honor draws to pay principal and interest on all CP notes until they mature, despite any early termination of its agreement with the issuer.

The depositary's authority to issue CP can be revoked temporarily or permanently by the issuer or the bank. In such a case, the depositor may not issue any new CP, and the LOC must continue to support all outstanding CP. If the bank gives a cease issuance order, only the bank can rescind such instruction.

In the event that the LOC provides for an early termination of the bank's commitment, based on an event of default under the reimbursement agreement, the bank immediately notifies the depositary of the default and instructs the depositary to cease

issuing CP notes. In addition, the depositary is instructed to:

- Draw on the LOC for the entire amount of outstanding CP notes and hold draw proceeds until such notes mature; or
- If the LOC will remain in effect by its terms until the last outstanding CP note matures, continue to draw on the LOC as CP notes mature until the entire program is retired.

In the event that the former occurs, the depositary must hold proceeds uninvested or invest the proceeds in qualified investments maturing when needed that are rated equal to or higher than the rating assigned to the transaction. ■

Municipal Applications For Joint Support Criteria

Standard & Poor's Ratings Services uses its criteria for rating jointly supported obligations when more than one entity is fully responsible for the entire obligation. In this situation, a default on the obligation would occur only if each entity defaults. Common examples of joint support include a primary obligor plus a guarantor or a primary obligor and a letter-of-credit (LOC) provider. The risk that both entities will default is less than the risk that either one will. As a result, the obligation may be rated higher than the rating on the stronger obligor (supporter).

Table 1 **Correspondence Between Ratings And Probabilities Of Default**

Rating	Probability of Default (%)
AAA	0.362
AA+	0.536
AA	0.872
AA-	1.13
A+	1.458
A	1.782
A-	2.479
BBB+	3.842
BBB	5.876
BBB-	10.637
BB+	13.179
BB	18.258
BB-	24.197
B+	30.565
B	38.145
B-	48.559
CCC+	65.517
CCC	75.853
CCC-	88.268

Summary

The criteria contain the following key elements:

- The rating for the jointly supported obligation will be derived from one of three reference tables, one each for obligor pairs that have high, medium, and low default correlation *(see tables 3, 4, and 5)*. The tables were generated with a sophisticated calculation of the joint default probability, including explicit default correlation assumptions.
- Obligations of very highly correlated entities remain ineligible for credit enhancement.
- Application of the criteria is extended to speculative-grade entities. Previously, the criteria were applicable only to investment-grade obligors.
- The joint-support criteria will not be used to rate issues or issuers that receive less-formal support, such as the benefits enjoyed by many government-owned enterprises. In other words, these issues will continue to be rated no higher than the rating on the government or parent company providing support.

Joint Probability Of Default Calculation

$$JointPD = (PA*PB)*[DC\sqrt{PA*(1\ \ PA)}\sqrt{PB*(1\ \ PB)}]$$

A constraint is added so that the joint PD is capped at the stronger obligor's PD (the rating will never be lower than that on the stronger obligor).

Where: PA = the default probability of one obligor
PB = the default probability of the other obligor
DC = the default correlation of the two obligors

Joint Probability Of Default Calculation

The joint probability of default (PD) is calculated as follows:

For the rating on each obligor, the corresponding 10-year cumulative PD (displayed in Table 1) is used. After the joint PD is calculated, the number is converted back into the closest corresponding rating for the 10-year time horizon. The underlying PDs associated with each rating are consistent with those used by Standard & Poor's for rating CDOs. The following example is illustrative. If a French bank rated 'A+' (PD of 1.458%) guarantees an obligation of an American manufacturing company rated 'BB+' (PD of 13.179%), and the assumed default correlation is 15%, the jointly supported rating would be 'AA' (joint PD of 0.800%).

Table 2 **Default Correlation Guidelines**

Correlation Guidelines	Default Correlation (%)	Characteristics
Too high	No benefit	(1) Affiliated companies, (2) government and its owned/supported entities, (3) economically codependent entities, (4) both obligors in the same country, and its sovereign government is rated speculative grade.*
High	25	Both obligors share two of the following: same industry, same region, speculative grade.*
Medium	20	Both obligors share one of the following: same industry, same region, speculative grade.*
Low	15	Obligors are in different industries and regions, and at least one is investment grade.*

*When rating a jointly supported foreign currency issue, the foreign currency ratings on the obligors and sovereign are relevant, but the result is constrained by the transfer and convertibility limit.

Table 3 **High Correlation Reference Table**

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+
AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
AA-	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A+	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA	AA-
A	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA	AA	AA-
A-	AAA	AAA	AAA	AAA	AA+	AA+	AA+	AA	AA-	A+
BBB+	AAA	AAA	AA+	AA+	AA+	AA	AA	AA-	A+	A
BBB	AAA	AA+	AA+	AA+	AA	AA	AA-	A+	A	A-
BBB-	AAA	AA+	AA	AA	AA-	AA-	A+	A	A-	BBB+
BB+	AAA	AA+	AA	AA-	AA-	AA+	A	A-	A-	BBB+
BB	AAA	AA+	AA	AA-	AA+	AA+	A	A-	BBB+	BBB
BB-	AAA	AA+	AA	AA-	AA+	A	A-	A-	BBB+	BBB
B+	AAA	AA+	AA	AA-	AA+	A	A-	A-	BBB+	BBB
B	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB
B-	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB-
CCC+	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB-
CCC	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB-
CCC-	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB-
D	AAA	AA+	AA	AA-	AA+	A	A-	BBB+	BBB	BBB-

Default correlations of 25%, 20%, or 15% are explicitly assumed based on the obligors' characteristics, as shown in Table 2.

Three different reference tables *(tables 3, 4, and 5)* for different degrees of correlation are employed. To facilitate implementation, relatively simple guidelines are used to determine which table is appropriate. The main factors are whether the obligors are in the same industry, in the same region, or speculative grade. The relevance of these intuitive criteria is supported by Standard & Poor's default correlation research. Most eligible jointly supported issues are expected to fall in the medium or low correlation categories.

In the U.S., a region will generally be defined as a state. Outside the U.S., a region will generally be defined as a country. However, we will also make case-specific analytical conclusions about correlation when appropriate. To date, joint-support criteria have typically been applied to transactions involving a bank and either a U.S. corporate or a U.S. public finance entity. When assessing geographic correlation, a large bank, with a globally diverse business profile, will not be treated as in any particular U.S. state. In other words, a major bank with its home office in New York would not be considered in the same region as a New York State municipality. Conversely, smaller banks with significant geographic concentrations in one to three states may be considered to be in the same region as entities from any of those states.

Entities To Which The Criteria Are Applicable

The main application of the joint-support criteria to date has been for LOC-backed issues. Banks providing the LOCs range from local U.S. commercial banks to large multinational institutions based in a number of countries. Virtually all transactions to which the criteria are applied include at least one financial institution obligor.

Under the criteria, Standard & Poor's excludes very highly correlated entities—such as affiliated companies—from any joint-support benefit. Obligations insured by the monoline bond insurers will remain ineligible for joint-support credit enhancement (above the rating on the insurer), reflecting the significant correlation between the insurer and its portfolio of insured obligations. The joint-support approach remains inappropriate for U.S. public finance double-barreled bonds, which are backed by economically codependent payment

Table 3 **High Correlation Reference Table** (continued)

	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+
AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-
A+	AA-	A+	A+	A+	A+	A+	A+	A+	A+	A+
A	A+	A+	A	A	A	A	A	A	A	A
A-	A	A	A-	A-	A-	A-	A-	A-	A-	A-
BBB+	A-	A-	A-	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
BBB	A-	BBB+	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB	BBB
BBB-	BBB+	BBB	BBB	BBB	BBB	BBB-	BBB-	BBB-	BBB-	BBB-
BB+	BBB+	BBB	BBB	BBB	BBB-	BBB-	BBB-	BB+	BB+	BB+
BB	BBB	BBB	BBB-	BBB-	BBB-	BB+	BB	BB	BB	BB
BB-	BBB	BBB-	BBB-	BB+	BB+	BB	BB	BB-	BB-	BB-
B+	BBB	BBB-	BB+	BB+	BB	BB	BB-	B+	B+	B+
B	BBB-	BBB-	BB+	BB	BB	BB-	B+	B+	B	B
B-	BBB-	BB+	BB	BB	BB-	B+	B	B	B-	B-
CCC+	BB+	BB	BB	BB-	B+	B	B-	B-	CCC+	CCC+
CCC	BB+	BB	BB-	B+	B+	B	B-	CCC+	CCC+	CCC-
CCC-	BB+	BB	BB-	B+	C	B-	CCC+	CCC+	CCC	CCC-
D	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D

sources (e.g., a general obligation pledge and revenue from water and sewer charges).

Short-term and dual ratings

Jointly supported short-term obligations are eligible for credit enhancement. This is accomplished by converting the indicated long-term rating into the corresponding short-term rating. A substantial number of LOC-backed issues have a short-term put or demand feature. Every seven days, the interest rate is reset and investors may demand repayment. Standard & Poor's assigns a dual rating (e.g., 'AA/A-1+') to these instruments.

U.S. public finance obligors

Technically, both the LOC provider and the primary obligor are obligated to meet both the scheduled long-term payments and the put option. However, Standard & Poor's has concluded that U.S. public finance obligors, even those with high investment-grade ratings, do not have the capacity to meet the sudden put. Accordingly, we recognize joint support for the long-term component but not for the short-term rating. The short-term rating on the LOC provider is assigned to the short-term portion of the obligation.

Third obligor

When there are three obligors, each fully responsible for the obligation (such as a primary obligor, an LOC provider, and a confirming LOC provider), the joint-support criteria will be applied to the best two out of three. We will use the joint-support criteria reference table (high, medium, or low correlation) for the two obligors that produce the highest rating, which will often be the two most highly rated obligors. Here is an example: The primary obligor is a health care entity rated 'BBB-', an LOC is provided by a bank rated 'BBB+', and a confirming LOC is provided by a bank rated 'AA-'. The primary obligor and LOC provider are both in the U.S. state of Georgia; the confirming LOC provider is in Germany. We would use the medium correlation table for the two banks (same industry, different regions, and both investment grade), resulting in a rating of 'AA+'. If the health care obligor is upgraded a notch to 'BBB', a 'AAA' rating could be achieved by combining the primary obligor with the confirming LOC provider in the low correlation reference table (different region and industry).

Table 4 **Medium Correlation Reference Table**

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+
AA-	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA	AA-
A-	AAA	AAA	AAA	AA+	AA+	AA+	AA+	AA	AA-	A+
BBB+	AAA	AAA	AA+	AA+	AA+	AA	AA	AA-	A+	A
BBB	AAA	AA+	AA+	AA	AA	AA-	AA-	A+	A	A-
BBB-	AAA	AA+	AA	AA	AA-	AA-	A+	A	A-	BBB+
BB+	AAA	AA+	AA	AA-	AA-	A+	A	A-	A-	BBB+
BB	AAA	AA+	AA	AA-	A+	A+	A	A-	BBB+	BBB
BB-	AAA	AA+	AA	AA-	A+	A	A	A-	BBB+	BBB
B+	AAA	AA+	AA	AA-	A+	A	A-	A-	BBB+	BBB
B	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB
B-	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB
CCC+	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
CCC	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
CCC-	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
D	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-

Table 4 **Medium Correlation Reference Table** (continued)

	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+
AA	AA	AA	AA	AA	AA	AA	AA	AA	AA	AA
AA-	AA	AA-	AA-	AA-	AA-	AA-	AA-	AA-	AA-	D
A+	AA-	AA-	A+	A+	A+	A+	A+	A+	A+	A+
A	AA-	A+	A+	A	A	A	A	A	A	A
A-	A+	A	A	A-	A-	A-	A-	A-	A-	A-
BBB+	A	A-	A-	A-	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
BBB	A-	A-	BBB+	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB
BBB-	BBB+	BBB+	BBB	BBB	BBB	BBB	BBB-	BBB-	BBB-	BBB-
BB+	BBB+	BBB	BBB	BBB	BBB-	BBB-	BBB-	BB+	BB+	BB+
BB	BBB	BBB	BBB	BBB	BBB-	BB+	BB+	BB	BB	BB
BB-	BBB	BBB	BBB-	BBB	BB+	BB	BB	BB-	BB-	BB-
B+	BBB	BBB-	BBB-	BB+	BB	BB	BB-	BB-	B+	B+
B	BBB-	BBB-	BB+	BB	BB	BB-	B+	B+	B	B
B-	BBB-	BB+	BB	BB	BB-	B+	B	B	B-	B-
CCC+	BBB-	BB+	BB	BB-	B+	B	B-	B-	CCC+	CCC+
CCC	BB+	BB	BB-	BB-	B+	B	B-	CCC+	CCC+	CCC
CCC-	BB+	BB	BB-	B+	B	B-	CCC+	CCC+	CCC	CCC-
D	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D

Table 5 **Low Correlation Reference Table**

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
AA-	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
A+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA
A	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A-	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
BBB+	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA+	AA	A+
BBB	AAA	AAA	AAA	AA+	AA+	AA+	AA	AA-	AA-	A
BBB-	AAA	AAA	AA+	AA+	AA	AA	AA	A+	A	A-
BB+	AAA	AAA	AA+	AA+	AA	AA	AA-	A+	A	A-
BB	AAA	AA+	AA+	AA	AA	AA-	A+	A	A-	BBB+
BB-	AAA	AA+	AA	AA	AA-	AA-	A+	A-	A-	BBB+
B+	AAA	AA+	AA	AA-	AA-	A+	A	A-	BBB+	BBB
B	AAA	AA+	AA	AA-	A+	A	A	A-	BBB+	BBB
B-	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB+	BBB
CCC+	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
CCC	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
CCC-	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
D	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-

Table 5 **Low Correlation Reference Table** (continued)

	BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AAA	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+	AA+
AA	AAA	AA+	AA	AA	AA	AA	AA	AA	AA	AA
AA-	AAA	AA	AA	AA-	AA-	AA-	AA-	AA-	AA-	AA-
A+	AAA	AA	AA-	AA-	A+	A+	A+	A+	A+	A+
A	AAA	AA-	AA-	A+	A	A	A	A	A	A
A-	AAA	A+	A+	A	A	A-	A-	A-	A-	A-
BBB+	AAA	A	A-	A-	A-	BBB+	BBB+	BBB+	BBB+	BBB+
BBB	AAA	A-	A-	BBB+	BBB+	BBB+	BBB	BBB	BBB	BBB
BBB-	AAA	BBB+	BBB+	BBB	BBB	BBB	BBB-	BBB-	BBB-	BBB-
BB+	AAA	BBB+	BBB	BBB	BBB	BBB-	BBB-	BB+	BB+	BB+
BB	AAA	BBB	BBB	BBB	BBB-	BBB-	BB+	BB	BB	BB
BB-	AAA	BBB	BBB-	BBB-	BB+	BB+	BB	BB	BB-	BB-
B+	AAA	BBB	BBB-	BB+	BB+	BB	BB-	BB-	B+	B+
B	AAA	BBB-	BB+	BB+	BB	BB-	B+	B+	B	B
B-	AAA	BBB-	BB+	BB	BB-	BB-	B	B	B-	B-
CCC+	AAA	BB+	BB	BB-	B+	B	B-	B-	CCC+	CCC+
CCC	AAA	BB	BB	BB-	B+	B	B-	CCC+	CCC+	CCC
CCC-	AAA	BB	BB-	B+	B	B-	CCC+	CCC+	CCC	CCC-
D	AAA	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	D

Legal And Structural Considerations

The joint-support criteria are only applicable when the obligation is legal, valid, and enforceable against both (or all three) obligors. Any preference payment or clawback risk must be addressed in the structure of the transaction.

Analysts will exercise judgment to determine whether the joint-support criteria should be applied if the obligation is unusual or unpredictable. Note the eligibility of investment agreements to be jointly supported by more than one provider (see "Public Finance Criteria: Joint Support To Investment Agreements").

Implementation

To ensure transparency of Standard & Poor's public ratings, the joint-support approach will only be applied when both obligors have a public long-term and, if relevant, short-term rating unless the joint-support criteria affect only one element of a complex transaction. In addition, where one of the supporters is a U.S. public finance obligor, the bond issue will also receive a Standard & Poor's Underlying Rating (SPUR) reflecting the unenhanced long-term rating of the issue.

If the rating on a supporting obligor is placed on CreditWatch, Standard & Poor's will either place the rating on the jointly supported issue on CreditWatch or state publicly that the latter rating will be unaffected by the obligor's rating review. ■

Forward Purchase Contracts And 'AAA' Defeased Bonds

Standard & Poor's Ratings Services reviews forward purchase contracts (FPCs) in conjunction with newly refunded bonds and outstanding 'AAA' rated refunded bonds. The FPC analysis involves a review of legal structure and the sufficiency and credit quality of the assets placed in escrow. As with traditional refunded bonds, in order to provide a rating on an escrow that is accompanied by a FPC, Standard & Poor's relies on counsel, escrow agents, accountants, and other experts and advisors for accuracy and completeness of the information provided.

FPCs involve the sale by the issuer of its residual earnings from an escrow to a third party, the FPC provider, who receives an economic benefit based on the nature of the residual interest purchased. The issuer receives a purchase price from the FPC provider that generally is equal to the present value of the future reinvestment income. The residual rights sold to the FPC provider (the seller) may include:

- The issuer's right to receive excess reinvestment income, if any, after the payment of debt service on the bonds;
- The issuer's right to direct the reinvestment of maturing proceeds of the initial escrowed securities; and
- The issuer's right to substitute the reinvested securities held by the escrow agent in the escrow fund.

Many outstanding escrow agreements are silent with respect to an issuer entering into an FPC subsequent to the escrow's closing date and frequently, FPCs are executed afterwards. Because FPCs are not considered eligible investments for rated escrows, Standard & Poor's believes that the escrow agreement should be amended to provide for the subsequent execution of the FPC. We would also expect counsel to consider whether bondholder approval should be obtained before the escrow agent enters into a FPC.

FPC Rating Criteria

To obtain a 'AAA' rating on an escrow that has a FPC, Standard & Poor's first looks for compliance with our defeasance criteria (see "Public Finance Criteria: Defeasance"). Additionally, since the FPC provider is purchasing the residual interest in the escrow account, Standard & Poor's determines whether such interest would cause the escrowed funds to be affected by a potential insolvency of the FPC provider.

FPC analysis

Standard & Poor's examines whether the FPC or the escrow agreement include the following provisions:

- The decision to purchase the newly delivered securities from the FPC provider should be at the escrow agent's option and, in general, at the direction of the issuer.
- The FPC provider should have no right to substitute any of the initial escrow securities prior to their maturity. After the maturity of the initial securities, to the extent that the FPC provider delivers to the escrow agent new securities pursuant to the FPC, the FPC provider may retain the right to deliver substitute securities with longer maturities providing those newly delivered securities mature on or before the next bond payment date. Because the initial escrow securities matured in accordance with the terms of the escrow (and the original verification report), the delivery of the new securities does not require a new verification report as the original escrow structure presumed no investment earnings after the initial escrowed securities matured.
- The FPC or the escrow agreement should provide for independent accounting firm verification of the sufficiency of the escrow funds prior to any withdrawal of monies from the escrow. This should not be confused with substituting securities provided pursuant to the FPC, which does not require a new verification report. The documents should make provisions for, or reserve for, the cost of these additional verification reports, if applicable.
- The escrow agent should not be permitted to accept any newly delivered securities from another FPC provider unless the FPC has been transferred to that provider and evaluated by Standard & Poor's as evidenced by written confirmation of the rating of the escrow.
- The FPC provider or any subsequent FPC provider, if applicable, has no lien or claim

against the escrow fund and waives any rights it may have to enforce the obligations of the issuer to the FPC provider from any amounts or securities on deposit with the escrow agent. Any damages due to the FPC provider or any transferee may be paid from amounts on deposit in the escrow fund only after all bondholders have been paid in full.

- Amendments to the escrow agreement or the FPC should be subject to Standard & Poor's confirmation that such actions will not adversely affect the then current rating on the bonds.
- If the FPC provider transfers the FPC, confirmation should be requested from Standard & Poor's that such transfer would not adversely affect the then current rating on the bonds.
- The FPC provider may not deliver "partial interests" in securities—securities jointly owned by the seller and the escrow agent. The new securities should be held by the escrow agent under the escrow and mature on or before the date that the escrow agent needs funds to make debt service payments on the bonds. Standard & Poor's does not assume that the market value of the new securities, if liquidated prior to their maturity, will be sufficient to pay debt service.
- The escrow agreement should provide that if the parties enter into a FPC subsequent to the date that Standard & Poor's rated the escrowed bonds, the escrow agent receives written evidence from Standard & Poor's that the FPC will not adversely affect the then current rating on the bonds.

Legal opinions

To ensure that the escrow funds will be available to pay debt service on the defeased obligations, Standard & Poor's requires that in addition to the opinions required in the defeasance criteria, the following opinions be delivered in connection with a FPC:

1. An opinion of counsel to the effect that, if the FPC provider becomes insolvent, the escrow funds (including the newly delivered securities) and payments on the bonds would not be recoverable as a preference by the debtor in possession, trustee, receiver, or other conservator or liquidator of the FPC provider.

2. An opinion of counsel to the effect that, in an insolvency of the FPC provider, the escrow funds (including the newly delivered securities) and any payments made from it would not be subject to the automatic stay or any stay imposed by a conservator, receiver, or liquidator of the seller (and, if applicable, that the agreement satisfies the requirements of Section 13 (e) of the Federal Deposit Insurance Act).

3. An opinion of counsel to the effect that, in the event of the insolvency of the FPC provider, the escrow funds, including the newly delivered securities, and all proceeds thereon would not be considered part of the FPC provider's assets available for liquidation by any trustee, conservator, receiver or liquidator to the FPC provider's creditors.

For example:

- FPC providers that are subject to the Bankruptcy Code: the opinions should address items 1-3 and include references to Sections 362(a), 541, and 547 of the Bankruptcy Code.
- FPC providers that are FDIC insured: the opinion should address items 1-3 as reflected in the provisions of FIRREA and the Federal Deposit Insurance Act (FDIA).
- FPC providers that are not FDIC insured or subject to the Bankruptcy Code: the opinion should address items 1-3 as reflected by the relevant state and foreign, if applicable, regulatory provisions.

4. If the FPC is entered into subsequent to the creation of the escrow:

- Confirmatory opinion stating that the opinions set forth in legal defeasance opinion and the tax opinions rendered at the closing of the escrow agreement are not affected by the execution, delivery, and performance of the FPC; and
- An opinion to the effect that the execution, delivery, and performance of the FPC is legal, valid, binding, and enforceable and does not require the consent of the bondholders. ■

Secondary Market Derivative Products

Standard & Poor's Ratings Services rates secondary-market derivative products, such as tax-exempt synthetic floating rate receipts (synthetic floaters), including the tender option and residual interest tranches, principal and interest strips and auction floater/inverse floater trust receipts—all based on underlying deposits of municipal obligations.

The most frequently rated secondary market derivative products are synthetic floaters created by depositing fixed-rate municipal obligations into a trust structure. Synthetic floaters with a tender option, which are similar to primary market variable rate demand obligations (VRDOs), are typically secured by a liquidity facility that provides coverage for unremarketed tendered receipts. Residual interest receipts are created as part of the same synthetic floater structure, and do not have a tender option.

The interest paid to residual interest holders generally equals the interest collected on the underlying obligation, minus the interest rate payable to the synthetic floater holders with the tender option and fees. In a strip structure, some or all of the interest payments associated with a bond are stripped from the principal payments, and both are resold at a discount from their face value to separate purchasers. An auction floater/inverse floater receipt structure allows two classes of variable-rate receipts to be created from a single deposit of underlying fixed-rate bonds. One class of receipt bears interest on an auction basis, and the other captures the residual interest from the underlying bonds.

All secondary-market derivative securities are examined according to the following three analytical categories:

- Custodial or trust analysis;
- Legal analysis; and
- Structural analysis.

Custodial Or Trust Analysis

The custodial or trust analysis concentrates on the proper transfer of the underlying assets to the custodian or trustee and their issuance as receipts. This analysis is identical for all types of secondary-market derivatives. The custodian or trustee should be clearly instructed to:

- Receive the underlying securities from the depositor free and clear of any lien or encumbrance and ensure that the deposit is irrevocable;
- Establish and maintain a separately designated account for each issue;
- Ensure that the underlying bonds that are deposited into the custody or trust account are not commingled with any of its other assets;
- Ensure that no current or subsequent fees are taken from payments due to holders,
- Transfer payments in a timely fashion to holders.

Legal Analysis

The legal analysis concentrates on bankruptcy and taxability issues and is also identical for all secondary-market derivatives. The following legal opinions are requested and examined:

- True sale opinion, if requested; and
- Tax opinion stating that there is no tax at the trust structure (entity) level for federal, state, and, in some cases, local purposes.

In additional to relevant opinions, the structure must also meet additional legal criteria regarding the structure. (See "Legal Criteria For U.S. Structured Finance Transactions").

Structural Analysis

The structural analysis is tailored to each specific derivative product and concentrates on the following structural features:

- The flow of funds from the underlying bonds to the receipt holders;
- The various payment events associated with the structure;
- Designated sources of payment for each payment event; and
- Compatibility of the trust and liquidity facility termination events with the rating to be assigned to the receipts.

Tender Option Synthetic/ Residual Interest Synthetic Floaters

Synthetic floaters are variable-rate trust receipts evidencing direct ownership interests in a deposit of underlying obligations. Such obligations generally have a fixed interest rate but can also bear interest at a variable rate. Obligations deposited into a synthetic trust can come from various municipal sectors and come in a variety of forms, such as bonds, notes and leases, among others. After the deposit of the obligation into the trust structure, two classes

of receipts are created—a synthetic floater receipt with a tender option and a residual interest receipt.

The synthetic floaters with a tender option are supported by a liquidity facility to cover the purchase price of unremarketed tendered receipts. Synthetic floaters with a tender option are assigned a dual rating consisting of long-term and short-term components, such as 'AAA/A-1+'. The long-term rating is based on the rating of the underlying obligation and addresses the underlying obligation's ability to pay full and timely principal and interest. The short-term rating is based on the short-term rating of the liquidity facility provider and addresses the likelihood of payment of the purchase price of tendered receipts.

Residual interest synthetic floaters can be assigned a long-term rating only that reflects the rating of the underlying bond. Residual interest floater holders may experience high variability in expected returns as a result of non-credit risks.

Synthetic floaters' ratings only address the likelihood of the floater holder receiving par plus any accrued interest based on regularly scheduled principal and interest payments from the underlying obligation which, in some instances, may be enhanced by a municipal bond insurance policy, or receive joint support based on the application of joint support criteria. Synthetic floaters' ratings, as is the case with all of Standard & Poor's municipal ratings, do not address the likelihood that the interest payable on the receipts or the underlying bonds may be deemed or declared includable in the gross income of synthetic floater holders by the relevant authorities at any time. The ratings also do not address the likelihood of any payments to synthetic floater holders in excess of principal and interest, such as premium on redemption payments from the underlying obligations or gain share payments.

Structural analysis

Synthetic floaters may be structured with a number of different interest-rate modes similar to those found in VRDOs, such as weekly or monthly. Synthetic floaters with tender options are subject to optional tender upon requisite notice. In addition, the receipts are subject to mandatory tender when certain events occur, which include, but are not limited to, a change in the interest-rate mode, expiration or termination of the liquidity facility. Standard & Poor's applies its bank liquidity facility criteria when reviewing liquidity documents (See Public Finance Criteria: "Bank Liquidity Facilities").

The trustee collects the semi-annual fixed interest payments from the underlying obligations and pays certain fees related to the trust. The trustee then pays the tender option synthetic floater holder the variable interest rate and distributes any remaining interest after payment of additional fees, if any, to the residual synthetic floater holder.

Standard & Poor's will apply its LOC criteria when requested to rate synthetic floater structures that have an LOC wrap on the underlying obligation. If requested, Standard & Poor's will review a structure to determine whether joint support criteria can be applied. The joint support criteria can be applied to both the long-term rating, as well as to the short-term rating.(See "Public Finance Criteria: Municipal Applications For Joint Support Criteria").

Two different tender option structures have been used: the put and the swap. In the put structure, the variable interest rate is set by the remarketing agent and capped at the underlying obligation's interest rate (minus trust fees, if applicable). In the swap structure, a net payment is made by the depositor to a swap counterparty, as long as the synthetic floater rate is less than the bond interest rate. If the variable tender option rate exceeds the underlying bond rate, the swap counterparty pays the difference to the depositor.

Standard & Poor's examines the documents in both structures to ensure that the interest rate setting mechanism is clearly defined and that the trustee's duties with respect to the depositor and holders of synthetic floaters with a tender option are carefully outlined.

Multiple assets

Standard & Poor's will review synthetic floater structures that have multiple obligations deposited into a trust either at the trust's creation or subsequent to the trust's creation. The rating on the receipts can be based either on an evaluation of the underlying asset pool using the municipal CDO Evaluator, or by using a weak-link approach using the ratings of each of the assets depending on the size of the pool. If a trust structure is created to permit multiple obligations to be deposited, Standard & Poor's analyzes the maximum rate definition to ensure receipt holders are not affected by the multiple obligations' different maturities and rates of interest. The maximum rate definition can state the maximum rate of the receipts will be adjusted such that the receipt holders will receive the weighted average of the obligations taking into account the multiple maturities. A more conservative approach can state the maximum rate of the receipts will be capped at the lowest bond rate of the multiple obligations.

Reinvestment risk (odd-lots)

In some instances, the authorized denomination of the underlying obligation is different than the authorized denomination of the synthetic floaters.

Such a mismatch can result in the underlying obligations not accruing sufficient interest due to the occurrence of a prepayment. The entire amount of the prepayment of the underlying obligations cannot be passed through to the floater holders because the principal denomination may be less than that of the synthetic floaters. Thus, the structure could potentially have receipts outstanding without an underlying interest generating obligation. Even if such prepayments are held invested until the authorized denomination amount is met, there is a risk that the investments will not generate enough interest to pay the requisite interest amount due to the floater holders. The documents can address this risk either by having the authorized denomination of the receipts consistent with the underlying obligation, or make an adjustment for such an occurrence in the maximum rate definition.

Liquidity facility analysis

Although synthetic floaters with a tender option are very similar to other municipal VRDOs rated by Standard & Poor's, additional liquidity risks are associated with these structures because holders can lose the right to tender their receipts without notice upon certain events. If a tender option termination event (TOTE) occurs, synthetic floater holders lose their tender option rights and instead receive their pro rata share of underlying bonds or proceeds of the sale of the bonds, provided that the proceeds are sufficient to pay the synthetic floater holders par plus accrued interest and, if rated, the residual interest holder at par. If sale proceeds are insufficient, then the synthetic floater holders and the residual interest holders receive their pro rata share of the underlying bonds as a distribution from the trust. If Standard & Poor's has rated the residual interest receipt, the distribution to residual holders upon termination cannot be subordinate to the payment received by the holder of the synthetic floater with a tender option. In other words, the tender option floater holder and the residual interest floater holder must each receive a pro rata share of the underlying obligation or the sale proceeds.

Termination of the tender option without notice is acceptable for the following events:

1. The issuer of the underlying obligation fails to pay principal or interest when due and such failure is not cured during any designated cure period (if applicable); if the bond rating is based on credit enhancement, payment default is limited to the credit enhancement provider. If the underlying obligation's rating is based on the application of joint support criteria, then the TOTE cannot occur until both entities providing support fail to pay principal and interest when due and such failure is not cured during any designated cure period (if applicable).

2. The issuer of the underlying obligation files for bankruptcy; if the obligation's rating is based on credit enhancement, bankruptcy is limited only to that of the credit enhancement provider. If the underlying obligation's rating is based on the application of joint support criteria, bankruptcy has to apply to both entities providing support.

3. The Standard & Poor's underlying obligation's rating falls below investment grade (below 'BBB-').

4. The underlying obligation is deemed taxable.

The occurrence of other credit-related events are reviewed for approval by Standard & Poor's on a case-by-case basis. The analysis of "other credit-related events" must be deemed by Standard & Poor's to be remote or factored into the long-term component of the dual rating.

Synthetic floater structures may include some or all of the events detailed above. Standard & Poor's believes that the likelihood of the occurrence of the first two events is already factored into the long-term component of the dual rating. If the transaction is structured to include event 3, Standard & Poor's will rate the receipts only if they are derived from underlying obligations that at the time of the trust rating, have an enhanced, unenhanced, or jointly supported rating of 'A+' or higher.

Standard & Poor's permits liquidity facilities generally to terminate without notice if the events triggering such terminations are consistent with standby bond purchase agreement criteria. These liquidity facility termination events typically are the same as those that terminate the tender options under the trust documents. If the rating on the underlying bond depends on credit enhancement, such as bond insurance or an LOC, the events that result in termination of the tender option and the liquidity facility without notice must relate only to the credit enhancement provider, not to the issuer or obligor of the underlying bond. Further, if the rating on the underlying obligation is based on the application of joint support criteria, then the events that result in termination of the tender option and the liquidity facility without notice should relate to both entities supporting the obligation.

The purchase price of tendered securities is paid from remarketing proceeds, and from draws by the tender agent on the liquidity facility. As with VRDOs, the liquidity facility for the tender option synthetic floaters must provide coverage for the full principal amount of the securities, as well as the maximum interest rate on the tender option synthetic floaters for the maximum number of days that can accrue during any interest payment period. The tender agent for the receipts must have clear instructions in the trust documents to draw upon

the liquidity facility in accordance with its terms in the event that remarketing proceeds are insufficient to pay the purchase price of tendered receipts. The liquidity facility provider should agree to use its own funds to purchase unremarketed tendered bonds and also agree to fund tenders in immediately available funds. The conditions' precedent and events of default that are permitted to automatically terminate the liquidity provider's obligation to purchase tendered receipts are reviewed carefully.

As with primary market transactions, a liquidity rating based on an liquidity facility can never be higher than the equivalent long-term bond rating of the bond issue, since the bank's obligation to fund the purchase price for tendered receipts is conditioned on the underlying obligor or insurer's ability to meet its obligations (See chart, "Correlation Of Unenhanced CP Ratings With Long-Term Ratings"). The liquidity rating of the synthetic floater with a tender option will be based on the lower of the short-term rating assigned to the bank or the short-term rating correlating to the long-term rating of the underlying bond issue due to the linkage between the liquidity facility and its potential termination under the terms of the trust documents. Therefore, the likelihood of the liquidity facility provider terminating its obligation to purchase tendered receipts is correlated to the long-term rating of the bond issue.

Municipal Strips

Strips are zero coupon receipts that represent portions of individual interest and principal payments from a deposit of underlying bonds. To rate a municipal strip issue, there must be an outstanding Standard & Poor's rating on the municipal bond that is stripped, since the strip rating reflects the rating assigned to the underlying bonds. Any change to the rating of the underlying bonds will result in an identical change to the rating assigned to the strips.

As part of the custodial analysis, Standard & Poor's requires that the documents provide that all principal and interest payments flow directly to the custodian so that the custodian may forward the bond payments to strip-holders.

Auction Floaters/Inverse Floaters

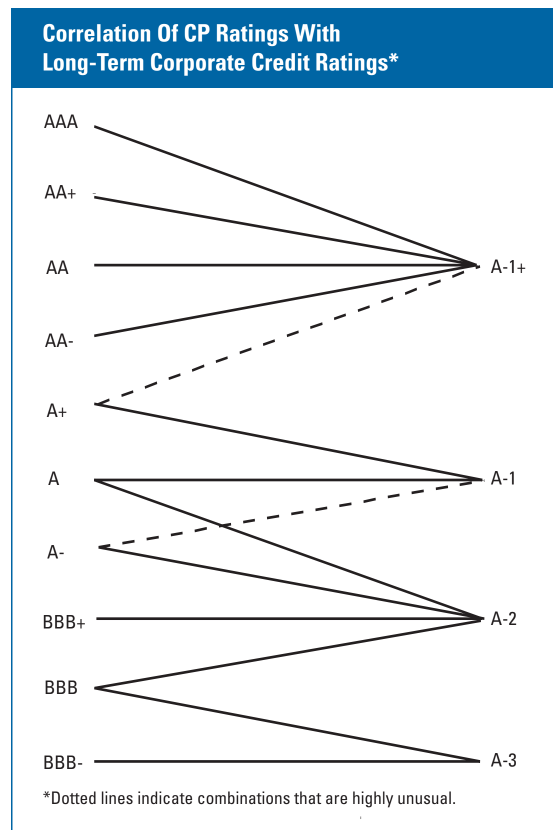
Auction floater and inverse floater trust receipts are variable-rate secondary-market instruments structured to divide the interest generated from a deposit of underlying municipal bonds. Although the receipts are variable rate, they do not have optional tender rights, and thus are not eligible for short-term ratings.

The receipts are created when a depositor purchases all or a part of a fixed-rate bond issue and, after depositing the bonds with a trustee, issues two classes of variable-rate receipts based on the underlying bonds. Interest on the auction floater receipts is set periodically according to an auction bidding process. Inverse floater receipt holders receive the residual interest generated by the underlying bonds after the auction floater interest is paid and any applicable fees are deducted.

The receipts represent the proportionate direct ownership of the future principal, interest, and redemption premiums, if any, generated by the underlying bonds. The rating on the receipts addresses the likelihood that auction rate receipt holders will receive the underlying principal and interest payments when due. However, the rating does not address the likelihood that an auction will be successful or that an auction rate receipt holder will be able to resell a receipt in any auction.

Structural analysis

To qualify as a ratable auction floater/inverse floater structure, the documents for a particular issue must clearly define the auction interest and residual interest rate setting mechanisms so the interest earned plus any applicable fees do not exceed the interest generated by the underlying bonds. There is an inverse relationship between the rate on the auction receipt and the rate on the inverse floater. The inverse floater holder receives



Correlation Of CP Ratings With Long-Term Corporate Credit Ratings*

*Dotted lines indicate combinations that are highly unusual.

the difference between the interest generated by the bonds and the auction rate and any applicable fees.

Moreover, inverse floater holders bear the risk of receiving no interest if the auction rate and the fees claim the entire interest paid by the bonds for the auction period. The highest maximum auction rate should be clearly set forth in the custody or trust agreement.

While auction floaters are purchased as a hedge against rising short-term interest rates, inverse floaters are purchased as a hedge against decreasing interest rates. In the event that interest rates turn against them, holders of either class of receipts may purchase the other class of receipts in the open market and link them together to receive the underlying bond interest rate, less applicable program fees. Auction floater/inverse floater programs may also give the inverse floater holders the right to purchase auction floater receipts at par through a mandatory tender. The purchase price for tendered auction receipts is deposited with the custodian at the time that notice is given or paid in immediately available funds on the tender date. If an inverse floater holder fails to pay the purchase price on the tender date, the mandatory tender is canceled thus a dual rating is not warranted. ■

Introduction To Tax-Exempt Housing Bonds

Ratings on tax-exempt housing bonds rely on the following factors:

- Credit quality of mortgage collateral, including credit quality of mortgage insurers and guarantors, property insurers, and rent subsidy providers;
- Credit quality of other income streams, such as federal, state and local funding sources.
- Adequacy of reserve levels needed to provide a safety net for interruptions in debt service attributable to delinquency, default, and foreclosure;
- Credit quality of investments of all funds held for the benefit of bondholders;
- Sufficiency of cash flow to make bond payments under expected, as well as stress, scenarios;
- Ability of legal provisions to protect the flow of funds to bondholders under all circumstances; and
- The ability of an issuer, obligor and trustee to administrate its programs effectively. ■

Single-Family Whole Loan Programs

Standard & Poor's Ratings Services rates single-family mortgage revenue bonds backed by whole loans or loans securitized by the Government National Mortgage Association (Ginnie Mae), the Federal National Mortgage Association (Fannie Mae), and the Federal Home Loan Mortgage Corp. (Freddie Mac). Please refer to, "Public Finance Criteria: Single-Family Mortgage-Backed Securities Programs," for criteria specific to these MBS programs. Standard & Poor's approach to rating whole loan MRBs focuses on six areas of analyses: quality of mortgage loans, insurance, cash flow analyses, reserves and investments, legal provisions, and program management.

Quality Of Mortgage Loans

The primary factors used to assess asset quality include property type, type of loan, loan-to-value (LTV) ratio, portfolio size, and economic conditions within the lending area. These factors indicate a portfolio's vulnerability to delinquencies, defaults, and possible deterioration in market values. In addition, due to anti-predatory lending legislation now in place in many states, Standard & Poor's will look for possible risk exposure in the loan portfolio based on the specific issuer's potential liability.

Property type

Historically, MRB issuers have restricted their portfolios to single-family, owner-occupied detached dwelling units. The targeting of money for other types of homes such as two-to-four unit homes, co-ops, and condominiums may occur to address the specific housing needs. Standard & Poor's rating analysis factors in the increased risks associated with these product types.

Types of loans

The standard high quality, least risky loan portfolio consists of 30-year level-pay, fixed-rate, first-lien, fully amortizing mortgages on single-family residential properties. Standard & Poor's considers rehabilitation loans, construction loans, second-or third-lien mortgages, bought-down mortgages, and tiered-payment mortgages to be significantly riskier. More recent product lines such as interest-only loans, 40-year mortgages, second loans and piggyback loans also have a higher risk profile.

LTV ratio

LTV ratios are an important determinant of the likelihood of default. Higher LTV loans will have a higher assumed foreclosure frequency (FF)—a critical determinant of loss coverage. Programs

that reduce the amount of equity a borrower has in the property will have an impact in the assessment of overall losses.

Portfolio size

Each portfolio must have sufficient size and geographical dispersion to perform in a statistically predictable manner. Therefore, Standard & Poor's loss coverage model assigns higher risk factors to pools fewer than 300 loans and pools of loans with limited dispersion.

Economy of the lending area

The economy of a particular area provides indications of the potential severity of mortgage defaults that could occur over the term of the bonds. Standard & Poor's assesses the lending area to estimate the level of delinquencies, foreclosures, and expected prepayments to determine whether the value of the mortgaged properties is likely to be maintained over the life of the bonds.

Anti-predatory lending legislation

Standard & Poor's must review the potential for financial liability due to anti-predatory lending legislation on all single-family whole loan programs. Many states have adopted legislation with assignee liability that can result in fines levied against loan purchasers should predatory lending practices be identified. In some instances, housing finance agencies have been specifically excluded from these laws. If that is the case, the HFA should provide an officer's certificate to that effect. If not, issuers must be able to provide appropriate representations and warranties to cover this risk and, in some instances, additional credit enhancement may be needed. The need for credit enhancement may be waived if the issuer has a long-term rating equal to the rating on the bonds, although the risk must still be quantified and taken into account in the issuer's credit rating.

Insurance And Insurance Alternatives

Standard & Poor's analyzes the level of primary mortgage insurance (PMI), mortgage pool insurance, cash advance coverage, standard hazard insurance, special hazard insurance, title insurance, and any other loss coverage credit enhancements provided. Standard & Poor's also may look for additional insurance coverage, such as flood and/or earthquake insurance, depending on the geographic location of the mortgaged properties. In recent years, many HFAs have sought alternatives to traditional mortgage pool insurance, as escalating premiums and deteriorating insurance company ratings have become prevalent.

Calculation of loss coverage

Loss coverage must be sufficient to provide credit and liquidity protection under Standard & Poor's "worst-case" scenarios. In determining total loss coverage needed, Standard & Poor's looks for coverage of credit losses and liquidity shortfalls.

The credit coverage offsets any shortfalls occurring subsequent to the foreclosure sale and after receipt of PMI. Liquidity coverage is an estimate of shortfalls due to mortgage cash flow delinquencies prior to foreclosure and receipt of insurance recoveries or credit enhancement payoff.

As a starting point, Standard & Poor's approach to loss coverage assumptions begins with an evaluation of the portfolio's origination area. The categories are large state, small state/large county, and small county/city. Large states are those with populations above six million. The small state/large county category includes states with populations below six million, and counties that have populations above one million. Areas in the small county/city category have a population of less than one million. Geographic and socioeconomic issues also affect the evaluation.

Standard & Poor's loss coverage tables identify the FF, FC, and MVD assumptions for each rating category and area classification. Modification of these assumptions may occur, depending on aspects particular to a pool of mortgage loans. The category distinctions are reflected primarily in the FF. The higher the portfolio concentration, the higher the risk of severe housing price declines in the event of a substantial economic slowdown or housing market disruption. Therefore, the small county/city category also reflects higher MVD assumptions than the other two categories.

Two important assumptions are critical to determine the level of loss coverage: The percentage of loans in the portfolio that will go into foreclosure over the life of the bond issue, or the foreclosure frequency (FF); and the expected average loss for each foreclosed loan, or the loss severity (LS). The calculation of loss coverage is simply the multiplication of the assumed FF of a portfolio by the assumed LS. There are many factors that influence Standard & Poor's FF and LS assumptions. These include the bond rating, portfolio dispersion, current economy, type and level of PMI, market value decline (MVD), dwelling type, mortgage type, servicing capability of the participants, foreclosure costs (FC), and LTV ratios. The historical delinquency and foreclosure performance of an existing portfolio also will factor into the FF and LS assumptions.

Standard & Poor's considers the following factors when calculating loss coverage:

Primary or loan-specific insurance

This can take one of three forms: conventional PMI provided by rated mortgage insurers; guarantees from the Federal Housing Administration (FHA) or the Veteran's Administration (VA); or USDA Rural Development (RD) insurance. PMI pays claims as a percentage of loan amount. PMI coverage down to 72% LTV on all loans greater than 80% LTV is most common.

When evaluating private mortgage insurers for loss coverage, Standard & Poor's compares the financial strength ratings (FSR) of the insurers to the current or prospective rating on the bonds. Insurers whose FSR ratings are at least as high as the rating for the bonds are assumed to pay on all of their respective claims. Hence, the recovery amounts are stipulated under the policy. It is possible for insurance providers with FSR ratings below the rating on the bonds to receive partial credit.

Standard single-family FHA insurance covers 100% of the mortgage principal, all but two months of accrued unpaid interest, and two-thirds of foreclosure costs. VA loans originated on or after March 1, 1988 are guaranteed as follows: home and condominium loans of $45,000 or less are guaranteed at 50% of the loan amount; loans of $45,001 to $56,250 are guaranteed at a maximum payment of $22,500; and loans of $56,251 to $144,000 are guaranteed at 40% of the loan amount, with a maximum guarantee of $36,000. Legislation passed in 2004 further increased guarantees of a loan amount up to $417,000, with a maximum of 25% up to $104,250. There are no limits on loan size so that if the loan amount exceeds the guaranteed limit, the value of the guarantee is reduced on a percentage basis. VA loans originated prior to March 1, 1988 have a higher coverage in terms of the percent of the mortgage, but have lower limits of coverage in dollars. Manufactured home loans are covered at 40% of the loan, with a maximum guarantee of $20,000.

Rural Development will pay its claim based on an appraisal after foreclosure has occurred rather than on the sale of the property, as in other insurance programs. RD will pay the lesser of any loss up to 90% of the mortgage, or an amount up to 35% of the mortgage plus any additional loss equal to 85% of the remaining 65% of the mortgage. Adjustments must be made to the calculation to account for additional shortfalls in the RD insurance. These include additional coverage for the difference between the actual sales price and the appraised value, along with the cost of holding the property between foreclosure and sale.

Loss severity. There is a level of primary insurance at which the loss severity calculation can reach zero. However, when determining loss severity in conjunction with a deep primary insurance proposal, some loss always must be assumed on a foreclosed mortgage. This is because Standard & Poor's assumes that worst-case situations will occur on some of the mortgages in the pool. That is, a 100% market value decline and foreclosure costs higher than 22% could result on a mortgaged property, and deep primary mortgage insurance would not cover the full loss.

Foreclosure costs. Two components make up Standard & Poor's assumption for FC (22% of the outstanding loan): lost interest costs (9%) and hard costs (13%). Lost interest costs arise as a result of the assumed loss of accrued interest for a period of at least 12 months and are therefore equal to the mortgage rate times the loan balance. The hard cost component includes brokerage fees (5%), legal fees (3%), taxes (3%), and other costs (2%).

Agency credit. The credit portion of the loss coverage may not be necessary for a given bond issue if the following conditions are met: (1) the issuer is an HFA that has an Issuer Credit Rating (ICR) or has been designated "top-tier" (see state agency section); and (2) Standard & Poor's calculation of total loss coverage is less than 2%. These amounts must then be factored into the agency's capital adequacy. In addition, when calculating the necessary loss coverage for issues in which Standard & Poor's has given the agency portfolio oversight and administration credit (but not necessarily an ICR or top-tier status), Standard & Poor's may find it appropriate to assume foreclosure costs lower than 22%, provided that reduced foreclosure costs can be adequately represented by the HFA over a significant period of time. This occurs because many of the variable costs associated with a foreclosure already are included in the agency's fixed administration budget, and well-managed agencies can control and reduce these costs substantially.

Liquidity loss coverage. Liquidity coverage is necessary because of the loss of mortgage loan payments during the delinquency period prior to foreclosure. Loss mitigation procedures and other factors can extend the length of time between delinquencies to foreclosure to six to 24 months. For this reason, Standard & Poor's assumes that liquidity shortfalls will occur for a period of approximately 18 months. The liquidity coverage necessary is equal to FF divided by three years multiplied by the monthly mortgage constant times 18 months. The monthly constant represents the level monthly principal and interest payment divided by the original mortgage balance. The resultant liquidity coverage should be covered by liquid reserves, for example, pledged funds in an investment agreement or a LOC, in each case from a provider with a credit rating at least as high as that assigned to the bonds.

This will ensure the immediate availability of funds upon a mortgage default. As this coverage provides liquidity, it can be funded from bond proceeds.

Loan to value. Evidence indicates that the amount of mortgagor equity invested has a direct impact on the foreclosure rates. As LTV increases, the FF and MVD increase as shown in the table, "Loss Coverage Criteria".

Small pool size. Standard & Poor's applies a small pool size factor to the credit loss coverage percentage on pools of less than 300.

Dwelling type. For mortgage revenue bonds that permit three-and four-family residences where the income from the rental units is taken into account in determining program eligibility, or include cooperative apartments, condominiums, or other type of homes, Standard & Poor's makes adjustments to MVD and FF. The reasoning behind the MVD adjustment is that the market for such properties is narrower than for single-family or two-family residences. The higher FF assumption is based on the MVD of such residences and the risks associated with rental property vacancies.

Mortgage type. Standard & Poor's increases FF for interest only mortgages, 40-year mortgages and piggyback loans, all of which reduce the amount of equity a buyer has in the property, either at the time of purchase or during the term of the loan. Standard & Poor's assumes that other loan products that are not as common such as graduated payment mortgages (GPMs), graduated equity mortgages (GEMs), or mortgages with buy-downs will also experience a higher FF.

Foreclosure frequency cap. Standard & Poor's recognizes that it may be excessively conservative to assume a FF level above 75% at the 'AAA' rating level and 60% at the 'AA' rating level for loans that are not delinquent or are newly originated. Therefore the FF is capped at these levels. This is generally only applicable to local whole loan issuers, which are very rare. In these cases the limited geographic dispersion would push FF beyond the caps, but experience from existing local programs indicates that they have never exceeded the capped FF.

Minimum loss coverage. Even with very deep PMI, any loan portfolio will sustain additional losses. Generally, a minimum loss coverage of 2% is appropriate for investment grade ratings.

Methods of providing loss coverage

Issuers use several methods for covering portfolio losses:

Pool insurance

Pool insurance was once a widely used vehicle for providing loss coverage. As the cost of insurance became prohibitive, HFAs developed many viable alternatives. Pool insurance is still available in some states. To be acceptable, the pool insurance provider should have an FSR rating as high as the rating on the bonds. Pool insurance covers losses on foreclosures in excess of primary mortgage insurance. However, not all pool insurance policies will cover losses on FHA-or RD-insured and VA-guaranteed loans. The policy must specifically address coverage of such losses. Through advance claims provisions, pool insurance may provide liquidity protection through periods of mortgage delinquencies. Such payments will continue if the servicer and trustee diligently pursue foreclosure on the mortgage. However, because of the relatively low use of pool insurance policies in recent years and a scarcity of cash advance riders, issuers use liquid reserve funds more frequently to address the liquidity needs of particular loan pools.

Self-insurance funds. Some HFAs that have found that the cost of pool insurance exceeds the amount of claims paid have used the self-insurance fund (SIF) alternative. For most agencies, Standard & Poor's allows partial funding of the SIF under the bond resolution, with the remainder in set asides and available fund balances (a leveraged SIF). Similar to pool insurance, the SIF would be drawn down to cover losses due to foreclosures and for advance claims payments. Provided that a housing agency is eligible to establish and use the SIF, the following minimum standards may apply, as considered on a case-by-case basis:

- PMI covering at least the top quarter of every mortgage loan should be provided by a conventional primary insurer with a Standard & Poor's FSR rating as high as the rating on the bonds. Alternatively, the SIF could be established to cover the reduced pool coverage requirements for FHA-insured, RD-insured, or VA-guaranteed loans.
- If leveraged, the SIF should be at a level of at least 20% of the anticipated total loss coverage exposure available from excess assets in the bond program.

A net worth maintenance reserve or agency general fund set aside in an amount equal to 25% of the anticipated loss coverage amount is necessary, in addition to the amount held under the indenture. This reserve can be escrowed with the trustee or an independent third party and pledged to bondholders, or it can be segregated in the agency's general fund balance and designated for replenishment of the SIF requirement, as necessary. The methodology used and maintenance level should be outlined in a board letter or officer certificate and presented to Standard & Poor's at the time of rating. The SIF reserve should be funded under the indenture at bond closing or as a condition to mortgage origination.

Standard & Poor's will review the agency's intended investment of these monies, including the quality and liquidity of proposed investments, which should be invested in investments rated as high as the desired rating on the bonds. All SIF investment earnings and all premiums charged and received from a portfolio must first be applied to restoring the SIF to its initial requirement before being released to the agency or used to redeem bonds. All SIFs should be maintained at the original loss coverage amount, drawn down only for losses incurred, but not reduced based on the amortization or prepayment of the mortgage portfolio. Lastly, in addition to the net worth maintenance reserve overlaying the SIF, Standard & Poor's will look at an agency's fund balance to ensure that the remaining 55% of the loss coverage exposure is available.

The SIF reserve ratio is higher than that of a private mortgage insurer because of the increased risk inherent in statewide portfolios, compared with nationally dispersed pools. Geographic concentration increases the possibility that the SIF might have to make larger claims settlement payments during local economic downturns without earning any offsetting premiums in unaffected regions. The level of reserves, including SIF reserve and net worth maintenance among others, reflects Standard & Poor's analytical assessment that the SIF might remain solvent and meet all drawdowns, even in the event of significant economic stress.

Risk share agreements. Several pool insurance providers have entered into risk share or shared loss agreements with HFAs. Traditionally, these arrangements provide the housing agency with more flexible loan underwriting requirements and lower premiums in exchange for the housing agency taking on some of the real estate risks of the portfolio. Usually, the housing agency is responsible for taking on the second or middle layer of risk. Because this risk is significant, Standard & Poor's reviews all risk share agreements in detail prior to the sale of the bonds and issuer's acceptance of such arrangements. Collateral or fund balances similar to those used for the self-insurance fund alternative may need to be pledged to achieve the desired ratings.

Economic stress cash flows. Another method that can be used to address loss coverage involves the capitalization of assumed worst-case scenario losses into the structure of the issue. This scenario incorporates Standard & Poor's criteria for directly simulating the effects of economic stress on a given mortgage portfolio. This simulation, or "economic stress scenario," is based on the same criteria used to compute loss coverage and is incorporated into all cash flow runs required in the rating process. The objective of the scenario is to demonstrate that a bond issue can undergo the worst-case assumptions used to determine loss coverage and still meet timely debt service.

The economic stress simulation occurs over the first three years after the first month of mortgage origination wherein mortgages equal to one-third of the assumed foreclosures continue for one year, at the end of the year, the nonpaying mortgages are foreclosed. All accrued interest is recouped and all principal recovered, less an amount equal to the loss severity. This scenario is repeated in each of the three years, and all amounts are based on the initial portfolio balance.

The losses incurred can be discounted at the mortgage rate and deducted from total assets at loan origination, or deducted from the cash flows as they occur. If the latter approach is used, cash flows reflecting the economic stress scenario must be sufficient to pay two bond payments during the first 12-month stress period without the benefit of recoveries from foreclosed loans. An additional method is the establishment of a reserve amount that, when invested at a particular rate, is sufficient to cover any losses created under the economic stress scenario. Cash flows should demonstrate the ability to meet debt service and expenses under all origination and prepayment scenarios loss coverage. Furthermore, it is important that the economic stress scenario not result in a reduction in the bond issue's asset-to-liability parity ratio after origination. Such reductions in asset coverage indicate that assets other than those earmarked for loss coverage substitution are utilized.

LOCs. LOCs have been used by several HFAs to satisfy loss coverage. The LOC must be issued by a financial institution whose long-term unsecured debt rating is at least as high as the desired rating on the bonds. The LOC should provide credit and liquidity coverage and should provide for reinstatement, if the delinquency is cured by the mortgagor.

General obligation pledge. Rated HFAs may pledge their general obligation to all payment obligations under a bond issue or restrict the pledge to specific funds, such as reserve funds. Loss coverage may be met in this way as long as the HFA's rating is as high as the rating on the bonds and the exposure to potential losses does not adversely affect the HFA's ICR rating. In some instances, an HFA's rating may be a full rating category below the bond rating and still qualify. Unless the HFA has an acceptable liquidity rating, only credit losses may be covered in this way.

Subordinate bonds. Several HFAs have used subordinate bonds to meet loss coverage. The size of the subordinate issue must equal the amount of loss coverage needed to secure the senior bonds' mortgage

portfolio. For a senior/subordinated structure, Standard & Poor's must determine if there is a bona fide distinction between the security of the senior and subordinated liens. In the absence of a clear-cut determination, Standard & Poor's will issue the same rating on each the senior and subordinated bonds. Standard & Poor's addresses seven key components to substantiate a clear senior and junior position with respect to bondholders' liens: security pledge to bondholders, additional bond provisions, redemption provisions, flow of funds, default/cross-default, bondholder rights and approvals, and miscellaneous items.

Overcollateralization. Overcollateralization can be used to cover loan losses in bond structures that have only senior lien bonds. In such instances, additional collateral, such as cash and/or loans, is provided in the amount of the loss coverage necessary. If the overcollateralization is in the form of additional mortgages, Standard & Poor's will discount the loss coverage on the loan pool to reflect potential losses on those loans as well. These cash flows may require the deposit of additional collateral. Liquidity coverage may not be covered by overcollateralization unless it can be demonstrated that the excess collateral is liquid.

Additional insurance

Condominium insurance. Single-family issues that permit a significant percentage of condominiums (10% or greater) should provide the following coverage: Multiperil coverage, including fire, and extended coverage on a replacement cost basis; public liability for personal injury and property damage resulting from accidents occurring in public or common areas. Such insurance must contain a "sever ability of interest" endorsement that precludes the insurer from denying the claim of a condominium unit owner because of negligent acts of the condominium owners' association or other unit owners; coverage against boiler explosion and other machinery accidents; blanket flood insurance for condominiums located within federally designated flood areas; and a fidelity bond on the condominium owners' association for condominium developments of more than 30 units.

High-rise condominiums. For portfolios including high-rise condominiums (buildings of five or more stories), the issuer must obtain a special hazard insurance policy. This policy insures the greater of 1% of the portfolio or the sum of the aggregate portfolio exposure in the top-two, high-rise condominiums.

Special hazard insurance. Standard & Poor's looks for insurance in an amount equal to twice the largest loan in all single-family portfolios where a pool insurance policy is used and special hazard risks are excluded as claims payable under the policy. In establishing the two times policy, Standard & Poor's assumes that the two largest single-family structures will be destroyed regardless of portfolio size. The high-rise condominium criteria apply this concept to the two largest property risks.

Title insurance. Representations that title insurance policy are in place at loan closing for all mortgages must be in the financing documents.

Flood and earthquake insurance. Representations that these types of insurance are in place on each mortgage loan are necessary if the property is in a federally designated flood or earthquake zone.

Table 1 **Rapid Prepayment Stress Run For 'AAA' Rated Issues**

	—Years until full redemption of bonds—	
Interest rate (%)	State HFA parity program	Local HFA or state HFA non-parity program
6.50 or lower	5.0	4.0
6.51 to 7.00	4.5	3.5
7.01 to 7.50	4.0	3.0
7.51 to 8.00	3.5	2.5
8.01 to 8.50	3.0	2.0
8.51 to 9.00	2.5	2.0
9.01 and higher	2.0	2.0

Cash Flow Analysis

The first objective of cash flow analysis is to assess the relative strength of the various revenue sources generated by the program's assets to cover scheduled debt service. The second is to ensure that program assets are enough to cover the outstanding bonds. The third objective is to evaluate the resiliency of the issue to withstand various origination and prepayment scenarios.

Cash flow projections

Cash flow projections should include, at a minimum:

- Full origination of loans/0% PSA prepayment experience. This minimum prepayment level may be increased to as high as 30% PSA if an issuer can provide historical evidence of prepayments on loans in a seasoned indenture;
- Full origination of loans/100% PSA prepayment experience;
- Full origination of loans/three-year average life of the mortgage loans (typically 500%-750% PSA) prepayment experience;
- Non-origination of all loans assuming a full redemption of bonds on the date specified in the bond documents in the event full origination does not occur.

Depending on the structure of each transaction, other cash flow scenarios may be needed. Such runs may include, but are not limited to:

Rapid prepayment scenario. All 'AAA' rated issues should include this stress run. Cash flows should be prepared at a prepayment speed sufficient to retire all bonds within two years after origination; however, depending on the mortgage loan interest rate, the issuer, and whether or not the bonds are part of a parity program, this scenario may be run at slower prepayment speeds that retire all bonds within a greater number of years after origination, as shown below:

Depending on an issuer's prepayment history, Standard & Poor's may request a faster prepayment scenario for 'AA' category indentures. This scenario would include an initial prepayment rate of 1000% PSA for the first three years following loan origination, and then the three-year average life prepayment speed thereafter.

PAC stress scenario. If the bond structure includes a planned amortization class (PAC) bond, this stress run may be needed if the net interest rate on the PAC bond, factoring in any premium, is among the lowest of all bonds in the structure. Cash flows should be run at the PSA prepayment percentage that the PAC bond is structured at, which is the level at which all prepayments first go toward calling the PAC bond (typically around 100% PSA), until the PAC bond is called in full, and then at 0% prepayments until bond maturity.

Super-sinker stress scenario. If the bond structure includes a super-sinker bond, typically seen in older series of bonds within a parity indenture, this stress run should be included in consolidated cash flows for each series of bonds having a super-sinker bond. Cash flows should be run at the three-year average life of the loans prepayment rate until the super-sinker priority term bond is called in full, and then at 0% prepayments until bond maturity.

Liquidity stress scenario. If serial bonds are present in the structure when either a PAC or super-sinker bond is present and are not called on a pro rata basis with the PAC/super-sinker, a run should be submitted whereby the prepayments (run at the same speed as the PAC/super-sinker run above) shut off at the point of greatest decline in prepayment moneys received and remain at 0% until bond maturity.

CAB-remainder stress scenario. The cash flows for structures that include a CAB (capital appreciation bond) that is call-protected should include a CAB-remainder projection where cash flows are run at the three-year average life prepayment rate until all current interest and other non-call-protected bonds are called in full, and then at 0% prepayments until bond maturity.

Multiple mortgage rate stress scenario. The cash flows for issues that include more than one mortgage rate may need to be run reflecting different prepayment speeds for each mortgage rate. Please refer to Chart 3 & 4 at the end of this article for the information needed to perform this run.

Forty-year mortgage scenario. Loans with longer loan terms usually generate less revenue on a semi-annual basis than 30-year loans. If 30-year and 40-year loans are in the same indenture, Standard & Poor's may request an additional cash flow with the

Table 2 **Loss Coverage Criteria (%)**

			Large State		
AAA					
LTV	100	97	95	90	80
FF	42	38	35	17	12
FC	22	22	22	22	22
MVD	37	37	37	37	37
AA					
LTV	100	97	95	90	80
FF	32	29	27	13	9
FC	22	22	22	22	22
MVD	34	34	34	34	34
A					
LTV	100	97	95	90	80
FF	26	23	21	11	7
FC	22	22	22	22	22
MVD	29	29	29	29	29
BBB					
LTV	100	97	95	90	80
FF	19	18	16	8	5
FC	22	22	22	22	22
MVD	25	25	25	25	25
			Small State/Large County		
AAA					
LTV	100	97	95	90	80
FF	61	58	53	26	18
FC	22	22	22	22	22
MVD	37	37	37	37	37
AA					
LTV	100	97	95	90	80
FF	47	44	40	20	13
FC	22	22	22	22	22
MVD	34	34	34	34	34

30-year loans prepaying at the appropriate rapid speed in accordance with the rating, assuming there are no prepayments on the 40-year loans. This would indicate whether the indenture could maintain debt service payments with the support of 40-year loans alone.

Third-party verification

Standard & Poor's may request that final cash flow analysis be verified by an independent third party, such as a nationally recognized accounting firm, bond firm, or other expert in the field. This would occur if the cash flow provider did not have a track record of providing cash flows for a particular type of transaction. Once a history of accurate cash flows has been established, third-party verification will not be requested.

Table 2 **Loss Coverage Criteria (%)** (continued)

			Small State/Large County		
A					
LTV	100	97	95	90	80
FF	38	35	32	16	11
FC	22	22	22	22	22
MVD	29	29	29	29	29
BBB					
LTV	100	97	95	90	80
FF	19	18	16	8	5
FC	22	22	22	22	22
MVD	25	25	25	25	25
			Small County/City		
AAA					
LTV	100	97	95	90	80
FF	75	75	67	22	22
FC	22	22	22	22	22
MVD	53	53	53	53	53
AA					
LTV	100	97	95	90	80
FF	60	60	53	27	18
FC	22	22	22	22	22
MVD	47	47	47	47	47
A					
LTV	100	97	95	90	80
FF	50	47	43	21	14
FC	22	22	22	22	22
MVD	39	39	39	39	39
BBB					
LTV	100	97	95	90	80
FF	37	35	32	16	11
FC	22	22	22	22	22
MVD	34	34	34	34	34

LTV—Loan to value. FF—Foreclosure frequency. FC—Foreclosure costs. MVD—Market value decline.

Variable rate bonds

Standard & Poor's assumes that many interest rate swaps and caps, or short-term assets are imperfect hedges for variable rate mortgage revenue bonds principally due to basis, amortization, and rollover risk. Other risks, such as termination, tax event and counterparty risk can also become risks in these structures, but are less common. For these reasons, cash flow projections for mortgage revenue bonds should also incorporate appropriate risks of variable rate debt, interest rate swaps, and interest rate caps.

All risks identified under swap and cap contracts by Standard & Poor's should be incorporated into the cash flow modeling projections as expenses or "additional" interest due on bonds. Reserve funding or interest rate spread should be shown to cover any shortfalls produced as a result of the modeling. Alternatively, Standard & Poor's can assess shortfalls to an agency's capital adequacy calculation if the bonds benefit from a GO pledge.

Variable rate bonds should be modeled as follows in cash flow projections. "Net" variable rate bond interest should be modeled at the lesser of the high stress interest rates forecast by Standard & Poor's interest rate model, or the maximum interest rate as stated under the bond documents. Standard & Poor's defines the net variable rate bonds for mortgage revenue bonds as those bonds with no synthetic hedge (swaps or caps) or natural hedge (short term or variable rate assets) as well as the amount of "hedged" bonds subject to tax risk, amortization risk, and rollover risk. Hedged debt should include an additional run using the low stress interest rates from Standard & Poor's for the highest prepayment scenario that applies to an indenture. This run would illustrate how well the cash flows perform when the swap counterparty makes the smallest payments on swaps that are based on standard interest rate indices. Lower interest rates would result in lower payments from swap counterparties, and high loan prepayments would accompany low interest rates. Standard & Poor's may request low interest rate assumptions on different prepayment runs for unique bond structures and to monitor the strength of an indenture over time. For additional information, please refer to "Public Finance Criteria: Municipal Swaps."

Table 3 **Examples Of Loss Coverage Calculations At The 'A' Rating Level**

	Large State	Small State/Large County	Small County/City
Foreclosure frequency (%)	21	32	43
Foreclosure costs (%)	22	22	22
Market value decline (%)	29	29	39
Assumptions:			
1) 30-year fixed rate, level pay $95,000 Mortgage			
2) Monthly constant=0.8046%, represents constant monthly payment of principal and interest divided by the original mortgage balance			
3) Private mortgage insurance down to 72 % (Coverage = 24.21%) case (1)			
4) 95% loan to value for private mortgage insured properties. 100% loan to value (95,000) for VA-guaranteed properties, 97% loan to value for FHA-insured properties			
Market value ($)	$100,000	$100,000	$100,000
Mortgage ($)	$95,000	$95,000	$95,000
Depression market value ($)	71,000	71,000	61,000
Market loss ($)	24,000	24,000	34,000
Foreclosure costs ($)	20,900	20,900	20,900
Total loss ($)	44,900	44,900	54,900
Insurance Claim			
Case (1) Private mortgage insurance down to 72%			
Mortgage	$95,000	$95,000	$95,000
Foreclosure costs	20,900	20,900	20,900
Total claim	115,900	115,900	115,900
Recovery	28,059	28,059	28,059
Total loss (market value decline + foreclosure costs) ($)	44,900	44,900	54,900
Recovery ($)	28,059	28,059	28,059
Net loss ($)	16,841	16,841	26,841
Loss severity (%)	17.73	17.73	28.25
Credit loss coverage (foreclosure frequency x 1.2 x loss serverity (%)	3.72	5.67	12.15
Liquidity coverage (foreclosure frequency x 1.2/three years x monthly constant x 18 months (%)	1.01	1.54	2.08
Guaranty Claim			
Case (2) VA guaranty, loan origination prior to 1998			
Mortgage ($)	95,000	95,000	95,000
Foreclosure costs ($)	20,900	20,900	20,900
Total claim ($)	115,000	115,000	115,000
Recovery (60% to maximum of $27,500) ($)	27,500	27,500	27,500
Total loss (market loss + foreclosure costs) ($)	48,450	48,450	57,950
Recovery ($)	27,500	27,500	27,500
Net loss ($)	20,950	20,950	30,450
Loss severity (%)	22.05	22.05	32.05
Credit loss Coverage (foreclosure frequency x 1.2 x loss severity (%)	5.56	8.47	16.54
Liquidity coverage (foreclosure frequency x 1.2/three years x monthly constant x 18 months (%)	1.22	1.85	2.49

Table 3 **Examples Of Loss Coverage Calculations At The 'A' Rating Level** (continued)

Gauranty Claim	Large State	Small State/Large County	Small County/City
Case (3) VA guaranty, loan origination after 1988			
Mortgage ($)	95,000	95,000	95,000
Foreclosure costs ($)	20,900	20,900	20,900
Total claim ($)	115,900	115,900	115,900
Recovery (40%, up to $36,000) ($)	36,000	36,000	36,000
Total loss (market loss + foreclosure costs) ($)	44,900	44,900	54,900
Recovery ($)	36,000	36,000	36,000
Net loss ($)	8,900	8,900	18,900
Loss severity (%)	9.37	9.37	19.89
Credit loss Coverage (foreclosure frequency x 1.2 x loss severity (%)	1.97	3.00	8.55
Liquidity coverage (foreclosure frequency x 1.2/three years x monthly constant x 18 months (%)	1.01	1.54	2.08
Insurance Claim			
Case (4) FHA Insurance Loss severity will always equal the following			
Mortgage rate/12 months x two months = 9%/12x2= (%)	1.50		
Forclosure cost less 12 months accrued interest x 1/2=13%x1/3= (%)	4.33		
Credit loss coverage (foreclosure frequency x 1.1 x adjusted loss severity (%)	1.35	2.05	2.76
Liquidity coverage (foreclosure frequency x 1.1/three years x monthly constant x 18 months (%)	1.12	1.70	2.28
Assumptions			
Case (5) RD Insurance			
30-year, 9% fixed rate, $100,000. Cost Factor = 10.19% of appraised value. Appraised value = depression market value + (depression market value x 10%). 100% loan to value			
Market value ($)	100,000	100,000	100,000
Mortgage ($)	100,000	100,000	100,000
Depression market value ($)	71,000	71,000	61,000
Appraised value ($)	78,100	78,100	67,100
Cost factor ($)	7,958	7,958	6,837
Foreclosure cost ($)	22,000	22,000	22,000
Total loss ($)	51,858	51,858	61,737
RD recovery			
35% of mortgage	35,000	35,000	35,000
85% of total loss less 35% of mort. amt. ($)	14,330	14,330	22,727
Total RD recovery ($)	49,330	49,330	57,727
Standard & Poor's adjustable recovery			
Holding period costs ($)	8,450	8,450	7,050
Appraised value less depression market value ($)	7,100	7,100	6,100
Total adjusted recovery ($)	33,780	33,780	44,577
Net loss ($)	18,079	18,079	17,160
Loss severity (%)	18.08	18.08	17.16
Foreclosure frequency (%)	25.20	38.40	51.60
Loss coverage (%)	4.56	6.94	8.85

Cash flow assumptions

In submitting cash flows to Standard & Poor's, the following assumptions should be made:

Lag assumption. A 30-day lag (in addition to normal arrearage) in receipt of mortgage payments on newly originated and existing loans should be reflected in the cash flows for structures rated 'AA' or below. Standard & Poor's may require a lag greater than 30 days depending on historical delinquency levels; this will be considered on a case-by-case basis. Structures rated 'AAA' should reflect a 60-day lag. Standard & Poor's defines a lag as a delay in payment that is in addition to the normal arrearage (the time period encompassed from the date of mortgage origination until the first scheduled mortgage payment date.) For example, if a mortgage is originated on September 1, the first scheduled mortgage payment would be due on October 1. Thus, cash flows incorporating a 30-day lag would not reflect receipt of this payment by the bond trustee until November 1.

Worst-case draw schedule. Origination of the mortgage portfolio should be reflected under the least desirable placement schedule from an income-generating perspective (i.e., last day draw if the mortgage rate less the servicing fee exceeds the acquisition fund rate; first month draw if vice versa).

Fees

All fees, including trustee, servicers, rebate analyst, and any other parties paid under the financing documents, should be shown in the cash flows in amounts consistent with the financing documents. All fees should be capped, stated as a percentage of the mortgages or bonds outstanding, and, preferably, subordinate to debt service. Minimum trustee fees should be no less than three basis points, with an additional one basis point provided for the rebate analyst fee. Any fixed fees should be ratably reduced in the event of a prepayment under the mortgage loan, or stress runs may be needed.

Investment earnings

In the absence of an investment agreement, Standard & Poor's current reinvestment rate assumptions should be used.

Debt-repayment schedule

Cash flow runs should demonstrate that there are sufficient assets and revenues to pay debt service and expenses under a zero prepayment scenario. In some instances, Standard & Poor's will accept cash flows modeled with some level of prepayments.

Prepayment penalties

No prepayment penalties should be assumed in cash flows, as payment of these penalties may not be enforceable under state law.

Rebate

All rebate fees and payments to the federal government for rebate should be demonstrated.

Surpluses

All projections should assume the availability of some surpluses (defined as revenues in excess of debt service plus expenses) for prior redemption of outstanding bonds. A minimum carry forward balance each period of at least $10,000 should be maintained. If it is the practice of the agency to release excess monies from the indenture at a certain asset/liability parity position or some other point in the issue, cash flows should accurately reflect this release. Funds provided for loss coverage should not be counted as an asset.

Recycling

Indentures that provide for the recycling of mortgage prepayments and surpluses may require additional cash flow runs. Documents should specify that new (recycled) mortgage loans are to be made only at the same rate and existing term as the original (prepaid) loan and such prepayment proceeds are to be held no longer than six months before being used to redeem bonds. Recycling can be done with terms other than the same mortgage rate, term of the loan, or with different holding periods of prepayment proceeds as long as the specific terms as outlined in the trust indenture and mortgage documents are properly modeled in the cash flows.

Table 4 **Prepayment Speeds (% PSA)**

Mortgage loans rate (%)	AAA	AA	A	BBB
11.00	900	866	853	844
10.50	890	856	843	834
10.00	870	836	823	814
9.50	840	806	793	784
9.00	800	766	753	744
8.50	750	716	703	694
8.00	650	616	603	594
7.50	500	466	453	444
7.00	350	316	303	294
6.50	270	236	223	214
6.00	230	196	183	174
5.50	210	176	163	154
5.00	195	161	148	139
4.50	185	151	138	129
4.00	175	141	128	119

Recycling runs include, but are not necessarily limited to:

- Full origination based on worst-case draw/three-year average life prepayment experience/hold prepayment proceeds for longest time stated in documents/recycle all loans on worst-case delivery/then 0% prepayments on recycled loans.
- Full origination based on worst-case draw/three-year average life prepayment experience/hold prepayment proceeds for longest time stated in documents/then non-delivery of all prepayment proceeds.

(Note: Recycling runs should include recycling of surpluses if required under the program.)

Second mortgage loans

Standard & Poor's has developed specific criteria for second mortgage loans, which are done primarily for down payment assistance. Please refer to the criteria, "Single-Family Second Mortgage Loans."

Legal Provisions, Reserves And Investments

In analyzing the strengths of an MRB issue's legal structure, Standard & Poor's primarily, but not exclusively, focuses on seven sets of legal provisions:

- The debt service schedule, including the redemption provisions;
- The level of reserve fund requirements;
- The flow of funds;
- The permitted investments;
- The provisions for additional bonds;
- Trustee and servicer responsibilities; and
- Event of default and taxability provisions.

Redemptions, reserves, flow of funds

Debt service should be structured assuming that mortgage revenues will be received in their regularly scheduled amount with no prepayments. Redemption provisions must clearly state how bonds will be called in the case of all partial redemptions. Unless sufficient stress runs are provided during the rating process, all redemptions should be done on a pro rata or strip-call basis unless a detailed cash flow certificate using the original cash flow assumptions demonstrates that future debt service and payment of fees are not impaired under all cash flow scenarios. In evaluating an issue's flow of funds, two concerns should be addressed: the release of funds and the use of surpluses.

With some exceptions, the flow of funds should be closed for all local issuer transactions, with all surpluses being used to call bonds. State agencies may use an open flow of funds if structured properly, and a cash flow certificate (requiring the same scenarios as were originally provided at the time of initial issuance) is provided each time funds are released. In both cases, the 2% liquid reserve should be replenished through the flow of funds prior to any release of funds. In addition, legal provisions should give first priority to the payment of debt service, then to payment of insurance premiums, with all other expenses subordinated and capped.

Liquid reserves

A liquid reserve of at least 2% of outstanding mortgages should be funded at closing and always should equal or exceed 2% of outstanding mortgages during the bond term. This reserve can be used to the extent that there are deficiencies in the cash flow stream needed to pay debt service between the time that the loan is delinquent and the insurance is received.

Investments and additional bonds

Usually, MRB issuers restrict their investments to risk-free or minimal risk investments, or to investment agreements with banks whose unsecured debt is rated as high as the rating on the bonds. On a case-by-case basis, other investments may be considered, depending on the desired rating and the overall strength of the program. Please see "Public Finance Criteria: Investment Guidelines" for a full discussion of acceptable investments for HFA programs.

Housing agencies issuing bonds under open indentures should notify Standard & Poor's in a timely manner of any intention to issue additional parity bonds. The agencies also should provide Standard & Poor's with the necessary information to assess any potential rating impact on the bonds still outstanding.

Trustee and servicer responsibilities

The trustee and the servicer play an important role in the success of a bond issue. Legally, they are obligated to perform a variety of duties under the financing documents. In some instances, Standard & Poor's will review the trustee and servicer capabilities to carry out these responsibilities.

Event of default and taxability provisions

The only event of default that should trigger an acceleration of bonds on rated issues is the failure to pay principal or interest on the bonds. Covenant defaults should provide for remedies other than acceleration unless bondholder approval to accelerate is obtained from a majority of bondholders. Standard & Poor's ratings on single-and multifamily transactions do not address the likelihood of taxability. Redemptions for a determination of taxability are not permitted unless the trustee has enough monies on hand to redeem the bonds in full.

Program Management

Standard & Poor's focuses on the responsibilities and capacity of the issuer, trustee and mortgage servicer in MRB transactions. All responsibilities should be clearly identified in the financing documents. Standard & Poor's will conduct administrative and managerial reviews upfront and ongoing to address the capacity of issuers and servicers. The ability to execute routine administrative functions and make more complicated business decisions is especially important in MRB issues. HFAs are relied on heavily for this function.

Trustee responsibilities

The ultimate responsibility for the successful management of an issue is the bond trustee. To ensure that the trustee function is performed adequately, the following guidelines should be established in the bond documents:

- The trustee may not resign until a successor trustee is appointed;
- The trustee should hold dedicated assets in funds and accounts designated for a particular transaction, in trust, for the benefit of the bondholders. These funds should not be commingled with any other funds in the trust or commercial department;
- The trustee has primary responsibility for receiving payments from servicers, relevant guarantors, and other third parties, and remitting these receipts to the bondholders in accordance with the terms of the indenture;
- The trustee receives periodic reports with respect to received mortgage payments and future projections and performs the bond administration function;
- The trustee assumes the responsibilities of the master servicer for the mortgage loans upon the servicer's removal or resignation;
- The trustee covenants in the indenture to provide Standard & Poor's, on an annual basis or as reasonably requested, any information necessary to maintain the assigned rating on the bonds unless the housing agency has agreed to provide the information. This includes information on the periodic delinquency, foreclosure, and prepayment experience, as well as the issue's financial status; and
- The trustee covenants in the indenture to apply for the cash advance (if applicable) if the servicer has failed to do so when appropriate, and to assume servicing if the servicer is unable to perform.

Administration of mortgage assets

To assess management capability in the administration of mortgage assets, Standard & Poor's generally examines the participating entity's volume and experience in the origination or servicing of mortgages. This capability is strengthened if all of the lender/servicers comply with Fannie Mae/Freddie Mac and/or FHA/VA standards.

In MRB issues with a large number of participating lender/servicers, program administration is an especially important rating concern. Although the trustee is ultimately responsible for the operation of the program, for most local issuer transactions, a master servicer, acceptable to Standard & Poor's, is needed. The master servicer monitors and evaluates the performance of each lender during the origination period. Following the underwriting of a mortgage, the master servicer monitors and evaluates the performance of each servicer, and recommends replacement of servicers, if appropriate. Most HFAs perform this function for their issues.

Administrator responsibilities

On a monthly basis, the administrator should review each servicer's escrow records to reconcile escrow balances, and should monitor delinquencies and foreclosures. The administrator also should ensure that all claims are filed in a timely and accurate manner under the various insurance policies, including the advance claims endorsement.

Finally, the administrator should collect information from the servicers and submit reports to the trustee pertaining to the mortgage loans, as well as to monies remitted to the trustee by the servicers.

Multiple Mortgage Rate Prepayment Runs

Generally, for nonparity, stand-alone bond financings where mortgages are originated at two or more different rates, cash flows should be run reflecting the prepayment spreads expected according to the rating level and mortgage interest rate. Prepayments will occur for both voluntary and nonvoluntary reasons. Voluntary reasons include sale of the home due to a job change or desire to be in a larger home, as well as refinancing the mortgage at a lower rate of interest. Involuntary reasons include default and foreclosure of the mortgage loan.

At any given rating level, as the rate on the mortgage loan increases, the rate of prepayment also increases. This reflects the fact that the voluntary prepayments are expected to rise. Holding the interest rate constant, prepayments will also increase as the rating level increases. This reflects the higher level of delinquencies and defaults associated with the higher rating level.

The table outlines the expected prepayment rate quoted in PSA for each rating level and mortgage rate combination. When the mortgage rate used in a bond financing falls between two numbers on the chart, the rate for the high rate loan should be rounded up and the rate on the low rate loan should be rounded down. So, if an issuer plans to offer mortgages at both 6.35% and 7.25% and it is seeking an 'AA' rating, the issuer would use a prepayment speed of 466% PSA for the 7.25% mortgage loans and 196% for the 6.35% mortgage loans.

Mortgage servicer responsibilities

In the typical MRB structure, mortgage servicers are required only to remit mortgage revenues to the extent that they are collected. If a mortgagor's payment remains delinquent, the servicer is required to undertake further steps to collect. The servicer also must apply for advance claims payments under the appropriate insurance policy or proceed toward foreclosure if applicable.

Standard & Poor's reviews the track record of each servicer as it pertains to originations, delinquencies, foreclosures, insurance claims processing, and claims denials upon the rating of a new resolution. Generally major servicers have sound procedures to track loans and process claims. Servicers with negative track records in one or more of these areas may be requested not to participate in the program, although this is uncommon.

FDIC regulations concerning the payment of insurance benefits limit the $100,000 FDIC benefit on a mortgage servicing account to $100,000 per investor, rather than $100,000 per account. This has an impact on all single-family, whole-loan deals. If an investor has an interest in one or more servicing accounts or has another account at the servicing institution, then all of these accounts would be aggregated in calculating the insurance benefit for that investor. Standard & Poor's cannot be assured that immediate remittance to the trustee of amounts in excess of $100,000 will still leave the servicing account whole in the event of a servicer failure. This concern needs to be addressed by the issuer on all single-family, whole-loan financings.

Cash flow administration

Operation of an MRB issue's cash flow depends on adequate cash flow administration. This function includes executing investment transactions and investment agreements, managing cash to maximize interest income, and identifying prepayments and appropriate bonds to be called from prepayments. This function should be carried out by the agency or capable third party overseen by the issuer. ■

Single-Family Second Mortgage Loans

Bonds secured by second mortgage loans originated to low-and moderate-income persons are eligible to receive ratings as high as 'AAA', depending on the credit supports and levels of over-collateralization used to back the bonds. Rated second mortgage bonds typically would be used for down payment assistance and closing costs as opposed to cash out mortgages for consumer purposes. Bonds backed by second mortgages need higher loan loss coverage than first mortgages because of the higher probability of foreclosure and the lack of recoverable assets in the event of foreclosure. For example, loan loss coverage for second mortgage bonds rated at the 'A' rating level would start at 25% and could climb beyond 48%, depending on characteristics of the loans and other factors.

Standard & Poor's Ratings Services will apply the same standards when determining loan loss coverage for second mortgages whether rating programs supported by only second mortgages or programs with first and second mortgage collateral. The evaluation is derived from Standard & Poor's first mortgage criteria and includes:

- Credit characteristics of the mortgage loan pool;
- Reserve funding;
- Bond and legal structure; and
- Cash flow sufficiency.

Credit Characteristics

The higher credit coverage for second loan bonds results from key elements that increase the risk of foreclosure of second mortgages, including the following:

The subordinate nature of the second mortgage pledge

Second mortgage lenders have a subordinate lien on the assets pledged for repayment of the first and second mortgages. Default on the second mortgage does not affect payment of the first mortgage, whereas default or foreclosure on the first mortgage results in the same on the second mortgage. In the event of foreclosure, the order of priority requires that any proceeds generated from a sale go first to the first mortgage lender. This could leave the holder of the second mortgage with no funds for recovery, resulting in a loss severity of 100%. Furthermore, payment interruption on the first mortgage must be remedied before payment can go toward the second mortgage.

Combined loan to value (CLTV) ratios in excess of 100%

Second mortgages add debt associated with a residence, frequently bringing the CLTV above 100%. The financial pressure resulting from the additional leverage leads to mortgage delinquency and foreclosure more frequently.

A lack of underlying collateral or mortgage insurance

Bonds supported by first mortgages have numerous assets behind them. The value of the residence itself, mortgage insurance or guarantees, mortgage-backed securities, and first priority in the event of default and foreclosure provide security to bondholders. Second mortgages generally have only the value of the physical residence for support, but if that value does not surpass the amount outstanding on the first mortgage, the second mortgage is essentially an unsecured loan.

Rating Methodology

Standard & Poor's rating criteria for second mortgage loan bonds focuses on the credit characteristics of the total mortgage loan program. Since loss severity for second loans is assumed at 100%, Standard & Poor's criteria for first mortgage loans is used to determine foreclosure frequency rates, given such factors as the property type and loan (fixed, adjustable rate, among others), geographic dispersion of the loan pool, and the CLTV. In addition, Standard & Poor's analyzes historical delinquency and foreclosure rates, management oversight capabilities, and underwriting and servicing standards. Standard & Poor's will not necessarily distinguish between state and local programs, as many local programs may be similar to statewide programs.

The strongest second mortgage programs will be issued in large and heavily populated areas that will have greater geographic and economic diversification, will benefit from experienced loan and program oversight, use approved HFAs as servicers or servicers evaluated by Standard & Poor's, and have CLTV around 100%. As CLTV increases or any of the other elements deviates from the above, the transaction exposes bondholders to increasing risk, resulting in higher loss coverage. For example, a 115% CLTV pool in a small state could have a loss coverage level of 45% for an 'A' rating and 56% for a 'AA' rating. A 103% CLTV pool in a large state could have loss coverage of 27% for an 'A' rating and 33% for 'AA'.

Origination

The standard high quality, least risky first mortgage portfolio consists of 30-year level-pay, fixed-rate, first-lien, fully amortizing mortgages on single-family, owner-occupied detached residential properties. Standard & Poor's considers rehabilitation loans, construction loans, second-or third-lien mortgages, bought-down mortgages, and tiered-payment mortgages to be significantly riskier than 30-year level-pay loans.

As with first mortgage programs, the portfolio's origination area is crucial to determining loss coverage. Origination areas may be categorized as large state, small state/large county, and small county/city. Many of the issuers of second mortgage loans are local or regional entities. For them to achieve an origination designation above small county/city, they must provide evidence of the number of and likely dispersion of those loans.

Servicing

Standard & Poor's will evaluate servicer responsibilities and capacity as reflected in provisions in bond and loan documents. The strength of servicers may be assessed through several channels, including designation through Standard & Poor's Servicer Evaluation. Standard & Poor's will consider an organization's background, internal controls, loss mitigation techniques, staffing, systems, key administrative functions, financial profile, and compliance with applicable laws, regulations and industry standards. Optimally servicing of the first and second loans is done concurrently, with one payment from the borrower covering both mortgages.

Standard & Poor's will not look for higher loan loss protection on programs that have separately serviced first and second mortgages in contrast to those where the servicing and billing combine the first and second mortgage as long as both servicers are acceptable.

Management and oversight of program

Supporting the previous item is the issuer's ability to properly administer and manage a second mortgage program. In assessing the organizational capacity, Standard & Poor's will review an issuer's experience with single-family mortgage programs and familiarity with second mortgages. State HFAs typically have more expertise with whole loan programs, of which second mortgage structures are one type, so Standard & Poor's may give more weight to a state agency than to a local issuer. State HFAs often have their own servicing departments and experience working through lenders and directly with borrowers. The added oversight, technology, and experience that some state HFAs possess can be a factor in establishing loss coverage.

Reserve Criteria

Reserve funding for second mortgage loan bonds is used to cover potential loan losses and liquidity needs. Standard & Poor's assumes no foreclosure proceeds are available for the second lien holder.

Therefore, loss severity for second loans is 100%, resulting in foreclosure frequency percentages, which are rating specific, as the determinant for reserve funding. Foreclosure frequency levels will be adjusted from rating-specific levels based on the loan type, dwelling type, loan to value ratio, borrower quality, servicing method, or other potential strengths or weaknesses of the mortgage pool. Once loss coverage is established as indicated above, cash flows must show that the transaction can withstand such losses through bond maturity. Reserves can be funded in various forms, such as through over-collateralization, capital reserve funds, pool insurance policies, or evaporation of assets as demonstrated in cash flow scenarios. Further explanation of these methods is found in the single-family whole loan criteria.

Legal Provisions

Standard & Poor's will focus primarily on the following legal provisions:

Flow of funds

In evaluating an issue's flow of funds, two concerns should be addressed: The release of funds and the use of surpluses. With some exceptions, the flow of funds should be closed for all local issuer transactions, with all surpluses being used to call bonds. State agencies may use an open flow of funds if structured properly, and a cash flow certificate (requiring the same scenarios as were originally provided at the time of initial issuance) is provided each time funds are released. In both cases, a 2% liquid reserve should be replenished through the flow of funds prior to any release of funds. In addition, legal provisions should give first priority to the payment of debt service, then to payment of insurance premiums, with all other expenses subordinated and capped.

Second lien

The pledge of the second mortgage and revenues from the loan to bondholders should be clearly stated and described in the bond documents. The purpose of the second mortgage is to establish an enforceable right to cash flows and any other pledged property, in the event of a default. Standard & Poor's will review second mortgage documents to ensure the creation of the second lien.

Cash Flow

Cash flows should meet the same standards as first loans. Please refer to the criteria on single-family whole loans for cash flow guidelines. ■

Single-Family Mortgage-Backed Securities Programs

Issuers use Ginnie Mae, Fannie Mae, and Freddie Mac single-family mortgage-backed securities (MBS) in housing bond structures to securitize pools of single-family mortgages. These transactions are eligible for a 'AAA' rating, based on the guarantee on the MBS by Fannie Mae, Ginnie Mae, and Freddie Mac, which have direct or implied support of the U.S. government.

The loans in the MBS pools carry insurance from private mortgage insurers or the Federal Housing Administration (FHA), USDA Rural Development (RD), or Veteran's Administration (VA) government guarantee programs. While Freddie Mac and Fannie Mae securitize all four types of loans, the Ginnie Mae program limits the mortgages it secures to FHA, RD, and VA. However, much of the rating criteria for each MBS program are the same. Often, bond issues incorporate the use of at least two and sometimes all of these securitization programs.

For new money issues, it is typical for bond proceeds to be deposited with the trustee in an acquisition fund. Then, various lenders originate single-family mortgages according to program origination guidelines established in the financing documents. These mortgages are "warehoused" by a master lender. When the master lender has sufficient mortgages, Ginnie Mae, Fannie Mae, or Freddie Mac MBS are issued by the lender. The trustee gives the lender the corresponding amount of bond proceeds from the acquisition fund in exchange for the MBS. Accrued interest may be paid to the lender in one of two ways. The trustee can return the accrued interest to the lender on the first date after the security's issue date that the trustee receives a principal and interest payment on the security. Alternatively, the accrued interest may be paid from the acquisition fund or other trust fund monies on the date that the security is acquired. The trustee may hold the MBS in physical possession or in book-entry form. Ginnie Mae securities typically are held in book-entry form.

The trustee may purchase an MBS with monies in the acquisition fund only after verifying the following:

- After acquisition, the sum of the outstanding balance of the securities plus all fund balances (excluding the rebate and expense funds) equals or exceeds the amount of bonds outstanding;
- The security bears interest at the pass-through rate specified in the bond documents and matures by the date specified; and
- The trustee will have a first perfected security interest in the security after purchase.

Such verification guarantees that sufficient revenues will be available to meet future debt service and expenses and that asset coverage will be maintained. The process of converting single-family whole loans into MBS continues throughout the acquisition period. Any monies remaining in the acquisition fund at the end of the period are used to redeem bonds, unless the issuer seeks an extension with prior written notification to Standard & Poor's Ratings Services.

Cash Flows

All mortgage payments shown in the cash flows should reflect the pass-through rate of the respective MBS, which is the mortgage loan rate net of servicing and guarantee fees. In addition, fees to be paid for trustee and rebate analyst services, issuer fees or any other fees as outlined in the trust indenture must be reflected. Cash flows should show that assets under the program are at least equal to liabilities until bond maturity or earlier redemption. Revenues must be sufficient to meet all scheduled debt service payments on a timely basis.

Cash flow runs must assume full delivery of the MBS on the least desirable origination date permitted under the bond documents. This origination date is determined by comparing the MBS pass-through rate to the investment rate to be received on the acquisition fund. If the pass-through rate exceeds the acquisition fund rate, last-day origination is assumed. If the acquisition fund rate exceeds the pass-through rate, first-day origination is assumed.

The cash flow scenarios that should be provided are full origination of mortgage loans with 0% prepayment, rapid prepayment, and non-origination of all mortgages. The non-origination run should assume a full redemption of bonds on the date specified in the bond documents in the event origination of mortgages does not occur. A rapid prepayment run is necessary for all 'AAA' rated single-family bond issues, including MBS transactions. The rapid prepayment scenario should be prepared at a prepayment speed sufficient to redeem all bonds within two years after origination; however, depending on the mortgage loan interest rate, the issuer, and whether or not the bonds are part of a parity program, this scenario may be run at slower prepayment speeds that redeem all bonds within a longer period of time after origination, as shown:

Depending on the structure of each transaction, other cash flow scenarios may be needed. For a description of some of the more common among these as well as additional detail with regard to cash flows, please refer to the criteria, "Single-Family Whole Loan Programs." The cash flow discussion in this article includes information on treatment of variable rate debt and swaps.

The assumptions for all cash flows run should include appropriate mortgage payment lags reflecting the actual expected receipt date of MBS payments. The Ginnie Mae I program guarantees payments on the 15th day of the month; Ginnie Mae II on the 20th; Freddie Mac on the 15th, and Fannie Mae on the 25th. The form and source of coverage for credit shortfalls should be outlined in the indenture. These shortfalls may be funded in a variety of ways, including use of a bond premium, buying the MBS at a discount or an issuer contribution. Any monetary contributions must be made with funds considered preference-proof pursuant to Sections 362(a), 547, and 550 of the Bankruptcy Code.

Table 1 **Rapid Prepayment Stress Run For 'AAA' Rated Issues**

	—Years until full redemption of bonds—	
Interest rate (%)	State HFA parity program	Local HFA or state HFA non-parity program
6.50 or lower	5.0	4.0
6.51 to 7.00	4.5	3.5
7.01 to 7.50	4.0	3.0
7.51 to 8.00	3.5	2.5
8.01 to 8.50	3.0	2.0
8.51 to 9.00	2.5	2.0
9.01 and higher	2.0	2.0

Legal Documents

The criteria for MBS program documents closely coincide with the criteria for single-family whole loan issues with key analytical focus on all trustee responsibilities, additional bonds, eligible investments, redemptions, events of default, contributions for credit shortfalls, and flow of funds. Proper notification should be given to Standard & Poor's for various events including, but not limited to, extension of the acquisition period, any change to the bond or mortgage documents, or any change in the trustee or investment agreement provider.

Certain other criteria are specific to the MBS programs. For example, all MBS should be registered in the name of the trustee, held in its possession, and assigned as a first perfected security lien, free and clear of third-party claims. Selling the MBS securities at a loss should be with majority bondholder approval, and this provision cannot be changed without majority bondholder approval. Lastly, lenders and servicers should be approved by Ginnie Mae, Fannie Mae, or Freddie Mac, as applicable. ■

Property Improvement Loans

Property improvement loan (PIL) revenue bonds are tax-exempt debt instruments issued to finance certain eligible improvements to owner-occupied properties. Standard & Poor's Ratings Services rates bond programs secured primarily by single-family property improvement loans insured under the FHA Title I program, uninsured or guaranteed for full and timely payment by 'AAA' rated eligible MBS.

The FHA Title I Property Improvement Loan Program, formerly known as the FHA Title I Home Improvement Loan Program, was established by the National Housing Act of 1934 (as amended) and is one of HUD's oldest programs. The act empowers the FHA to enter into a contract of insurance with financial institutions that it determines to be eligible for such insurance.

Rating criteria for PIL revenue bond programs are similar to the criteria used for single-family MRBs. In both types of financings, issuers use bond proceeds to acquire eligible loans and the revenues generated from the resulting pool of loans are used to pay bond debt service. However, the types of loans comprising the pool, and the type of insurance protection provided are markedly different.

FHA Title I Loan Characteristics

A borrower may obtain a FHA Title I loan to finance alterations, repairs, and improvements on real property, or to finance existing structures that substantially protect or improve the property, including manufactured homes, single-family and multifamily homes, nonresidential structures, and the preservation of historic homes. For single-family property improvement loans, HUD sets the maximum loan amount under the program at $25,000, and the maximum loan maturity at 20 years, 32 days, and maximum interest rate based on market conditions. All loans should be fully amortizing and level pay. There is no equity requirement for loans over $15,000 as long as the property being improved is owner occupied and the structure on the property has been completed for at least six months before the date of the Title I loan application. The borrower must have equity in the property at least equal to the loan amount when the loan exceeds $15,000 and the property is non-owner occupied. Loans in excess of $7,500 are to be secured by a recorded lien on the improved property. FHA regulations do not require that this lien be a first lien on the property.

FHA Title I Insurance *C*overage

Insurance provided by the FHA is the principal source of credit enhancement for a Title I security. In the Title I program, the financial institution originating the loans obtains a contract of insurance with the FHA. This insurance takes the form of a reserve fund established and maintained by the FHA for the financial institution. The amount credited to each institution initially is equal to 10% of the aggregate amount of all loans newly originated or purchased by the financial institution. A Title I borrower is considered in default under the regulations if he or she has failed to make any payment due under the note and the failure has continued for at least 30 days.

Prior to acceleration of the loan, the lender must meet with the borrower to affect a cure or enter into a modification or repayment plan. Once these steps have been taken, the lender must provide written notification to the borrower that unless a cure or modification agreement is entered into, acceleration will occur 30 days from the notice date. Failure to document the above actions adequately may result in a claim denial. A claim must be filed no later than nine months after the date of default. Claims will be paid by the FHA from the lender's reserve fund. The amount of the reimbursement will equal: The sum of 90% of the net unpaid principal balance of the loan; 90% of the uncollected interest due to the date of default; and 90% of the interest computed at 7% per year on the outstanding principal balance from the date of default to date of claim submission plus 15

days; as well as uncollected court costs, certain attorney fees, and recording costs.

However, the total amount of claims reimbursed to the institution is limited to the amount maintained for each financial institution in the FHA reserve fund. The amount of FHA Title I insurance coverage will decline by the amount of claims paid or rejected by the FHA and the amount of insurance allocable to a loan that has been sold or transferred without recourse. Adjustments to a lender's insurance coverage reserve account cannot occur with the first five years of contract. After the end of the five-year (60 month) period, and on each October 1 afterward, the amount of insurance coverage in the lender's reserve account is adjusted by deducting 10% of the amount of the insurance coverage contained in the reserve account as of that date. The adjustment cannot reduce the amount of insurance coverage in the account to less than $50,000.

Should claims exceed the amount available in the institution's reserve, there is no further recourse to the FHA. Under this circumstance, the lending institution's only recourse for repayment would be to commence foreclosure proceedings if a security instrument is in place. However, as the vast majority of Title I notes typically are second, third, or fourth liens on the property, foreclosure does not guarantee that the institution will recoup its losses. Only if there are monies remaining after all prior liens have been fully satisfied can the holder of the Title I note seek payment. In areas where properties are declining in value, the chances of recovery are especially slim.

Nonrecourse vs. Recourse FHA Title I Programs

Standard & Poor's rates nonrecourse and recourse FHA Title I programs. In the nonrecourse program, all loans financed are insured under a single contract with the FHA. The insured in this case is the bond issuer, which may be a state or local HFA, and must be an FHA-approved lending institution. Claims are expected to be paid first from the insurance reserve maintained for the agency by the FHA. The second payment source is typically loan loss reserves held under the indenture. Most issues benefit from a closed flow of funds, which trap excess cash flow to build up reserves to compensate for the limitations on FHA reserve balances. Because there is no recourse to the originating lender to repurchase a defaulted mortgage loan as in the recourse program, reserves held under the indenture are necessary to maintain the rating.

In the recourse program, loans may be insured under single or multiple contracts of insurance. In either case, one or more lending institutions originate insured loans, which then are sold to the issuer, who, in turn, pledges them to the bond trustee. The loans remain insured under the lenders' contracts, so that should a default occur, the loan would be repurchased by the appropriate originating lender. The trustee has recourse to the full amount of loans purchased from a given participating lender, regardless of the amount remaining in the lender's insurance reserve.

In cases where all lenders participating in the program have long-term unsecured debt ratings or issuer credit ratings as high as the desired rating on the bonds, Standard & Poor's gives full credit to the repurchase obligation without an in-depth analysis of the institution's underlying FHA reserve or loan loss reserves held under the indenture. The rating of the provider of the repurchase agreement would be monitored as part of Standard & Poor's rating surveillance efforts. A rating downgrade of the provider would prompt a review of the rating on the bond issue and possible downgrading unless loan loss reserves held under the indenture are sufficient to maintain the rating. In programs where participating lenders are not rated or whose ratings fall below the rating on the bonds, Standard & Poor's will determine an appropriate level of loan loss reserve funding necessary to maintain the rating.

Loan Loss Coverage Analysis

Loan loss coverage for both types of Title I property improvement loan programs is usually necessary for an investment-grade rating. In nonrecourse programs, coverage must address FHA reserve's limited balance, the potential for claims denial, and the fact that the reserve may not be dedicated to the pool of loans financed under the trust estate. Under recourse programs, coverage may still be necessary based on the ratings of the lenders and the timing and amount of the repurchase obligation.

Standard & Poor's assumes that loss severity for Title I property improvement loans will be 100% at all rating levels and for most issuers. There are two reasons for this loss assumption:

- Title I property improvement loan balances are generally small in relation to the first mortgage; and
- Many Title I properties have a high combined LTV.

When these two elements exist, Standard & Poor's investment-grade loss severity assumptions show that there is always some loss to the first lien holder. Consequently, there are no liquidation proceeds available for the second lien holder.

For ratings of 'A' to 'AA' on Title I bond programs, Standard & Poor's traditionally looks for 15%—24% of original loan balance to be available as a reserve against loan losses. These percentages are based on a number of factors, including Standard & Poor's foreclosure frequency estimates

under a stress scenario for similar loans and FHA default statistics. Standard & Poor's Structured Finance group conducted a study indicating that Title I delinquencies and foreclosures may warrant reserve levels for ratings of 'A' to 'AAA' closer to 26.5%-45%. These reserves apply generally to conduit programs. The nature of programs administered by state and local HFAs lends itself to less onerous reserve levels.

However, Standard & Poor's will look for the higher reserve levels if an individual program's losses and foreclosures support the study. The FHA reserve can be counted when meeting this guideline under certain circumstances: the lender's entire FHA reserve must be dedicated to the loans made under the trust estate; the lender states the intention to file a claim on default as opposed to proceeding against the loan security; and other reserves must be available to supplement the 10% not covered by FHA. Reserve requirements may be met with cash with over-collateralization or contributions, LOCs, or over-collateralization. If over-collateralization is in the form of mortgages, Standard & Poor's will assume that 15%—24% (or if warranted, 26.5%-45%) of the mortgage assets will be unavailable, based on default.

A minimum liquidity reserve of 2% of loans also should be maintained so that bond debt service can be paid during the months between default and claims payment.

FHA Title I Program Administration

The quality of underwriting and servicing under the FHA Title I program is integral to credit quality. Standard & Poor's will review the lenders' underwriting, quality control, collections, and servicing and claims denial rate to assess the health of the portfolio and the probability of successful and timely claims payment. Standard & Poor's generally looks for underwriting procedures that are consistent with FHA regulations. Failure to comply with FHA regulations can result in loans being rejected for insurance; therefore, compliance procedures are reviewed carefully. Servicing and collection procedures are subject to the same guidelines as other single-family programs. Loan payments should be held in fully insured accounts and immediately transferred to the trustee should they exceed the insured amount. Systems should be in place to monitor loan payments on a monthly basis, and exception reports should be generated monthly to pinpoint delinquent loans. Once a loan is delinquent, procedures should be in place that are consistent with FHA regulations. Claims should be filed at the earliest possible date permitted under the program. Since claims cannot be filed after the loan has been in default for nine months, the system should have a built-in trigger to announce this final deadline. Selected loan files will be reviewed for completeness of documentation and evidence of loan compliance. This is especially important, since only on default will HUD review a loan file for compliance. The historical claims denial rate should be low. To the extent that the denial rates are excessive, less credit will be given to the FHA reserve.

A master servicer, such as a state HFA or strong local HFA, is considered a necessity in a nonrecourse or recourse program with unrated or noninvestment-grade lenders. Standard & Poor's expects the HFA to monitor the performance of the lenders and have procedures in place to remove lenders for poor performance. Prior to the rating, and ongoing, Standard & Poor's will meet with the lender or master servicer to review its procedures, the status of reserves, and portfolio quality.

PIL Revenue Bond Cash Flows

The cash flow simulations for PIL revenue bond issues are the same as those for single-family issues. All loans are assumed to have a 15-to 20-year term, unless documents clearly restrict the percentage of shorter-term loans to the amounts reflected in the cash flows. If loan payment deferments, as defined in the regulations, are to be allowed, the maximum amount of such deferments should be reflected in the cash flows. If a portion of the loans to be originated will have a lower mortgage rate than the rest of the portfolio, the source of the subsidy, and how it will be used to buy up the rate, must be reflected clearly in cash flows and documents. If no subsidy exists, cash flows should be run assuming that only the lower interest-rate loans are originated.

Finally, if any program assets are to be used to provide lenders participating in a recourse FHA Title I program with a repurchase credit, these assets should not be reflected in the cash flows. A repurchase credit is a feature of certain older Title I programs that allows a lender to repurchase a given amount of defaulted loans for less than the outstanding balance of the loan. A reserve usually is established to provide sufficient liquid funds to compensate for the credit. Standard & Poor's assumes that the full amount of repurchase credits available will be used, thus fully drawing down the reserve. Therefore, inclusion of the reserve in the cash flows would overstate revenues and assets in the worst-case scenario. ■

FHA Insured Multifamily Mortgages

The security for Federal Housing Administration (FHA)-insured multifamily mortgage-backed issues consists of several components, primarily the insured mortgage note, investments, and reserves. Standard & Poor's Ratings Services assumes that a mortgage default may occur at any time during the term of the bonds. Since the FHA's regulations and practices do not provide for immediate claims payments, reserves need to be available to pay the bonds until the claim is paid in full.

The FHA has given Standard & Poor's assurances that HUD, of which the agency is a part, provides priority processing for insurance claims involving projects financed with rated bonds. The FHA permits processing to go forward when workouts are being pursued, a concept often referred to as "dual processing," which is necessary to ensure reserve sufficiency in the event that the workout is unsuccessful. Moreover, the agency has indicated that it will act to process claims expeditiously so that final payment is received within a reasonable time frame, assuming that the trustee acts expeditiously during the assignment process. Standard & Poor's sets its reserve fund guidelines based on these representations and an assessment of the potential for delay based on actual defaults. These factors, as well as demonstrated coverage of other inherent program shortfalls defined below, enable Standard & Poor's to assign ratings as high as 'AAA' to these issues.

Standard & Poor's criteria for FHA-insured mortgages includes multifamily, hospital and nursing home programs, as well as the HFA risk sharing program.

Supports And Shortfalls

Standard & Poor's looks for coverage of the potential shortfalls cited below at bond closing to protect bondholders in case of a mortgage default and a loss of interest earnings. Credit enhancement mechanisms include cash, third-party supports, and other structuring mechanisms.

Liquidity Reserves

Reserves provide the liquidity needed to offset potential interruptions in debt service in the event that a mortgagor defaults. Bond proceeds can fund these reserves, since interest paid on mortgage insurance benefits should be sufficient to replenish the reserves.

Debt service reserve funds

Standard & Poor's has concluded that, in cash payout programs, a debt service reserve fund equal to eight months' maximum bond debt service should be sufficient, based on the following:

- Mortgage insurance is paid in two installments.
- In a worst-case scenario where the default occurs prior to final endorsement, the first portion of 70% of mortgage insurance is paid within six months of the date the notices of default and intention and election to assign are sent. HUD pays this amount following the recording of the assignment of the mortgage loan to the FHA. Bonds should be redeemed with this insurance payment on the earliest practicable date.
- Standard & Poor's assumes that the claim's remaining 30% may not be received until the six months after the first payment. This is because the trustee is required to obtain information and documentation from hazard insurers, the mortgagor, the servicer, and other third parties, and reliance on these third parties can cause delays.

A debt service reserve fund (DSRF) equal to maximum annual bond debt service is needed in debenture pay issues where the insurance claim is paid in one installment. Debentures are assumed to be received within one year of the notice of default.

Bond proceeds typically fund the debt service reserve fund, although other methods, such as letters of credit (LOCs) issued by banks rated as high as the bonds, or cash, are sometimes used. The investment of DSRFs in investment agreements for the life of the issue eliminates market risk. When the reserve is funded with bond proceeds, if the reserve is called on, the expended portion is no longer earning expected investment income. Depending on when the drawdown occurs, Standard & Poor's has found that a shortfall may be created. The shortfall may be offset by the interest component of the FHA insurance proceeds. A sufficiently high debenture interest rate, relative to the owner's mortgage coupon, can mitigate the lost earnings on the debt service reserve fund. Any shortfall that arises needs to be covered at the time of the rating.

Mortgage reserve fund

An amount equal to two months of principal and interest on the mortgage covers liquidity shortfalls immediately following a mortgage default. Standard & Poor's assumes that, although a mortgagor's payment is due on the first day of the month, the payment is not received until the last day of that month. In addition, trustees are reluctant to file an insurance claim at this time, because FHA regulations allow an additional 30-day grace period for the mortgagor to make payments due on the mortgage note.

Demonstration of a 30-day lag in the cash flows, plus a reserve equal to one month's principal and interest on the mortgage note, can cover the two months' liquidity requirement. Showing receipt of one less mortgage payment between the full funding of the mortgage note and the next bond payment date proves the cash flow lag. If the cash flows demonstrate sufficient revenues to pay debt service, no further credit support is necessary to fund the lag. However, if a shortfall exists, additional coverage needs to be in place at bond closing. The second month may be funded from bond proceeds, cash, LOC, or other acceptable credit support.

In absence of a lag, the mortgage reserve fund should contain two months' principal and interest on the note. Bond proceeds can fund one of the months, while the second should come from cash, LOC, or other acceptable credit support. The financing documents should clearly provide for use and replenishment of this reserve, because FHA insurance proceeds exclude the payment of one month's interest on the mortgage note.

Credit Shortfalls

Unlike liquidity reserves, credit shortfalls cannot be recouped. Therefore, funding for credit shortfalls should come from acceptable sources other than bond proceeds. Additionally, combined trust assets always should exceed bonds outstanding by the total amount of credit shortfalls.

The 1% assignment fee

A program shortfall can occur on FHA-insured mortgages in which the FHA pays out 99% of the outstanding mortgage balance. In such cases, at bond closing, the mortgagor or other third party contributes the "1% assignment fee"—that is, the remaining 1% portion of the mortgage to cover this shortfall.

Nonasset bonds

A structural shortfall occurs when the initial amount of bonds outstanding exceeds the outstanding mortgage amount and other trust estate funds or investments eligible for inclusion as assets. This situation results in nonasset bonds without sufficient collateral support.

Negative arbitrage

Resulting from interest-rate spreads, negative arbitrage is a common problem in new construction or substantial rehabilitation transactions. This occurs when escrowed monies earn interest at a rate lower than the mortgage and bond accrual rates. Most often, this results in a shortfall until the construction fund has been drawn down in full and commencement of amortization on the mortgage note has begun. To quantify the amount of the shortfall, Standard & Poor's assumes that 90% of the funds are drawn down one month prior to commencement of amortization. The remaining 10% are drawn down 18 months later.

Upon commencement of amortization, the cash flows should reflect a reduced mortgage payment until the 10% draw. The principal component remains the same as if the full mortgage amount were originated. The difference comes in that the borrower only owes interest on the 90% drawn from the construction fund. This draw scenario allows for the eventuality where commencement of amortization occurs prior to final endorsement of the mortgage note by FHA. To prevent a greater shortfall, it is prudent to have the construction fund investment agreement expiring no sooner than 18 months after commencement of amortization.

Another situation where negative arbitrage occurs is while the trustee holds funds for redemption during the required redemption notice period. During this time, shortfalls could occur if the funds cannot be invested at the bond accrual rate. Standard & Poor's will use the minimum notice period in the bond documents to calculate reinvestment risk coverage. This shortfall should be provided at bond closing and maintained for the life of the issue.

Cash and LOCs associated with mortgage loans

According to HUD regulations, cash or LOCs held by the mortgagee may be deducted from the insurance claim. These items have the potential to become security for the bonds. Depending on duration, purpose, and amount, they may be subject to the same requirements as the bond-related credit enhancements discussed above. In addition, documents must clearly condition release of these items only with appropriate FHA approvals.

Structural Considerations

In FHA transactions, there are several structural considerations that can have a substantial impact on the credit quality of the transaction. These

include: trustee and servicer responsibilities and compensation; legal provisions such as actions to be taken in the event of a mortgage loan default; redemption provisions and procedures governing mortgage loan advances; commencement of amortization and final endorsement, to name a few.

Project construction period

Bond proceeds are deposited in the construction fund on behalf of the issuer. Throughout the construction period, the trustee authorizes mortgage loan advances to the mortgagor in accordance with the building loan agreement. The trustee should disperse only properly endorsed mortgage insurance advances. By restricting disbursements to amounts insured by the FHA, the trustee is assured of having sufficient high-quality assets to redeem all outstanding bonds, if necessary.

During the construction period, the mortgagor owes interest at the construction loan rate on the portion of the mortgage loan principal that actually has been advanced. Failure to make a monthly interest payment on the due date constitutes a default under the mortgage note.

Note amortization versus final endorsement

Standard & Poor's regards the commencement of mortgage note amortization as the critical event in FHA-insured programs. Starting on this date, the mortgagor's obligation under the mortgage note includes repayment of principal, as well as interest on the mortgage loan.

The bond indenture should state explicitly the date that note amortization will commence, as set forth in the FHA firm commitment. The amortization schedule should reflect the principal amount of the mortgage note as initially endorsed by the FHA unless modified by the agency at final endorsement. Standard & Poor's evaluation of the adequacy of mortgage revenues to meet bond debt service payments also is predicated on these assumptions.

Failure to begin amortization on the specified date constitutes a default under the mortgage. The bond indenture should instruct the trustee to initiate the assignment process if the mortgagor does not cure such a default within the 30-day grace period.

If an issuer permits extension of the commencement of note amortization, the following provisions are necessary to simulate note amortization:

- The extension period is limited to a set period of time. In no event may note amortization be extended beyond the date three months prior to expiration of the construction fund investment agreement, unless the investment agreement is extended or minimum reinvestment rates are assumed following investment agreement expiration.
- The trustee receives cash flows provided by an independent third party. Such cash flows should demonstrate that sufficient revenues will be available to (a) pay bond debt service for the term of the bonds as originally scheduled in the projected cash flows; (b) pay all fees and expenses of the trustee and mortgage servicer; and © pay all other fees and expenses incurred by the trustee during the extension period.
- If project revenues prove insufficient to satisfy the above cash flow projections, the trustee should receive cash or an unsecured LOC in the amount of the projected shortfall. The LOC should come from an institution whose unsecured long-term debt is compatible with the rating assigned to the bonds. Unqualified counsel opinions are required for each kind of shortfall coverage: (a) if a revenue shortfall is covered by a cash contribution or LOC, the trustee must receive an opinion of counsel stating that the contribution would not be considered a preference under the provisions of Section 547(b) of the Bankruptcy Code; (b) in addition, the trustee should receive an opinion of counsel stating that the contribution would not be subject to the automatic stay provisions of Section 362(a) of the Bankruptcy Code; and all opinions of counsel should be rendered by an attorney in the field of bankruptcy who is acceptable to the trustee.
- The trustee should conclude that extending the commencement date of note amortization would not adversely affect the bondholders or jeopardize the FHA contract for mortgage insurance. Such extension also should not adversely affect the tax-exempt status of the bonds. The indenture should expressly state that extension of the date for commencement of amortization is not permitted if this is the case.

The assignment process

The mortgagor is considered to be in monetary default if a scheduled mortgage note payment is not received on the due date. Thirty days after the due date, the trustee is entitled to institute the assignment process. If a mortgage note default occurs prior to projected completion, the trustee files a claim for mortgage insurance benefits based on the FHA's initial endorsement of the mortgage note. The FHA may process the claim in either of two ways:

- The FHA may require the trustee to turn over the remaining construction fund balance. In this case, the FHA's payment of benefits is based on

the full principal amount of the mortgage note as initially endorsed.

- The FHA may instruct the trustee to retain the remaining balance in the construction fund. In this case, payment of benefits is based on mortgage loan advances made prior to the date of the default. The trustee should convert all LOCs to cash as soon as possible after the mortgagor's default. The remaining balance in the construction fund should not be used for bond redemptions until the trustee has received instructions from the FHA about the disposition of these funds. To ensure that the FHA issues instructions in a timely manner and to minimize reinvestment risk, Standard & Poor's suggests that the indenture make certain requirements of the trustee. The trustee should notify the FHA that, upon expiration of the construction fund investment agreement, the construction fund balance would be applied to the redemption of bonds. However, the FHA can request that the trustee deliver the undrawn balance of the construction fund if the trustee is notified not less than 30 days prior to that date.

The following procedures in the indenture will instruct the trustee if a monetary default occurs and is not cured by the mortgagor within the 30-day grace period:

- Once entitled to file a claim for mortgage insurance benefits, the trustee immediately notifies the HUD area office in writing that an event of default has occurred. Simultaneously, the trustee notifies the HUD central office that it intends to file a claim and will assign the mortgage to the FHA. At the same time, the trustee notifies the FHA that the assignment relates to a project financed with rated bonds and is entitled to priority processing. A schedule of bond payments and funds available to (including a statement of all reserve fund balances) make such payments is included in the notice. In addition, the trustee requests payment of the insurance benefits in cash, if applicable. Standard & Poor's receives a copy of each notice.
- The trustee immediately requests forms and instructions relating to the assignment of the mortgage. The trustee submits legal documentation within five days of receipt of the forms and instructions to HUD's Office of General Counsel for review. HUD requires the submission of a copy of the bond trust indenture or bond resolution and a bond trustee statement of all reserve fund balances accompany the claim. The trustee commences completion of fiscal documentation in consultation with HUD's Office of Finance & Accounting. The trustee should submit this fiscal documentation and any additional legal documentation for review as soon as practically possible, no later than 30 days after recording the assignment of the mortgage loan.
- Within 30 days thereafter, or any shorter period required by the FHA, the trustee files its application for insurance benefits and assigns the mortgage loan to the FHA on the recordation date set by FHA.
- Within 30 days of recording the assignment of the loan to the FHA, the trustee submits complete and accurate legal and fiscal documents to the FHA.
- The trustee may not foreclose on the mortgage. The trustee should pursue the assignment process in accordance with the above timetable, even if the indenture contains a mortgage note cure provision that allows an additional time for the mortgagor to bring the mortgage loan current. In addition, any workout procedures should not conflict with the assignment process.

The FHA requires mortgagees on projects subject to HUD Mortgagee Letter 87-9 dated Feb. 20, 1987 to request a three-month extension (the initial period) of the time to file an insurance claim if the mortgage default occurs during the prepayment lockout or penalty period. This is intended to allow the mortgagee to effect a workout in lieu of assignment. Standard & Poor's expects the trustee to proceed with the assignment process simultaneously with any workout so that in the event a workout is declared infeasible, the mortgage is assigned to FHA in a timely manner. In this case, the documents should indicate that the trustee would follow, in addition to the steps above, the procedure outlined below:

- On becoming entitled to file a claim, the trustee notifies the HUD area office of the default. Simultaneously, the trustee files a request with the HUD central office for a three-month extension to file a notice of intention and election to assign the loan (with a copy to Standard & Poor's).
- The notice of default, as well as any communications to the HUD central office, includes a schedule of bond debt service payments indicating funds available to (including a statement of all reserve fund balances) make the payments and requests priority processing. In addition, the trustee immediately requests forms and instructions relating to the assignment of the mortgage.

- The trustee submits documentation as described in the procedure outlined above.
- If 30 days prior to any interest payment date on the bonds the trustee determines that sufficient money will not be available to make the payment, it notifies HUD and requests immediate payment of mortgage insurance benefits in cash.
- If at any time during the extension period the trustee determines that a workout is infeasible, it immediately requests HUD to make such a determination and submits notification of intention and election to assign the mortgage to the HUD central office.
- In no event does the trustee consent to any workout agreement or any adjustment or revision of the mortgage insurance contract without prior written confirmation of the rating from Standard & Poor's.
- The trustee does not request an extension of the initial period unless the trustee receives written confirmation of the rating from Standard & Poor's. If the conditions for further extension are not met, the trustee immediately submits notification of intention and election to assign the mortgage to the HUD central office. If the above steps are followed, the trustee should be in a position to record the assignment of the note.

The financing documents should be clear that full processing be pursued in all workout situations. Another example of a workout is pursuant to Section 207.258(b) of the HUD Regulations, under which mortgagees have the option of accepting a partial claim payment in lieu of assignment. Under this program, the FHA recasts the mortgage into two loans: a first mortgage loan insured by the FHA, and a second uninsured mortgage loan held by the FHA. The FHA area office determines the amount of the first mortgage loan, based on the debt service that the project's estimated net operating income can support. The second mortgage, negotiated between the project owner and the FHA, is the difference between the outstanding balance of the original mortgage loan and the recast first mortgage loan. HUD regulations allow that pursuing the partial claim option will not prejudice the mortgagee's right to file for full insurance benefits and allow extension of the time to file for full insurance.

Procedures for processing of claims for projects subject to the 87-9 letter should be followed, with one exception. Extensions to file a claim not exceeding three months (or such shorter period required by the FHA) should be requested only on the trustee's decision to pursue a partial claim payment or other workout option. FHA regulations allow for a mortgage note cure to take place up until the date of assignment. To ensure that bond cash flow is not jeopardized, the indenture should contain language providing for full payment of all delinquent accounts and lost investment earnings, and verifying the ongoing financial feasibility of the bond issue.

Following commencement of the assignment process, the trustee should draw on the reserves on the next bond debt service payment date in an amount sufficient, together with mortgage revenues received prior to the default, to pay debt service due on that date. Funds covering the 1% assignment fee should be used to redeem bonds no later than on assignment. Documents should clearly state that a mortgage default should in no event trigger a default on the bonds.

Standard & Poor's assumes that, within 12 months of the default, the trustee will receive: mortgage insurance benefits equal to 99% of the principal balance of the mortgage note as of the date of default, and accrued interest on the mortgage principal from the date of default to the date of payment at the applicable FHA debenture rate. As described above, the FHA may pay mortgage insurance proceeds in two installments.

Immediately after receiving payment from the FHA, the trustee uses the mortgage insurance proceeds to redeem bonds. The trustee must carry out the redemption at the earliest practicable date allowed by the "Notice of Redemption" section of the indenture. Once in receipt of full mortgage insurance benefits, the trustee uses these funds plus those remaining in the DSRF to redeem bonds.

Trustee and servicer

To help ensure that FHA procedures are pursued diligently, the indenture and servicing agreement should require the trustee and the servicer to be FHA-approved mortgagees. Such status should be maintained throughout the life of the issue. In addition, the indenture should state that the trustee cannot resign without the appointment of a qualified successor trustee, and that the trustee will assume servicing responsibilities temporarily if the servicer is removed, resigns, or is unable to perform his duties as servicer. Standard & Poor's should be notified in the event that a successor trustee or servicer is appointed. The trustee or issuer should use its best efforts to put a successor servicer in place as soon as possible.

Standard & Poor's recommends that the servicer and the trustee be unaffiliated so that there is no problem in allocating responsibility.

The servicing agreement should state that the servicer would forward the mortgage revenues to the trustee immediately, but no later than three business

days after receipt. The servicer should invest all monies held by it in accounts fully insured by the FDIC. Amounts in excess of the insurable amount should be remitted immediately to the trustee. Under no circumstances should the servicer hold any receipt longer than three business days. This limits the exposure of lost interest income on the mortgage revenues.

Because of the increased responsibilities of FHA-insured mortgagees, Standard & Poor's looks for evidence from the trustee or HFA concerning the following:

- Experience and track record with FHA-insured mortgage loans;
- Methodology in tracking the progress of the assignment process; and
- Consultation at the time of default with legal counsel expert in the field of FHA-insured mortgage loans.

Issuer and trustee familiarity with FHA regulations and procedures and understanding of the indenture provisions relating to the trustee's actions in the event of a mortgage loan default are critical to protecting bondholders' interest in a mortgage default scenario.

Standard & Poor's has developed a questionnaire for reviewing the qualifications of trustees and HFAs participating in FHA-insured transactions. The questionnaire addresses specific areas of concern that have arisen in actual mortgage default cases.

Fees and compensation

Ongoing ordinary fees and compensation (typically those of the trustee and servicer) are to be capped in the indenture and subordinated to bond debt service. Gross monthly mortgage payments and investment earnings on bond funds can support ongoing fees. Sufficient coverage of documented fees should be shown in the cash flows. All fees should be a percentage of outstanding mortgages or bonds, and the adequacy of all fees should be verified. Some issuers prefer to set fees at fixed dollar amounts. In this case, documents should provide that fees are ratably reduced proportionate to a reduction in the principal amount of the mortgage note due to prepayments or other unscheduled reductions. In addition, extraordinary trustee fees should be covered at all times, particularly prior to releasing funds from the program, except for redemptions. They also should be covered before reduction and release of all credit supports, except for negative arbitrage. Such fees should be sufficient to cover for legal and administrative fees and expenses incurred during default proceedings. The documents should provide for the trustee's access to these fees in a mortgage default scenario and cash flows should show the availability of such fees in the carry forward balance.

Redemption provisions

Standard & Poor's will review redemption provisions in the mortgage note and trust indenture for consistency and to ensure that the mortgage note and bond payment schedules remain in balance. Mandatory redemptions are needed to address cash inflows due to mortgage prepayments and insurance proceeds. Standard & Poor's looks for redemptions resulting from:

- Monies remaining in the construction fund, on final endorsement, to the extent that the mortgage note is less than the initially endorsed mortgage;
- Proceeds received from casualty or hazard insurance or a condemnation award not used by the mortgagor to repay or restore the mortgaged property;
- FHA insurance proceeds received after filing a claim on a mortgage note default, including accrued interest paid on the claim, and the principal amount of debentures on their maturity;
- Monies in any mandatory sinking fund;
- Monies available from the ratable reduction of the debt service reserve fund when applicable.

If optional redemptions are permitted in the mortgage note, the trust indenture should include a corresponding redemption. If redemptions are included for excess monies remaining in the revenue fund on each bond payment date, Standard & Poor's will look to see that bond cash flows reflect the redemption. The trust indenture should include coverage of all shortfalls, including any mortgage payment lags provided in the bond cash flows. Such redemption should also provide that at least a $10,000 carry-forward amount ($5,000 for issues of less than $1 million) remain in the revenue fund subsequent to release of excess funds.

In almost all cases, a proportional reduction in debt service (strip call) is necessary when the bond structure provides for more than one term bond, current interest serials, capital appreciation serials, or mandatory sinking fund term bonds. In all cases, the indenture should provide for a specified redemption notice period. All redemptions from prepayments and mortgage insurance proceeds should be at the earliest date practicable. A possible exception is for optional prepayments, if provisions are made for coverage of accrued interest to the date of redemption. In any event, sufficient accrued interest to the date of redemption should always be included in the redemption payment.

Cash Flow Analysis

Standard & Poor's analysis of cash flow projections for FHA-insured financings addresses two issues: cash flow sufficiency and consistency of documented representations with those made in the cash flow projections. The cash flow runs demonstrate that the mortgage revenues and interest earnings generated by the transaction are sufficient to meet scheduled debt service payments on the bonds and fees. Cash flow analysis should include information on the expected revenue stream and the anticipated bond structure. This information comes from several statements and schedules, as follows:

Assumptions statement

The assumptions statement should include the dates for the initial FHA endorsement, commencement of mortgage note amortization, and the first principal and interest payments on the bonds. It also should include relevant interest rates for the bonds (including the true interest cost), investments, the mortgage note, and the applicable FHA debenture rate for the property. The amount of one month's principal and interest on the mortgage note and whether the cash flows are lagged.

The last piece of information on the assumptions statement should be a table of sources and uses of funds as of the closing date. All sources of funds, including bond proceeds, accrued interest, premiums, and cash contributions, should be itemized. This table also should outline the amounts deposited to the construction fund, the debt service reserve fund, the mortgage reserve fund, and the revenue fund at bond closing.

Cash flow schedules

After reviewing all of the input assumptions, Standard & Poor's analyzes the "base case" cash flow run, which assumes the mortgages and bonds reach scheduled maturity without any prepayments. The bond debt service schedule should clearly define maximum annual debt service, consisting of the total of the highest two consecutive semiannual periods, so that Standard & Poor's can compute debt service reserve fund sufficiency.

A mortgage amortization schedule should be included, which demonstrates the monthly payment schedule from commencement of amortization to maturity.

The revenue schedule is a compilation of information previously generated in other schedules. Total revenues add up mortgage revenues, construction fund earnings, investment earnings on all funds, and other contributions.

The cash flow summary and the asset-to-liability parity schedule also consist of information generated in prior schedules. The cash flow summary is total revenues minus total fees and expenses minus debt service payments for each semiannual period. If documents provide for fees set at a fixed dollar amount, which are not proportionately reduced for prepayments, Standard & Poor's will request a stress run. The run must demonstrate that if a prepayment of 90% of the mortgage note occurred, debt service on the bonds and the full set dollar amount of the fees are paid in full from remaining revenues. In evaluating the cash flow simulations, Standard & Poor's ensures full coverage of debt service and fees. If a positive balance exists at the end of each period, then there is sufficient cash flow coverage. Some issues provide for release of excess monies at the end of each payment period. In such an open flow of funds, these monies must be shown in the cash flow summary as leaving the issue or not carried forward and counted as revenues in the subsequent period. Extraordinary trustee fees must be provided for as described earlier. In addition, a carry forward balance of $5,000-$10,000 should be provided.

The asset-to-liability parity schedule divides total assets (the outstanding mortgage balance, reserve funds, plus all excess fund balances) by total liabilities (the dollar value of all outstanding bonds). Unless the 1% assignment fee is covered separately, the issue always should be at 101% or greater parity, if 100% of the outstanding mortgage balance is used in this calculation. If 99% of the mortgage balance is used, 100% or greater parity is acceptable. Assets used to cover other shortfalls, such as the one-month's interest not covered by the FHA in a default situation and extraordinary trustee's fees, should not be included as assets.

Cash flow simulations

In new construction or substantial rehabilitation transactions, cash flow simulations should simulate a worst-case draw scenario, in other words, the least favorable time for drawing on the construction fund to originate the mortgage. The interest rate earned on the construction fund is compared with the mortgage rate during construction. If the construction fund rate is less than the mortgage rate during this period, cash flows should show the mortgage being funded at the latest possible date. This is referred to as a slow draw. The drawdown date under a slow draw is one month before the commencement of note amortization. A slow-draw scenario allows Standard & Poor's to verify that, should construction delays occur, the trustee has sufficient monies to pay regularly scheduled bond payments and to redeem all bonds in the event of a nonorigination of the mortgage note.

If the relationship between the rates were reversed, with the construction fund rate being greater than the mortgage rate during construction,

a fast-draw scenario would be requested. In a fast draw, the mortgage would be funded in its entirety at bond closing. According to this formula, the cash flows will show the least amount of interest earnings or revenues that could be expected before the mortgage note is finally endorsed.

Debenture Pay Programs

Standard & Poor's criteria for debenture pay programs differ from the cash program in three ways. First, unlike cash pay programs, debentures are delivered at one time instead of in two installments. Debentures cannot be expected to be received before 14 months after default. Therefore, reserves should be sufficient to cover this time period.

Second, in addition to the base case run, Standard & Poor's reviews a full set of cash flow runs depicting a mortgage note default at specified dates. The default projections requested are a function of the bond structure. Ideally, for any structure, Standard & Poor's would like to receive one set of cash flows that demonstrate the default occurring at the worst possible time in the life of the bonds. If this is not possible, the following conditions should be met. If the issue consists of one term bond with anticipatory sinking funds, two default scenarios should be submitted. One assumes a default at the commencement of note amortization, and the other a default 19 years prior to final maturity of the bonds. The second scenario provides for the bonds to be paid off without the benefit of the maturing debentures. If the issue consists of multiple-term bonds, serials, or one-term bond with mandatory sinking funds, cash flow projections should assume a mortgage note default on every bond payment date.

Finally, the FHA pays interest on its debentures only on January 1 and July 1 of each year. Therefore, in a debenture payout issue, the bond payment dates should be scheduled to correspond with the FHA's payment dates. In addition, cash flows should assume receipt of debentures 14 months after the first mortgage payment was due with interest at the debenture rate paid through the January or July prior to the date the debentures are issued. Subsequent to the first payment, six months of debenture interest can be shown on January 1 and July 1 of each year.

In some circumstances, HUD may indicate in writing that claims will be paid in cash, as opposed to debentures, or a combination of cash and debentures. As long as the legal structure of the transaction supports a cash payout, Standard & Poor's will assume the same. If the possibility exists that payment could still be made in debentures for any reason, reserves should be sufficient to cover a debenture payment scenario, and cash flows should reflect sufficiency for both payout options.

Debenture lock

Issuers of tax-exempt debt who financed FHA-insured hospitals and housing projects in a high interest-rate environment have used the debenture lock mechanism. Because of tax restrictions, issuers were prohibited from issuing bonds to cover costs of issuance for the refunding bonds, resulting in nonasset bonds.

Coverage of non-asset bonds was ensured as a result of a written agreement entered into prior to bond closing, under which the FHA agrees to pay claims in 20-year noncallable debentures. In some situations, the debenture lock is only in effect for defaults occurring prior to the date parity is attained, after which time, claim payment reverts to cash pay. In a default situation, the debenture's interest rate, which was set when yields were high, should be high enough to cover the significantly lower interest rate on the bonds.

HFA Risk Sharing Program

The HFA Risk Sharing Program differs from full insurance programs in several key areas that affect the amount and timing of claims payment, as well as the claims process. The rating criteria differs in the following key areas:

Reserves

Based on FHA regulations and factoring in delays and permitted extensions, Standard & Poor's has concluded that 180 days' coverage provided by a debt service reserve fund (DSRF) will be sufficient for strong issuers to provide an appropriate cushion for 'AAA' rated debt. In addition, cash flows should be run with a 30-day lag in receipt of mortgage payments. The lag provides the liquidity needed to cover for late payments without triggering a tap on reserve funds. In a default situation, the lag also

HFA Risk Sharing

The HUD risk-sharing program enables state and local housing finance agencies (HFAs) to act on behalf of the FHA in issuing mortgage insurance commitments on multifamily housing loans. Agencies share risk with the FHA in return for delegated, as well as customized, underwriting. Although the risk-sharing program requires reimbursement from participating agencies, the program is a full insurance program, mandating full payment by the FHA before reimbursement.

HUD designed the risk-sharing program to enhance timeliness of claims payment by eliminating the FHA's traditional claims-paying delays and simplifying the process. Paperwork requirements have been reduced, and financial audits are carried out after the initial claim has been paid. The risk-sharing program allows for claims to be paid in an amount equal to 100% of the mortgage note, with interest paid at the mortgage note rate. The FHA mandates that this payment be used to retire bonds within 30 days of receipt. The full accounting process and determination of the final claim payment, which determines the amounts the agency and the FHA ultimately will pay, take place after bondholders have been paid in full.

provides an additional 30 days' coverage during the FHA's grace period. Although the loan is in default once the payment is missed, the FHA requires a 30-day grace period before a claim can be filed. These reserve levels assume that the agencies file a claim at the latest date permissible under the HUD regulations (unless an extension is granted), which is 75 days after default.

Additional reserves that may be called for would be for reinvestment of insurance proceeds during the call notice period under the bond documents. Also, for bond issues where the DSRF is funded with bond proceeds, if the reserve is called on, the expended portion is no longer earning expected investment income. Depending on when the drawdown occurs, Standard & Poor's has found that a shortfall may be created. The shortfall may be offset by the interest component of the FHA insurance proceeds. However, since the interest component is based on the mortgage rate under the risk-share program and not the FHA debenture rate, Standard & Poor's has found this shortfall more common than under the regular FHA insurance programs. Sufficient funds need to be available to pay bondholders in full assuming that the entire reserve fund is hit. The shortfall can be covered by funding at bond closing or by review of a full set of cash flow runs depicting a mortgage note default at specified dates. Two base cases should be run. Both cases should default the issue immediately after final endorsement. However, the first case should show receipt of the HUD payment two weeks after the default. The second should show HUD's payment six months after the default. The weaker base case should be expanded by simulating a default on the first of each month for a one-year period. Additional default runs may be requested for the worst possible time in the life of the bonds, usually indicated by low or declining parity. Such default simulations should show the ability to redeem all bonds in full, assuming bond redemption 30 days after receipt of benefits.

Under the program, HUD permits extensions of up to 180 days from default upon request. Additional extensions are possible in situations where the HFA certifies that a bond refunding or mortgage refinancing is in the works, as well as a change in ownership that will result in a mortgage cure. The simplified claims payment procedures clearly allow agencies more flexibility in pursuing these options while keeping bonds current. However, Standard & Poor's cannot anticipate that a six-month reserve will always be sufficient in these cases. Therefore, agencies desiring more flexibility in filing claims should include conditions to filing extensions in the bond documents. Suggested conditions should include:

- Determination of the latest date for filing the claim;
- Verification that reserves or additional deposits are sufficient to pay bonds, assuming that payment from the FHA is received 180 days after the date of default plus the number of days in the extension period; and
- Receipt of the FHA approval in writing.

Assignment process

The assignment process is as follows:

- Notice of default status on multifamily projects must be filed within 10 calendar days after date of default;
- Above form must be submitted monthly until application for initial claim has been filed or HUD waives requirement;
- Application for initial claim payment and payment information form must be submitted within 75 calendar days of the date of default;
- Standard & Poor's should be copied on all forms submitted to and received from HUD;
- Before accepting partial payment of claim, majority bondholder approval should be received and notice sent to Standard & Poor's;
- Provision for claim payment to be used to redeem bonds within 30 calendar days of receipt, with wire transfer of excess funds to HUD 30 days thereafter; and
- The HFA debenture must be issued within 30 days of initial claim payment, or such other date as approved by HUD.

Cash flows

Standard no default cash funds should be provided consistent with the fully insured FHA program. In addition, a default scenario should be provided demonstrating that bonds can be redeemed in full should a mortgage loan default occur on the first payment date, assuming a six-month period to receive insurance proceeds, investing funds for redemption during the notice period, and redeeming bonds on the date set forth in the bond documents. ■

Ginnie Mae, Fannie Mae, And Freddie Mac Multifamily Securities

Standard & Poor's Ratings Services rates multifamily housing transactions supported by mortgages guaranteed by Ginnie Mae and Government Sponsored Enterprises (GSEs), such as Fannie Mae and Freddie Mac. In these structures, Ginnie Mae, Fannie Mae, or Freddie Mac issue and deliver to the trustee an MBS in exchange for the mortgage loan. Over the past few years, however, Fannie Mae and Freddie Mac have typically provided their support in the form of standby and direct-pay credit facilities rather than MBS. Ginnie Mae continues to issue MBS in the form of permanent loan certificates (PLCs) or construction loan certificates (CLCs) that convert to PLCs for substantial rehabilitation or new construction projects. Mortgage payments on the MBS, or payments from the credit facilities, are the principal source of credit protection for the bonds and pay debt service and all program expenses.

MBS Programs

Ginnie Mae, Fannie Mae, and Freddie Mac are obligated to make payments under the certificate or credit facility to the trustee, regardless of whether payments are actually made on the underlying mortgage loans or bonds. Ginnie Mae and Fannie Mae guarantee the timely remittance of principal and interest on the MBS and credit facilities. Freddie Mac only guarantees timely payment of interest and ultimate payment of principal on MBS, with the exception of the Freddie Mac Gold program. Generally, Freddie Mac guarantees that principal on the participation certificate will be received within approximately one year of the scheduled due dates. This one-year lag in principal must be addressed by funding a reserve in the issue or lagging all bond maturities by one year. Other alternatives may be discussed on a case-by-case basis.

From a rating perspective, Freddie Mac and Fannie Mae programs are very similar in many respects to the Ginnie Mae programs outlined below, and the criteria should be used when structuring Freddie Mac and Fannie Mae transactions. With regard to payment receipt dates, Freddie Mac MBS are assumed to be received on the 20th of the month (the 16th if book entry form) and Fannie Mae securities on the 25th of the month. In Ginnie Mae programs, payments are assumed to be received on the 20th of the month, although Ginnie Mae pays on the 15th. Standard & Poor's assumes an additional five-day lag in the cash flows for Ginnie Mae MBS, because MBS payments are not made directly by Ginnie Mae. This is not the case for Fannie Mae and Freddie Mac, whose payments are made directly. There is an additional 30-day payment receipt delay at the onset of all Freddie Mac programs, which must be addressed. Funding for these credit shortfalls should be clearly indicated in the indenture and in the cash flows. (Note: Standard & Poor's defines a lag as a delay in payment that is in addition to the normal arrearage—the time period encompassed from the date of origination until the first scheduled payment.)

Direct-Pay Facilities

Fannie Mae and Freddie Mac provide credit and liquidity support for fixed and floating-rate bonds. Fannie Mae and Freddie Mac cover for preference and stay provisions provided under the U.S. Bankruptcy code for funds paid by non-rated sources. These floating-rate transactions usually have a seven-day variable rate, where bondholders have the option to tender bonds upon seven days' notice. The GSEs are obligated to make payments under their respective facilities to the trustee in the event that the mortgage payment has not been received by a certain date. Additionally, the GSEs are obligated to cover the purchase price of tendered bonds in the event of a failed remarketing. With this bond structure, Fannie Mae or Freddie Mac pay the bond debt service directly as if it were the mortgage loan, much like a direct-pay LOC. Although not an LOC, this facility is similar to a bond LOC transaction. In this instance, the trustee draws monthly on the facility and uses the funds to pay debt service on the bonds. Cash flows are unnecessary because payments are received by the trustee prior to debt service payment dates.

Fannie Mae has modified its direct-pay facility to include a bifurcation of credit and liquidity expiration dates so that the liquidity support provided under the enhancement expires 10 years after the effective date of the agreement.

This change introduces the possibility for a tender option to occur without the necessary liquidity support in place to pay the purchase price of bonds.

To avoid this structural risk, liquidity events such as mandatory or optional tenders should be scheduled to precede the termination of the liquidity portion of the direct-pay instrument.

Fannie Mae and Freddie Mac direct-pay structures may include a mandatory tender upon substitution of an alternate credit facility without rating maintenance. This substitution could be problematic in the fixed-rate mode if the liquidity support has expired. To resolve this issue, the documents can:

- Limit substitution to the variable-rate modes;
- Provide that the credit facility portion or a liquidity facility portion will be available to back the tender;
- Indicate that credit facility expiration leads to a redemption; or
- Indicate that substitution can only occur if remarketing proceeds equal to the full purchase price of the bonds are to be on hand for the substitution to occur, otherwise the credit facility will remain in effect or there will be a redemption of the bonds if the credit facility is scheduled to expire.

These suggestions resolve Standard & Poor's liquidity concerns that could negatively affect bondholders. Standard & Poor's will continue to evaluate the direct-pay structure and legal documents to ensure the necessary provisions are in place to address this issue.

Standby Credit Facilities

Fannie Mae and Freddie Mac provide another type of credit enhancement on bond issues in the form of a standby credit facility. In this structure, the GSE is obligated to make payments to the trustee in the amount of the mortgage payment once the payment is a specified number of days delinquent. Since the GSE agreement does not cover investment earnings, all revenues must be invested in investments rated as high as the bonds. In addition, payment of trustee fees must be provided for in a no-default and post-default situation. Similar to the cash flows required for MBS as described below, standby credit facility transactions should include cash flows run with a lag to take into account the timing of the GSE's payment to the trustee, as well as the regular payment lag on the underlying project mortgage.

Ginnie Mae Programs

Under the FHA (223)(f) Ginnie Mae coinsurance program, used for rehabilitation and repair of existing multifamily dwellings, the owner completes the necessary repairs permitting the issuance of the MBS and obtains a mortgage loan on the project from the lender. At this time, bond proceeds, held in an acquisition fund by the trustee, are used to acquire the MBS. The Ginnie Mae security securing the mortgage is assigned to the trustee.

The Section 221 (d)(3) and (d)(4) programs (construction and substantial rehabilitation) and Section 232 program (nursing homes) are similar to the 223 (f) program, where all bond proceeds are escrowed until the permanent Ginnie Mae-backed security is acquired. In most 221 and 232 issues, there is a construction period in which disbursements are made, and funds are released periodically from the escrowed program or project fund. (Some 221 issues use an outside source for construction, eliminating the construction draws.) As the borrower constructs the project, disbursement draws are requested from the FHA. Because the rating is based solely on Ginnie Mae, no credit is given to the FHA-insured advance (draw) until it is securitized by Ginnie Mae. This process of converting the FHA-insured draw into a Ginnie Mae security, called a construction loan certificate (CLC), is performed by the co-insured lender, and takes about 20 business days.

The CLC bears an interest rate equal to the lower of the temporary or permanent rate established by the FHA under the mortgage note. As construction draws are made, they are converted into CLCs bearing the same interest rate and maturity. The CLCs represent full collateralization by Ginnie Mae, which guarantee timely payment of interest on the 15th of the month and stated principal at maturity. At the project's completion and the mortgage's final endorsement, all CLCs are exchanged for a permanent loan certificate (PLC), which is the long-term Ginnie Mae-backed security.

The mortgagor makes its payments to the lender on the first of each month. The lender, in turn, passes these payments through to the bond trustee by the 15th of that month (in the case of Ginnie Mae programs), representing payments on the MBS. (The mortgage rate is higher than the rate on the MBS. This differential covers the lender's servicing fee and the Ginnie Mae guarantee fee.) If the mortgage payments are not paid by the owner, or are insufficient to pay the trustee the principal and interest due on the MBS, the lender is required to pay the trustee the amount due from its own monies. If the trustee fails to receive payment from the lender by the close of business on the 15th, or the 17th if the MBS is held in book entry, the indenture should require the trustee to seek immediate payment from Ginnie Mae. Since Ginnie Mae guarantees timely payment, there is no need for a debt service reserve funds (DSRF) to cover liquidity risk.

If the mortgagor prepays all or a portion of its mortgage, this amount will be prepaid to the lender and then passed on to the trustee as a prepayment on the Ginnie Mae security. The prepayment

includes principal; premium, if any; and interest accrued through the last day of the month in which the prepayment is made.

Ginnie Mae has the option of curtailing or reamortizing the mortgage, although the latter is more common. For this reason, documents should instruct the trustee to notify Standard & Poor's of a prepayment so that the rating impact, if any, may be determined. The financing agreement should instruct the lender to notify the trustee as early as possible in the month in which prepayment is to be received by the trustee. The lender's notification enables the trustee to send notice of redemption so that bonds can be redeemed at the earliest possible date to avoid any undue reinvestment exposure. The trustee should redeem the bonds in the shortest notice period provided under the indenture. This reduces the amount of time that the trustee has to hold prepayment monies that are not earning enough interest to cover the accruing bonds. The cash flows should demonstrate sufficient asset coverage during this time frame.

Concerning optional prepayments, the prepayment penalty on the mortgage should be seasoned 91 days to avoid recapture as a preferential payment. Ginnie Mae may not cover the premium portion to be paid on the bonds in the event that it would be obligated to pass through the prepayment. This seasoning problem can be eliminated through an issue-specific letter from Ginnie Mae stating that it will guarantee the premium portion of the payment on the mortgage. Notice of redemption on all prepayments should not be made until the premium is seasoned.

Additionally, prepayment terms on the bonds need to match the prepayment terms on the mortgage. This avoids the mortgagor making a prepayment that cannot be used immediately to call bonds. Redemptions resulting from prepayments should provide that the resulting decrease in debt service on the bonds is proportional, as nearly as is practicable, to the decrease in the payments on the Ginnie Mae securities during such period. This method ensures that even if a curtailment occurs instead of a ratable reduction of future mortgage payments, debt service will still be met, as it will be structured around the prepaid mortgage terms. The trust indenture must state that the Ginnie Mae MBS is to be held by the trustee or in the trustee's name by the Federal Reserve and that the trustee has a first perfected security interest in the MBS.

MBS Cash Flows

Worst-case assumptions are used when structuring the cash flows for this program. For construction financing programs, worst case should indicate the least favorable time from a revenue-generating standpoint for drawing on the acquisition fund to acquire the MBS. For example, if the acquisition fund investment agreement earns less than the MBS, the acquisition scenario should assume delivery on the latest possible date provided under the indenture. For each day that the MBS is not acquired, more negative arbitrage is created. The maximum amount of this shortfall should be covered in one of the following ways:

- Providing an unsecured LOC or cash;
- Selling the bonds at a premium; or
- Using another ratable credit enhancement.

The method employed should be defined clearly in the acquisition section of the indenture and the financing agreement.

The submitted cash flow simulations should be run using appropriate lags and are expected to have sufficient excess assets to cover for reinvestment risk. All fees should be capped and paid from revenues or interest income, and expensed in the cash flows. If fees are expressed as a fixed dollar amount and not as a percentage reduced over time, Standard & Poor's will request a 90% immediate prepayment run. This is to ensure that the fixed fees could be paid in the event of a large prepayment. Alternatively, the fees specified in the legal documents can be ratably reduced with any prepayments. Expenses for MBS include Ginnie Mae, Fannie Mae, or Freddie Mac fees and lender fees.

For a trustee to perform its duties adequately, Standard & Poor's assumes a minimum fee of three basis points. A portion of the trustee fees may be paid outside of the trust estate, however, to the extent the trustee agrees in the bond documents to continue to perform regardless of compensation. If applicable, a rebate calculation fee should be included at a level consistent with industry standards. Reinvestment exposure is determined by calculating the reinvestment shortfall, if any, for the redemption notice period on a full prepayment of the mortgage portfolio. This calculation assumes that the mortgage prepays and is reinvested at the float contract rate or Standard & Poor's reinvestment assumption, and that the bonds are earning at their stated interest rate.

Commencement of amortization of the mortgage should be a stated date in the documents and reflected in the cash flows. Monies may be released only after acquisition of the MBS, debt service and fees are paid, reinvestment is covered, and revenues to meet the next debt service payment are captured. This release should be demonstrated through an open flow of funds in the indenture. There should be a minimum carry forward balance in each period of at least $10,000. A cash flow release test may be necessary on certain issues to ensure that the releases will not negatively affect future payment on the

bonds. As a condition of bond closing, cash flows should be verified by an independent third party. The third party can be a nationally recognized accounting firm; an expert in the field; or, in some cases, a qualified officer of the state housing agency if applicable.

On issues with multiple securities collateralizing several multifamily dwellings, the least desirable cash flow scenario should be provided. For example, if the underlying mortgages have varying rates, the mortgage with the lowest rate should be able to support the bonds, assuming that all the other mortgages prepay immediately. Lastly, it is crucial that cash flow projections are consistent with representations made in the financing documents.

A nondelivery run should be provided. If the security is not delivered by the last possible acquisition date, cash flows must show sufficient funds to redeem the bonds in whole. The redemption from nonorigination is usually on the date that is 30 days after the final acquisition date. To allow flexibility in the acquisition of the MBS, extensions may be provided for in the indenture. To ensure that an extension can be completed properly, Standard & Poor's should receive 30 days' written notification of the anticipated extension. Along with this extension notice, updated cash flows should be supplied along with supplemental documents, including the investment agreement. The documents should indicate the extended call date 30 days after the new delivery date in the event that a nondelivery is to take place. The same criteria for note amortization extensions in FHA programs apply to all the MBS programs.

To avoid the final payment being passed through to the trustee after maturity of the bonds, the mortgage should mature at least one month prior to the final bond maturity. Lastly, if a premium is paid on the bonds to fund any shortfalls created through the acquisition period, and if any parties have a residual interest in that premium, the proper legal opinions may be necessary. For cash contributions and LOCs, Standard & Poor's may request legal opinions. ■

Unenhanced Affordable Housing Project Debt

Standard & Poor's Ratings Services defines unenhanced affordable housing projects (AHPs) as public-purpose real estate supported by below-market rents. While many AHP transactions are structured with credit enhancements, unenhanced AHPs are structured and rated based on the strength of the real estate to support debt service on the bonds. AHP transactions may receive a variety of public support and may have varying rent and residency restrictions. These include Federal subsidies, such as Section 8 and Section 236, as well as military housing allowances in privatized military housing transactions.

Many public purpose properties are economically viable even without Federal subsidies through the Low-income Housing Tax Credit Program, tax-exempt bonds, exemption from real estate taxes and creative financing techniques. The unenhanced affordable housing project debt criteria, does not apply to projects that will only be partially public purpose, or can convert to market rate during the life of the bond issue. Transactions with these latter attributes are typically rated by Standard & Poor's Commercial Real Estate Group. The analysis of bonds backed by real estate focuses on real estate quality, legal structure, bond structure and reserves, and construction and lease up risk.

Real Estate Quality

Standard & Poor's assesses the quality of the real estate to judge its ability to attract targeted tenancy, compete with nearby properties, maintain structural soundness and remain financially feasible. The analysis is based on:

- A site review;
- Measures of financial feasibility;
- Depth and strength of subsidies, if any;
- Market Analysis
- Property management;
- Ownership;
- Insurance, and environmental concerns.

Site review

The site review focuses on the attractiveness and condition of the property, and its comparability and competitiveness within the market. Based on a site visit, Standard & Poor's assigns a ranking from "1" to "5", with "1" indicating new high-end market rate housing quality, and "5" indicating housing in bad physical condition, with physical obsolescence. A ranking of at least "3" is typically necessary for investment grade ratings. The review consists of the following:

- Exterior—includes the exterior of the building, parking lots, landscaping, and sidewalks;
- Interior—includes lobbies, reception areas, hallways, apartments, health and recreational facilities, laundry facilities, and on-site management office;
- Deferred maintenance—overall assessment of exterior and interior of the project. Examples of deferred maintenance would be potholes in pavement and sidewalks, peeling paint, leaking roofs, structural problems, and outmoded facilities;
- Location—includes an analysis of the neighborhood, the project's compatibility with the neighborhood, and accessibility to essential services, such as hospitals, schools, post office, playgrounds, churches, public transportation, roads, and highways;
- Economy—includes an analysis of employment sectors, economic diversity, population changes, income levels, and unemployment rates;
- Market and demand—includes comparability with nearby properties, analysis of local vacancy rates, rent trends, occupancy rates, and absorption rates;
- Tenancy—the quality and nature of the tenant base is a critical part of analyzing real estate quality. Income levels and elderly or family tenancy are two critical aspects of assessing the tenant base; and
- Environmental and hazard—includes analysis of the impact of potential environmental and hazard concerns, such as earthquake and flood risk, nearby hazardous substance sites, and presence of radon, PCBs, and asbestos.

Third party reports

Standard & Poor's will review independent third-party reports as part of the rating process. These reports should be provided before the site visit, if available.

Property condition reports

Standard & Poor's reviews property condition reports for all transactions. These reports are necessary to determine that the project has an economic life that exceeds the term of the bonds and to determine the level of deferred maintenance that must be funded at bond closing to correct major property condition defects. Property condition report criteria can be found on RatingsDirect under Criteria-Structured Finance, and at www.standardandpoors.com (look under Structured Finance Criteria, CMBS Property Evaluation Criteria).

Environmental reports

Environmental reports help determine if there are environmental issues relating to the subject properties. These reports must be completed within six months of the closing of the transaction, and comply with the Structured Finance Environmental Report Criteria. These criteria can be found on RatingsDirect under Criteria-Structured Finance, and at www.standardandpoors.com (look under Structured Finance Criteria, Environmental Criteria).

Appraisals/market studies

The appraisal for an AHP transaction should be a complete self-contained appraisal prepared by an independent appraiser who is MAI certified and be prepared in accordance with the Uniform Standards of Professional Appraisal Practice (USPAP) of the Appraisal Standards Board (ASB). The appraisal should be commissioned by the owner of real estate in a refinancing transaction or by the purchaser in the event of an acquisition financing. The appraisal should state that the purpose of the appraisal is for the purpose of valuing the property for use in conjunction with the proposed financing.

The market study may be prepared by a MAI appraiser in conjunction with an appraisal of the property. The purpose of the market study is to provide sufficient information for Standard & Poor's to determine if the project will continue to generate sufficient net cash flow to service the bonds being rated by maintaining projected occupancy and projected rents. The market study should, specifically, seek to provide specific information for the market for which the property is intended to serve, such as, low or moderate income families or elderly persons. The market study should address this issue by examining existing and anticipated demand for the specific housing market and existing and potential supply of housing units to meet this demand.

Financial feasibility

Analysis of the financial feasibility of a project involves an examination of historical and pro forma financial statements to determine the adequacy of revenues and cash flow to cover payment of debt service, funding of reserves, and operating and maintenance expenses. Standard & Poor's considers debt service coverage (DSC) to be the most valuable financial yardstick in evaluating AHPs. Adequate DSC is needed to insulate the property from such problems as rising expenses, static rent levels, and high vacancies. Standard & Poor's defines DSC ratio as annual net operating income divided by the maximum annual principal and interest payments. In reviewing DSC, Standard & Poor's will look for a scenario in which no increases in rents or expenses are assumed, as well as other stress cases that will be determined on a case-by-case basis. Each income and expense item is verified with three years of audited financial statements and through the operating history of the project.

Standard & Poor's reviews each item and may adjust them to account for inconsistency with comparable properties, to reflect the project's track record, to address aberrations in costs, or to provide a more stressful cash flow test when needed. Standard & Poor's will always assume property management fees in reviewing for appropriate DSC levels. Market management fees will be assumed for owner-managed properties. Standard & Poor's allows for underwriting expenses with a fair and reasonable property management fee above the line (that is, before debt service), and the trust indenture should provide for the payment of market rate and reasonable third-party management fees (which is usually 4%-5%, depending on the market), in the flow of funds before debt service.

Although property managers may initially agree to subordinate some or all of its management fees to debt service payments in the trust indenture flow of funds, there is no assurance that future property management firms will abide by these agreements, and likely assess a market rate fee. As such, all management fees should be calculated above the line. Standard & Poor's will always assume a property reserve for replacements in calculating net cash flow and will typically rely upon the independent Property Condition Report to provide guidance on the adequacy of reserves.

Reserve for replacements will be assumed to be the higher of, the levels outlined in the property condition report, or the following minimum levels:

- $250 per unit per year for properties that are less than 10 years old;
- $250 to $275 per unit per year for properties that are 10 to 15 years old; or
- $325 to $350 per unit per year for properties that are 15 to 20 years old or older.

Standard & Poor's views the loan to value (LTV) ratio as a secondary risk indicator. The highest acceptable LTV ratios will be for properties owned by state and local HFAs or Public Housing Authorities (PHAs) with experience in affordable housing, or for Federally subsidized properties. Lower ratios may be applicable where the public purpose nature of the ownership is less established, as with a start-up nonprofit or a for-profit entity, or where liquidation of the property is a factor in the rating.

Depth and *s*trength of *s*ubsidies

Rental and interest rate subsidies have a direct impact on project affordability, tenant characteristics, demand, and quality of real estate, among other things. The presence of such subsidies requires an analysis of the depth, duration and mechanics of the subsidies as well as termination risk. The two major subsidy programs, Section 8 and 236 are discussed in Public Finance Criteria: Federally Subsidized Housing Programs.

Pledges from local municipal entities that subsidize project income and that are used in calculating DSC (such as tax increment funds) must come from rated entities in order for the transaction to be considered for 'BBB-' or higher ratings.

Market analysis

Standard & Poor's analysis of multifamily properties also takes into consideration economic and demographic information concerning the market in which a property is located. Standard & Poor's places particular emphasis on information available from a number of sources, including the market study or appraisal commissioned for the financing. The market study or appraisal includes demographic and economic information in the area of the subject market, along with vacancy and rent trends. Standard & Poor's also utilizes independent market information, for market information such as vacancy rates and rent trends. These independent reports also provide Standard & Poor's with information on competitive projects in the subject area, allowing for a comparison of the property's performance to the actual sub market. In addition, Standard & Poor's obtains independent economic information to supplement the market study/appraisal.

Standard & Poor's also analyzes income and expenses utilizing independent third party information. These reports provide information on income and expense trends by metropolitan area and multi-family apartment type. This market information assists Standard & Poor's in the analysis of the financial feasibility of the project and the underwriting.

Property management

Efficient and effective management is necessary to ensure the financial feasibility of the property. At the time of the site visit, Standard & Poor's interviews the property manager to review experience and track record, all aspects of day-to-day project operations, and overall operating strategy, including:

- Handling of day-to-day maintenance and preventive maintenance program;
- Tenant rent collections and procedures to handle delinquencies and evictions;
- Turnover time for vacant units;
- Marketing plan and maintenance of waiting lists;
- Leasing abilities and lease renewal strategies;
- Accounting procedures to determine cash management ability;
- Regularity of property inspections;

- Management reporting and control procedures to determine ability to recognize and correct potential problems quickly;
- Past performance reviews for subject property, as well as for other properties under management;
- Annual operations and long-range capital improvement plan;
- Budgeting process and rent increase strategy;
- Communications with owner and tenants;
- Maintenance of social services appropriate for tenant population; and
- Ability to analyze changing market conditions and diagnose problems and implement solutions as needed.

Ongoing financial and management reviews by a qualified asset manager are a critical aspect of the continuing financial viability of property-specific bond transactions. The nature of the oversight varies, depending on the relationship between the owner, issuer, and property manager, as well as the organizational structure and experience of each of the parties involved.

Some local HFAs or PHAs are well equipped to manage the properties they own without additional oversight. Where the owner is relatively inexperienced, an experienced state or local HFA or PHAs could provide an acceptable level of oversight. Local HFAs or PHAs that own properties managed by a professional management company should have systems in place for ongoing reviews.

The following minimum oversight responsibilities reflect an effective level of extra protection for AHPs. Oversight responsibilities should be clearly outlined in a written plan that is part of the legal documentation:

- Regular basement-to-roof site visits, no less than annually, including unit-by-unit inspections;
- Annual in-depth reviews of management procedures;
- Monthly budget checks, occupancy reports, and delinquency checks;
- Review of audited financial statements;
- Control over release of excess funds;
- Ongoing monitoring of reserve funds and required sign-offs for use of funds; and
- Review of preventive maintenance program and adequacy of capital expenditures plan.

Ownership

The nature of the project's ownership is an important element in rating AHPs for several reasons. First, since the rating approach gives credit to the public-purpose nature of the financing, it is important to establish the public-purpose nature of the ownership. What is the owner's commitment to maintaining the project at affordable rent levels? Generally, PHAs, HFAs, and nonprofits most easily fit the description of public purpose. For-profit ownership is less likely to make the same type of representations regarding the future of the project. However, for-profit ownership could be acceptable from a rating standpoint if the public purpose was firmly established through legal documentation, such as a regulatory agreement. In addition to public-purpose dedication by the owner, Standard & Poor's looks for asset management and debt compliance capacity. Multifamily ownership and experience and financial strength are the two easiest ways to demonstrate affordable housing ownership capacity. With regard to real estate ownership structures, fee ownership and leasehold positions are both acceptable; however, transactions with ground leases must meet Standard & Poor's real estate ground lease criteria.

The second rating concern in reviewing the ownership of the project (as well as the issuer of the bonds) relates to the potential for bankruptcy. Where the owner and the issuer are unrated, or rated lower than the bonds, Standard & Poor's analyzes the legal structure of the ownership, as well as the structure of the bond issue, to evaluate the potential for bankruptcy. Three entities that typically meet Standard & Poor's standards for bankruptcy remoteness are municipalities, certain nonprofit or eleemosynary institutions, and special-purpose corporations.

The potential for voluntary and involuntary bankruptcy will be assessed through an analysis of the legal organization of the ownership, the essentiality of its services, its need to access capital markets and the purpose of its business, as well as legal opinions and the legal structure of the bond transaction.

Insurance, and environmental concerns

Since the collateral in a mortgage-backed debt transaction is tangible, it is subject to physical impairment or loss. Standard & Poor's will review all potential hazard, special hazard, casualty, and environmental risks to the property through its site inspection, and through structural engineering, special hazard, and environmental reports, as described previously. All potential exposures should be covered through reserves or insurance policies. Typical insurance policies on rated transactions include fire and casualty, boiler and machinery, business interruption, earthquake, flood, liability, condemnation, and environmental insurance.

A title update also should be provided as part of the rating package, as well as the certificate of title or the title policy. Exclusions are reviewed carefully to determine the impact, if any, on the rated debt.

Qualified insurers For investment grade ratings, the rating of the insurance providers typically have a rating by Standard & Poor's of not less than 'BBB-'. All insurance requirements are to be maintained for the life of the financing and the trust indenture should incorporate language outlining insurance guidelines.

In addition, the trustee should be named as the mortgagee on all insurance policies relating to the mortgaged property and the policies must have a cancellation endorsement that the policy cannot be canceled or materially altered without giving 30 days notice to the trustee.

Property casualty coverage The property insurance coverage provided must be at least equivalent to the "Special Cause of Loss" form, including coverage for steam pressure explosion, flood and earthquake losses, with valuation of the mortgage property based on replacement cost. The replacement cost option must include the additional costs associated with "civil or ordinance of law" requirements. The amount of coverage provided might not be less than the actual amount required to replace the mortgage property in the event of a maximum possible loss. It is the Borrower's responsibility to provide evidence of the maximum possible loss that may result from catastrophic perils insured against. The insurance may not be subject to restrictions or limitations in coverage of any kind, which result from the mortgage property being insured together with mortgaged property not securitized. All insurance policies must include an agreed amount endorsement and co-insurance must be waived. All exclusions not standard and customary to the industry are subject to Standard & Poor's review.

Business interruption insurance This insurance must provide loss of income protection resulting from direct physical loss to the mortgaged property and indirect loss which may significantly jeopardize revenue, with limits of liability sufficient to sustain expected income in respect of the mortgage property had the loss not occurred In no event should the rental loss provision be in an amount less than the annual rental income of the project. Co-insurance penalties must be waived or completely avoided.

Liability coverage The Borrower should maintain commercial general liability and umbrella coverage and limits of liability that are customary to multifamily real estate and which adequately protects the interest of the borrower and trustee, on behalf of the holders of the rated securities.

Workers compensation and statutory coverages The Borrower must carry worker's compensation insurance as required by law, along with adequate limits of employer's liability, if applicable. In addition, all other insurance coverages that the borrower is or may be required to carry by law should be provided.

Boiler and machinery Comprehensive boiler and machinery coverage is required on all mechanical equipment that would cause a disruption in revenue if rendered nonoperational. The coverage provided should cover direct losses and consequential losses that could materially jeopardize revenue.

Legal Structure

The legal structure of the bond transaction is subject to the Standard & Poor's U.S. CMBS Legal and Structured Finance Criteria located on www.standardandpoors.com.

Some highlights pertaining to real estate transactions are:

- Security must include a mortgage, with first-lien position in favor of the trustee and a net revenue pledge;
- Open flow of funds from the indenture will be evaluated on a case-by-case basis. Transactions with strong properties and very strong owners may be rated investment grade with a open flow of funds with no release test or a release test that has a lower debt service coverage level than the pro forma debt service coverage. Transactions with weaker properties and/or weaker ownership structures should open flow tests at the pro forma debt service coverage levels in order to be considered for investment grade ratings. Payment of subordinate debt also is subject to open flow requirements; Standard & Poor's should receive notice of the following events; extension of acquisition period, partial mortgage prepayment, defeasance or discharge of the indenture, new investment agreement provider, impending sale of collateral or transfer of control of the single purpose entity, appointment of successor trustee, and supplements or amendments to the bond & mortgage documents;
- Subordinate debt is acceptable, only if it is a non-foreclosable cash flow mortgage, which prohibits any remedial action; and
- Investments should not adversely affect the rating on the bonds.

Ground leases

Transactions with ground leases must meet Standard & Poor's real estate ground lease criteria. Under a ground lease, the lessor continues to own the land on which the improvements are located and leases it to a tenant, which is the borrower or owner. Standard & Poor's will review the ground lease to assess whether adequate lender protections exist. In addition, the landlord should grant the

trustee a right to cure the borrower's default under the ground lease. This gives the trustee the ability to prevent a termination of the ground lease. The real estate ground lease criteria, can be found in the Standard & Poor's U.S. CMBS Legal and Structured Finance Criteria located on www.standardandpoors.com.

Bond Structure And Reserves

Bond structures typically incorporate fully amortizing debt In addition, this debt can have bond maturities of up to 30 years, as long as the engineering report and site review indicate the structural soundness of the property for the bond term, and appropriate reserves are set aside for ongoing preventive maintenance and capital improvements.

Generally, Standard & Poor's will look for a debt service reserve fund (DSRF) equal to maximum annual debt service on the bonds, which may be funded with bond proceeds. Exceptions would be where an acceptable servicer agrees to make servicing advances in the event of temporary debt service shortfalls. Extremely high DSC may also provide sufficient liquidity to obviate the need for a separate reserve. Monies for the debt service reserve fund should be invested in investment grade securities ('BBB-' or higher), and be available to pay debt service in the event of a shortfall.

The cash flows should incorporate a 30-day lag on mortgage payments. Adequate reserves should be initially set up and maintained in accordance with the ongoing preventive maintenance and replacement schedule indicated by management and confirmed with a structural engineering report. Additional reserves may be necessary to bring the property up to environmental standards. Mortgage reserves may be provided in the form of cash reserve funds or servicing advances.

Subordinate debt

Subordinate debt is frequently needed to make the projects financially feasible. Standard & Poor's may exclude subordinate debt in its calculation of LTV. For example, if the debt is public purpose in nature, comes from governmental or municipal entities, and is a cash flow mortgage that is nonforeclosable.

Standard & Poor's will need to review the terms of the subordinate debt to ensure that it does not impair the financial feasibility of the project. Standard & Poor's will look for intercreditor agreements between the trustee on behalf of the holders of the rated securities and the subordinate lender to ensure that the rights of the holders of the rated securities to receive timely payments of principal and interest are not impaired.

Construction And Lease-Up Risk

Multifamily housing construction projects contain some degree of construction risk; that is, the possibility that the project will not be completed on time or in accordance with specifications, thus causing a delay in debt service payments. For construction transactions, the level of construction risk the project entails will be evaluated, and will be determined to be low, moderate or high. If the level of construction risk is moderate to high, further analysis will be undertaken, and could include the use of an outside construction consultant. (See Public Finance Criteria: Assessing Construction Risk)

The more significant credit risk in new housing construction transactions is lease-up risk. New projects may fail to achieve projected income levels because they cannot rent up properties to projected occupancy levels for market reasons such as excess supply due to new construction, reduced demand due to recession or the relative attractiveness of single-family home purchases compared to renting. Failure to achieve projected rents can occur for the same reasons. While multifamily rehabilitation transactions have the advantage of prior occupancy and established rental rates, loss of tenants during rehabilitation can cause delays in achieving targeted occupancy after completion of construction. History shows however, that in the affordable housing sector additional resources, such as soft second loans from municipalities, developer, syndicator and not-for-profit equity in tax credit transactions, and HFA funds, can help projects over these difficulties. In addition, capitalized interest and liquidity reserves can help tide a project over until lease up and stabilization are reached. Lease up risk must be adequately addressed for affordable housing transactions to be rated investment grade or higher.

Project Evaluations

Standard & Poor's evaluates the property and the management and assigns a project ranking from "poor" to "excellent. This ranking is a major determinant in the final rating. Standard & Poor's project evaluations are based on information in the rating process, as well as the on-site property and management review. The guidelines for project evaluations focus on the following factors:

- The evaluation assigned to the project owner.
- Capacity, experience, and track record of on-site manager
- Historical vacancy.
- Market conditions in the project area, including a review of the overall competitiveness of project in the real estate market, including existing and competing projects planned for completion in the next few years.
- Overall project design and condition.
- Adequacy and condition of amenities.
- Local, regional, and state economy.

Mobile Home Parks

Standard & Poor's Ratings Services views mobile home parks (MHPs) as a subset of bond ratings on unenhanced affordable housing (AHPs). However, there are unique issues with regard to MHPs that deserve special attention.

Transaction structures

Rating bond-financed MHPs is substantially different from rating bond-financed unenhanced multifamily projects in that, in virtually all MHPs rated by Standard & Poor's, the collateral for the bondholders is land only and not real estate improvements. Typically, the tenants in mobile home parks own their mobile homes and lease the land on which the mobile homes sit from the park owner. The tenants typically obtain a loan to buy the mobile home, and the mobile home is pledged to the lender that provides the acquisition loan. Therefore, the collateral for bondholders in rated MHP transactions is land and a pledge of the ground rent from the tenants for the mobile home park spaces. The bondholders do not have any collateral interest in the mobile homes themselves. Standard & Poor's analysis of MHP bond transactions, therefore, depends to a great extent on the asset quality of the MHP over the long term and its ability to generate a strong revenue stream.

Asset quality

One factor unique to MHPs that will be given careful attention is the size of individual mobile home spaces. Mobile home spaces should be of adequate size to accommodate larger mobile home units (i.e., at least 24 feet in width). The trend has been and will continue to be the placement of larger units (at

Site Visit and Documentation

In conducting its review of an affordable housing project, Standard & Poor's relies on a site visit to each property, a complete application including owner, property management, and oversight provider questionnaires, a review of legal documents including any loan guarantees, subsidy contracts, real estate and bond documents, investment contracts, loan information and review of specific third-party reports prepared by independent third-party professionals. The site visit will include:

- Internal and external inspection of the project, including several apartments, amenities, basement, roofs, maintenance areas, elevators and stairwells, storage spaces, garbage collections and recycling facilities, security systems, recreational facilities and grounds.
- Interviews with the prospective owner, property manager, construction planners and supervisors, and
- A tour of the surrounding neighborhood with visits to comparable properties.

The following reports should be prepared by qualified, independent third-party professionals and should be no older than six months:

- Structural engineering report prepared by a licensed engineer or architect in accordance with Standard & Poor's guidelines.
- Environmental report in accordance with Standard & Poor's guidelines, and
- A complete self-contained appraisal performed in accordance with USPAP guidelines by a MAI certified appraiser. This report should include a market and demand study prepared in accordance with Standard & Poor's guidelines.

Standard & Poor's will review the following financial, legal, and loan documentation:

- Trust indenture
- Investment agreements
- Loan agreements
- Mortgage and mortgage note
- Assignment of leases and rents
- Relevant insurance policies
- Ground lease if applicable
- Management contract
- Construction contract if applicable
- Legal opinions
- Subsidy contracts, if applicable
- Standard & Poor's owner profile and questionnaire
- Standard & Poor's property management profile and questionnaire, and
- Any other relevant transaction document.

least 24-foot doublewide units) on mobile home spaces. The ability of the park to accommodate this trend will contribute to its ability to attract and retain tenants, maximize occupancy, and, hence, support debt service on the bonds. While many older MHPs may currently have a large number of older, singlewide units (i.e., 12 feet in width), if the spaces themselves are large enough to accommodate larger units, this will partially offset the existence of a substantial number of singlewide units.

However, if existing MHP spaces are too small (i.e., less than approximately 34 feet in width) to accommodate doublewide units, this means that the singlewide units located on such spaces cannot be replaced, and this may eventually threaten the park owner's ability to market those spaces to new tenants. New, smaller mobile home units (12 to 16 feet in width) may be more difficult or even impossible to acquire in today's market given the trend towards larger units. If the park contains a substantial number of smaller mobile home spaces that can only accommodate singlewide units of 16 feet or less, we will request a market study to demonstrate that the demand for such small spaces still exists and will continue to exist in the future. If the market study determines that the MHP is functionally obsolete due to the number of smaller spaces, the MHP may not be eligible to receive an investment-grade rating from Standard & Poor's.

Bond structure

Mobile Home Park transactions rated 'BBB-' or higher may have bond maturities of up to 35 years, longer than the 30 years typical for other rated AHP transactions. Since the collateral securing the bonds in MHP transactions consists almost entirely of land, the question of useful life of real estate is not an issue. While MHPs usually include some improvements, such as clubhouses, swimming pools, and other common areas, most of the value of the project is derived directly from the land. However, the property condition report for the transaction, should demonstrate that the effective useful life of the improvements in the park is greater than the term of the bonds.

Cash flows and reserves

Standard & Poor's will assume a vacancy rate for MHP spaces at the higher of 2% of gross rental income, the park's historical vacancy rate, or the actual MHP vacancy rate in the market. We will typically rely upon the structural engineering report to provide guidance on what the appropriate reserve for replacement should be. If, however, all or a portion of the capital improvements outlined in the structural engineering report are to be pre-funded with money deposited in the replacement reserve fund at closing, Standard & Poor's will apply any such deposit as a credit towards the required on going replacement reserves.

Ownership, property management, and oversight

The nature of the project's ownership is an important element in rating MHPs. Standard & Poor's will rank owners based on their experience, commitment, asset management capabilities, and financial strength. In particular, we will look at whether the owners have experience in handling the unique aspects of MHPs. Transactions with owners without previous experience in owning MHPs will usually not qualify for 'BBB-' or higher ratings. Standard & Poor's will also look for property managers with experience managing MHPs. At the time of the site visit, we will interview the property manager to review experience and track record with MHPs, all aspects of day-to-day operations, and overall operating strategy. Specifically with regard to MHPs, we will look at turnover time for vacant spaces and the procedures in place for handling sales and replacements of mobile homes in the park.

Ongoing financial and management reviews by a qualified asset manager or oversight agent are also necessary. In most cases, an outside private oversight agent with experience in bond compliance for rated MHPs is retained to provide ongoing financial and management reviews. ■

Affordable Multifamily Housing Pooled Financings

Pooling of affordable multifamily housing assets gives issuers the benefits of economies of scale and diversification, which can increase credit quality when compared to single-asset transactions. Pooling is an efficient way for housing finance agencies (HFAs), banks, mutual funds, low-income housing tax credit (LIHTC) investors/sponsors and conduit issuers to get higher ratings for affordable multifamily transactions than would be possible for single-asset transactions.

Affordable multifamily pool transactions depend on the collective performance of multiple properties located in a variety of markets and controlled by separate borrowers. The ratings of pool transactions are predicated on the notion that it is highly unlikely that all of the properties will experience declines in cash flow and value simultaneously, but that, over the life of the transaction, some loans can be expected to default, with resulting losses to the collateral pool. Standard & Poor's Ratings Services determination of credit enhancement levels for pool transactions is designed to estimate the frequency of default with respect to the underlying assets and the severity of the loss that is expected to be incurred in conjunction with each default, given the characteristics of the loans in the pool.

For each rating level, Standard & Poor's uses an internal model, to determine the minimum loss coverage necessary by rating category. Potential losses in a pool are typically covered in two ways. One is through over-collateralization, whereby the pool has sufficient assets over liabilities to cover potential losses. The other is through subordination, whereby the higher rated debt is supported by debt issued at the lower rated levels all the way down to noninvestment-grade. Examples of other types of coverage, include, a general obligation pledge for HFA pools, or credit enhancement for other pools. For the purposes of this article the three terms, loss coverage, over-collateralization and subordination are used interchangeably in describing the losses a pool has to cover at different rating levels.

Pools of affordable multifamily housing debt obligations are typically issued following one of three basic structures:

- Bonds issued by municipal issuers such as HFAs secured by affordable multifamily mortgages under closed or open resolutions,
- Taxable debt obligations secured by pools of affordable multifamily mortgages issued by non-tax exempt issuers using a REMIC (Real Estate Mortgage Investment Conduit) structure, and
- Tax-exempt pass through debt obligations secured by pools of affordable housing tax exempt bonds issued by non-tax exempt issuers using some other form of pass through legal structure.

Qualifying For Affordable Multifamily Pool Treatment In Rating Debt Obligations

In order to obtain large pool treatment for a pooled transaction, the pool must contain at least 20 debt obligations with 10 separate obligors. These transactions typically, do not have one obligor representing more than 10% of the cutoff principal balance of the mortgages or bonds in the pool. For application of pool concentration rules, Standard & Poor's defines obligor as the ultimate borrower on the debt obligation and not the tax-exempt issuer (in the event that the issuer is a municipal tax-exempt conduit issuer issuing the debt obligation on behalf of a third party borrower.) As illustration, consider the situation where a not-for-profit or public housing authority or tax credit limited partnership is the legal owner of a project and the borrower under a loan agreement or financing agreement.

The issuer of the tax-exempt bonds is a tax-exempt municipal entity issuing the bonds as a conduit issuer and has no legal binding obligation to use its own credit to pay debt service on the bonds. In this situation, Standard & Poor's considers the legal owner of the project to be the borrower for concentration rules and not the issuer. In certain tax-exempt bond transactions, a municipal entity is the legal owner of the multifamily property, as well as the issuer of the bonds, and leases the property on a long-term lease to a not-for-profit entity in order to qualify the property for real estate tax exemption. In these situations, Standard & Poor's would still consider the not-for-profit to be the borrower for application of pool concentration eligibility.

Individual Property Reviews

Standard & Poor's will review the operating history of properties in the pool. This review will consist of an analysis of three years of audited financial statements, which will be used to derive net cash flow, and to assign an appropriate valuation to the properties. Property income will be reviewed for historical trends, and Standard & Poor's will assume a vacancy rate that is the greater of the actual vacancy

rate at the property or the prevailing vacancy rate in the market. The assumed vacancy rate will always be a minimum of 5% but in the case of elderly housing a lower minimum vacancy rate may be used, if appropriate. Standard & Poor's will pay particular attention to rent restrictions on property units to determine if the rents in the property income reflect any legal rent restrictions on the property. Standard & Poor's will compare assumed property expenses to historical property expense trends, expenses from comparable properties in Standard & Poor's rated property database and independent third party information.

Expense underwriting without real estate property taxes is acceptable in the event that the property can document statutory or specific property tax exemption. Capital expenditures are incorporated in multifamily underwriting by estimating future capital expenditures and providing for an annual reserve for replacement which funds the capital expenditures over time. The capital expenditure projections should be consistent with the third party reports provided to Standard & Poor's and with our analysis of the property upon physical inspection. Standard & Poor's will include this annual reserve for replacement in the computation of net cash flow of each property. The annual reserve for replacement will be the higher of Standard & Poor's minimum reserves for replacements or the actual number recommended by the property condition survey. (See "Public Finance Criteria: Unenhanced Affordable Housing Project Debt" for Standard & Poor's minimum reserves for replacements.) Standard & Poor's typically sees multifamily expense ratios in the 35% to 50% range although the ratio may be higher with projects with restricted rents.

Standard & Poor's typically will do site visits to projects comprising a minimum of 50% of the pool principal loan/bond balance. Based on a site visit, Standard & Poor's assigns a ranking from "1" to "5", with "1" indicating new high-end market rate housing quality, and "5" indicating housing in bad physical condition, with physical obsolescence. A ranking of at least "3" is typically necessary for investment grade ratings. A weighted average ranking of property quality for the pool will be determined and used to adjust pool subordination levels, if necessary.

Standard & Poor's will derive a value for each property in the pool using an appropriate capitalization rate, based on per property type. The analytical team will review appraisals for each property in the pool but does not use appraisal values for loss coverage computation purposes. Typically a 9.25% cap rate will be used for older multifamily projects but higher or lower cap rates may be used in certain instances. For instance, cap rates in the 8.25%-8.75% range may be used for newer low-income housing projects due to the rent restrictions on the properties, the newness of the properties and the additional oversight provided by various parties such as the low-income housing tax credit investor.

Overall Review Of Quality And Diversification Of Pool Assets

Once the reviews for individual assets in the pool are complete, Standard & Poor's will compile and review statistics on the overall pool with regard to owner diversification, geographic diversification, affordable housing program termination risk, loan seasoning and mortgage payment delinquencies.

Owner and geographic diversification

Pools with a greater than 10% exposure to one owner will not qualify for large pool treatment. Pools of such properties will be analyzed as small pools and the rating on senior debt obligations will usually receive lower ratings than more diversified pools, (see "Public Finance Criteria: Unenhanced Affordable Housing Project Debt"). Typically, Standard & Poor's measures geographic risk at the state level. However, concentration risk within a state, or even a large county or city, does not preclude investment grade ratings on pools. All HFA pools are concentrated in one city, county or state and can obtain investment grade ratings. The more narrow the geographic concentration, the higher the risk, however. Standard & Poor's looks for mitigating factors, such as the depth of rent restrictions, historical performance, asset management, and potential for ongoing financial support.

Affordable housing program termination risk

Many affordable housing projects have program termination risk which may affect the ability of the projects to pay debt service on a timely basis. Termination risk affects such programs as Section 8 projects with Housing Assistance Program (HAP) contracts (either long-term or annually renewable contracts) and LIHTC transactions (where most partnership agreements require a sale of the property after the 15th year compliance period).

While the Federal government has been extending Section 8 contracts, it is difficult to say that projects in a pool will have the HAP contracts extended over the term of the bonds. It is possible that projects with elderly tenancy, for instance, or with strong ownership and oversight may stand a greater chance to achieve contract extensions over the long-term. For projects where the HAP contract expires prior to bond maturity and the Section 8 sponsor indicates that the project should be underwritten as a continuing Section 8 subsidized project, Standard & Poor's will make an assessment

whether the project has a good chance to be extended and, if so, will analyze using rents which are the lesser of rents affordable to tenants making 60% of HUD median income or local HUD Fair Market Rents (assuming tenant pays 30% of income for rent). Standard & Poor's will also use higher cap rates and lower default thresholds than unsubsidized affordable multifamily in determining loss coverage.

Standard & Poor's may also be able to make the assumption that a certain portion of the expiring Section 8 projects can make a successful transition to unsubsidized status. These may include properties that, already have a significant portion of unsubsidized units fully rented which demonstrate their ability to attract unsubsidized tenants; or, properties that compare favorably to other affordable multifamily projects in the area in location, amenities, unit size, curb appeal and physical condition (properties that rank 3 or better by Standard & Poor's) and have strong ownership. These transactions will be analyzed using the unenhanced affordable housing project debt criteria assuming a successful transition. In order to determine that a successful transition can be made, Standard & Poor's would need to visit each site and stress the pro formas with a two-year transition period from subsidized to unsubsidized status assuming that unsubsidized rents would be at a significant discount to market. Section 8 transition transactions that are included in pools will need sufficient reserves to cover the transition period. Standard & Poor's will determine recovery rates for Section 8 properties not assumed to transition to unsubsidized status, on a case-by-case basis.

The low income housing tax credit program, allows corporations and individuals to receive a dollar for dollar credit against federal income tax liability for 10 years, and requires the projects to comply with the program rent restrictions through the 15 year compliance period. For LIHTC properties, Standard & Poor's will review the overall pool to determine if there is a concentration of program termination risk in any given year. Pools with a significant number of loans with maturities greater than 15 years may suffer unique stress if all, or a number, of properties are required to be sold in year 15. Sales of properties frequently result in a drop off in net operating income. Pools with significant properties that are sold in the same period may see such a drop in average NOI (net operating income) affecting debt coverage levels. Subordination levels for such pools may need to be adjusted to reflect the fact that, in reality, the assets have balloon maturities tied to a sale of the property rather than are fully-amortizing.

Mortgage loan seasoning and mortgage payment delinquency history

Standard & Poor's will review pool statistics for mortgage seasoning (the period since the origination of the mortgage) and the payment history of the borrowers. Mortgages with shorter seasoning periods may have the underlying property NOI's haircut during the individual property review process. Pools with significant delinquency histories may receive lower ratings, or need higher collateralization level for similar pools with better delinquency history.

Determination Of Loss Coverage

Standard & Poor's will value the assets in the pool and determine loss coverage levels by rating category, by computing a DSC and LTV for each property. Based largely on the LTV or DSC, Standard & Poor's will determine the aggregate credit risk associated with the loan portfolio and the resulting default rates that must be survived to obtain a given rating level. Default rates are then adjusted for recovery assumptions and a lost interest amount is added to account for anticipated failure to receive interest until recovery is complete. Loss coverage can be provided through over-collateralization (typically used by HFA pools) or subordination of subordinate debt tranches. Standard & Poor's may adjust computed loss coverage levels due to pool size, property type, lack of significant geographic and owner diversification, lack of pool mortgage seasoning, and significant affordable housing program termination risk.

Under higher rating scenarios, higher default rates are assumed, as compared to default rates under lower rated scenarios. In addition, in terms of recovery of principal and years of lost interest, Standard & Poor's applies higher stresses at the higher rating categories, and less at the lower ratings. The severity of the loss incurred in connection with each default depends on analytical assumptions about expected default experience and the specific characteristics of the loan in question. The analytic assumptions relate to the decline in the market value of the underlying real estate and to the number of months between default and receipt of liquidation proceeds. Here again assumptions vary by property type and rating category. For instance, at the higher rating categories, Standard & Poor's assumes that it will take the servicer longer to resolve a default on the underlying property, than in the lower rated categories.

The number of months between the borrower's default and the servicer's receipt of liquidation proceeds is used in combination with the loan coupon to estimate the amount of lost interest associated with a default. The other loan characteristic that has

an influence on loss severity is the extent of amortization. In the case of interest only loans, it makes no difference whatever defaults occur shortly after the loans are securitized or when the loans mature: in either case there will have been no amortization of principal to help to absorb the loan losses. In the case of amortizing loans, the later the default occurs in the life of the loan, the less severe the loss is assumed to be as a result of the amortization.

This criterion applies except for one notable exception. For LIHTC pools, the analysis focuses much more on years of lost interest and less on defaults and recoveries. This is as a result of the impressive history of the program since it's inception in 1986, whereby defaults are very uncommon. A foreclosure on these properties would trigger a loss or recapture of the tax credit benefits. The history has shown that there are a percentage of properties that don't cash flow sufficiently to cover debt service, and are supplemented by either reserves or some other forms of capital infusions until the properties can once again cover debt service from operations. As a result, the analysis emulates this phenomenon and assumes a certain percentage of the properties in these pools will need capital infusions, and that the infusions depending on the rating level will potentially be for a significant period of time. As in the regular pool scenarios, the higher the rating level the more stressful the assumptions, and therefore higher level of reserves will be necessary at higher rating levels, than at lower levels.

It should be noted that the basic variables on which the model operates for all property types, are stabilized net cash flow and market values for each of the underlying properties as estimated by Standard & Poor's and as based on the criteria outlined above. Although these estimates are derived from information provided by the issuer or the sponsor, the Standard & Poor's adjustments in connection with its analysis may cause the estimates themselves to look different from the numbers reported by third parties.

Standard & Poor's will review the pool legal documentation, both on the individual bond/mortgage level and on the trust/partnership/REMIC level. See Standard & Poor's U.S. CMBS Legal and Structured Finance Criteria located on www.standardandpoors.com. Individual mortgages and bond indentures will be reviewed to ensure that the loan documents properly reflect the cash flow assumptions of the pool.

Cash Flow Analysis

Once Standard & Poor's determines the credit support necessary at different rating levels, then an analysis is needed for the rating of the actual pool debt obligations assuming certain prepayment assumptions. Where the pool structure is a pass through entity (REMIC, partnership or trust), the interest rate of the debt obligations is based off the weighted average coupon of the trust, and the structure uses a "fast pay-slow pay" payment structure, the rating of the debt obligations is relatively simple: the debt obligations get the rating based on the subordination levels from Standard & Poor's internal model as adjusted.

The analysis is more complicated for pools with loans which have various different coupon rates or maturities, with pools with variable rate debt obligations whose rate is pegged off an index different than that of the certificates/bonds secured by the pool (such is in common in HFA pools) or pools that use a "pro rata pay" structure. In these cases, Standard & Poor's will review cash flow projections to ensure that, the debt obligations can be paid on a timely basis under various scenarios; and, that there is no overall degradation in pool credit quality in the event that better performing loans prepay and the resulting principal payments are allocated to all pool classes, on a pro rata basis. In these cases, additional cash flow runs may be necessary and stress cash flow models may be requested. The requested cash flow runs can vary depending on the composition and characteristics of the pool, and are also applicable for State Housing Finance Agency multifamily parity resolutions.

Cash flow coverage scenarios

At the minimum, the following base case and stress cash flow runs must be prepared:

Base case:

- All loans pay at stated interest rate and loans with balloon maturities pay at balloon maturity date with a 30-day lag in cash flows.

Stress cases:

- Selective low LTV loans prepay-all loans below the average pool LTV with coupons above the average pool coupon prepay at the end of the of the loan prepayment lockout period.
- Selective high DSC loans prepay-all loans above the pool average DSC with coupons above the average pool coupon prepay at the end of the loan prepayment lockout period.
- All LIHTC prepay scenario-all LIHTC transactions prepay loans in the 15th year after being placed in service.
- Massive prepayment scenario-all loans prepay at the end of the individual loan lockout periods.
- High coupon prepay scenario-all mortgage loans with coupons above the pool average loan coupon prepay at the end of the loan prepayment lockout periods.

For pools with construction loans:

- Cash flows should be run in accordance with the "Cash Flow Considerations" and "Capitalized Interest" sections of the Standard & Poor's Public Finance construction criteria. (See "Public Finance Criteria: Assessing Construction Risk").

Credit migration scenarios

For pools with pro rata pay structures, additional cash flow runs may be requested assuming that the highest DSC/lowest LTV loans prepay at the earliest possible prepayment date after any lockout period ends. Standard & Poor's will then review the loss coverage levels of the remaining loans to determine the impact on credit quality of the remaining debt obligations.

Rating Pools With Variable Rate Assets Or Liabilities

Standard & Poor's will review assets in pools with variable rate debt and determine an appropriate fixed rate at which to underwrite the pool loans for debt service coverage purposes. Standard & Poor's will determine this appropriate fixed rate by reviewing data from our floating rate interest rate models. In pools where the variable rate on the assets is not passed through to the debt holders, the rate which Standard & Poor's will use for individual loan analysis may be less than the highest interest rate over the pool life as derived from our interest rate vector model. In that case, in order for pool debt to receive high investment grade ratings from Standard & Poor's, the pool may have to provide reserves for periods when interest rates are projected to be above Standard & Poor's assumed rate.

Standard & Poor's will review pools with variable rate assets and variable rate liabilities to ensure that there is no basis point risk between the two debt instruments. Rated certificates/bonds for pools with fixed rate assets and floating rate liabilities will have to have appropriate debt service coverage levels at both the expected floating rate liability rate and at the maximum rate. If no maximum rate on the liabilities is provided in the documents, then Standard & Poor's will use its interest rate vector models to determine an appropriate maximum rate. In addition, Standard & Poor's will need to review stress cash flow runs assuming the various prepayment scenarios listed above.

Issuers of pool debt obligations with variable rate demand obligations (VRDOs) that have associated put features may have to obtain liquidity facilities or other comparable credit support to address remarketing risk.

Servicing And Liquidity Issues

Standard & Poor's looks for experienced multifamily servicers in rating pooled transactions. The experience can be evaluated in several different ways. Servicers other than those with Standard & Poor's Servicer Evaluations are certainly acceptable. Other servicers who would be acceptable are HFAs that have a proven track record in servicing multifamily loan pools (as would other types of entities that have proven track records in multifamily loan servicing). Standard & Poor's acknowledges that servicing pools of bonds will not necessarily require the same skill set as a commercial loan servicer due to the fact that bond trustees usually handle the cash flow requirements of a bond issue. Determining whether the obligations' servicer is qualified will require an analysis of reporting requirements, cash flow management in some transactions, special servicing in default or workout situations and working with trustees and issuers in bond transactions. In order for a pool to receive a rating, Standard & Poor's must be assured that the servicer meets Standard & Poor's guidelines and can effectively service the pool.

Standard & Poor's always looks for liquidity in investment grade rated bond transactions and pool transactions are no different. Liquidity is there to ensure that there is timely payment of principal and interest in the event of a temporary impairment of cash flow. Liquidity in affordable housing pooled transactions can be provided by debt service reserve funds on the individual bond level or by having a rated entity agree to provide servicing advances. The required rating level on the entity providing the servicing advances will depend on the rating d of the pool debt obligations.

State And Local Affordable Multifamily Housing Pool Open Resolutions

Housing finance agencies have been issuing bonds backed by pools of affordable multifamily project loans since the late 1960s. HFAs have historically supported their multifamily bond issues and similar to LIHTC projects, have avoided default situations by utilizing their resources, including capital infusions. Standard & Poor's rates some pool financings on the strength of the multifamily mortgage collateral alone; some are combined single family and multifamily pools. Some multifamily-pooled resolutions are rated based on the general obligation pledge of a rated HFA and not on the quality of the underlying loans. Most of the HFA multifamily pool resolutions are single tranche but some have multiple tranches. In the single tranche multifamily pools, loss coverage for the rated bonds is typically provided by excess mortgages or cash reserves. In resolutions with subordinate tranches, credit support for the higher rated tranches is provided by lower rated tranches. Some HFAs pledge their general obligation

on subordinate multifamily pool tranches, in which case the rating on that tranche would be the credit rating of the rated HFA.

Standard & Poor's uses the same methodology for analyzing credit support levels for HFA affordable multifamily housing pools as for conduit pools. Because many HFAs have a long track record of excellent underwriting and asset management capabilities, Standard & Poor's will rely to a certain extent on the issuer's representations regarding calculations of DSC and LTV, property quality and condition, and strength of ownership and management. Standard & Poor's will also give management credit to HFA's with strong asset management departments that can identify financial and management problems early, seek rent increases and subsidy extensions, and work out troubled loans.

Construction Risk In Affordable Multifamily Housing Pools

Housing Finance Agency pools

Many HFAs have parity bond indentures or guarantee funds that finance new construction of affordable multifamily housing projects. HFAs have incurred minimal credit losses on these transactions, either during the construction/lease up phase or during the permanent phase thereafter. HFA's typically service their own mortgage loans on projects under construction or hire outside mortgage loan servicers to do the servicing. The agencies or outside servicers frequently review construction draws and make site visits to monitor construction progress. Procedures may vary from HFA to HFA but frequently the HFAs have engineers on staff to review construction progress on projects. It is very rare that a multifamily project financed by an HFA does not get completed.

HFA's typically have a good history in financing projects that achieve stabilization at targeted debt service coverage levels. Most projects financed today by HFAs are usually LIHTC multifamily projects, which though they are typically nonrecourse financings have the advantage of having deep pocket limited partners who have tax incentives to keep multifamily projects out of default, at least during the life of the LIHTCs. In the event that projects do have financial problems or go into default, HFAs have resources to mitigate these defaults, such as parity indenture fund balances and funds to make subordinate mortgage loans or grants. Due to the long history of excellent performance on projects with construction/lease up risk and their systems in place, Standard & Poor's has become very comfortable with the HFAs taking construction risk on affordable multifamily housing projects and will rate parity bond indentures that do not have credit enhancements on projects under construction.

If an HFA can demonstrate a positive experience with construction risk, as well as underwriting, oversight and construction procedures as outlined above, Standard & Poor's will assume low construction risk and look to bond cash flows to model construction risk. Bond cash flows should be run as in accordance with Standard & Poor's construction criteria (see "Public Finance Criteria: Assessing Construction Risk"). HFA parity indenture cash flows must demonstrate that bond debt service can be paid assuming construction delays. If bond cash flows do not demonstrate sufficient resources to support the bonds during the delay period, the HFA must identify other sources of financial support.

Conduit pools

More and more conduit programs have arisen to fund construction and permanent financing of multifamily pools. These typically take the form of, taxable debt obligations secured by pools of affordable multifamily mortgages issued by non-tax exempt issuers using a REMIC (Real Estate Mortgage Investment Conduit); or tax-exempt pass through debt obligations secured by pools of affordable housing tax exempt bonds issued by

Information Requirements

As part of the rating process, Standard & Poor's will perform a detailed review of the individual properties in the pool, based on the following information:

- Project name and address
- Project owner/sponsor
- Type of affordable housing project: e.g. LIHTC, project-based Section 8, tenant-based Section 8, 80/20, Section 236, Section 202, 501c3, military housing, student housing, assisted living, etc.,
- Number of units
- Age of property
- Original principal balance of loan/bond
- Current principal balance of loan/bond at cutoff date
- Interest rate on loan/bond
- Amortization period of loan/bond
- Maturity date of loan/bond and balloon payment, if any
- Prepayment terms for the bonds, if any
- Amount and investment of debt service reserve funds, if applicable
- Seasoning of loan/bonds
- Loan history of loan/bonds
- Three years of net operating income of property
- Trust indenture/loan agreement, mortgage, note, if applicable
- Third party reports: appraisal, property condition reports, and environmental study

non-tax exempt issuers using some other form of pass through legal structure.

Construction risk in conduit pools is more variable than for HFAs due to varying degrees of experience and track record of sponsors, as well as the number of markets involved (transactions are multi-state as opposed to state-specific). However, if management is strong and has a local presence in all project locations, conduits can be strong sponsors of multifamily housing. This is especially true for LIHTC pools, where the investor has a vested interest in ensuring the health of the properties in order to maintain the tax credits. Standard & Poor's will assess construction risk to determine whether it is low, medium or high, and has employed a conservative approach to assessing this risk. Standard & Poor's may engage an independent construction consultant to assist in determining the risk of construction loans in the pool. (See "Public Finance Criteria: Assessing Construction Risk"). To date, conduit issuers have obtained credit enhancement to cover construction risk, for investment grade transactions. Projects that have rated letters of credit providing credit support for loans until stabilization will be given full value in the pool, as long as the rating of the credit support provider, is as high as the rating on the bonds. It is unlikely that a pool heavily weighted with construction loans will achieve an investment grade rating.

Loans for projects that have completed construction but have not yet stabilized with the project reaching 90% occupancy and underwritten NOI for a minimum of six months will be assigned standard recovery values, but Standard & Poor's will haircut project NOI resulting in a reduction of the project's collateral value in the pool. Recovery credit for projects during stabilization will only be given in those circumstances where the sponsors can demonstrate to Standard & Poor' that they have a long history of successfully overseeing multifamily lease up of new construction projects and have the staff and systems in place to do so. Experience in FHA, Fannie Mae or Freddie Mac new construction programs will be considered strong indicators of ability to oversee conventional multifamily construction and lease up, but will not be the ultimate determinant. ■

Military Housing Privatizations

Military housing projects are built on or near military bases and are structured so that military personnel have preference in renting the units. The rent is paid by the military tenants and is set at the service members' basic allowance for housing (BAH), an allowance legislated by Congress as part of military service members' compensation. These privatized military housing projects may have various types of Department of Defense (DoD) subsidies, such as donated or leased land at nominal cost, donated housing units, cash equity investments in the joint ventures that own the housing, subsidized utilities or infrastructure, and below-market-rate subordinate debt. The DoD has the legislative authority to and may make available loan guarantees for these projects in the event of mortgage defaults due to base closures, base realignments, or Armed Forces deployments.

Bonds financing housing projects under the MHPI are eligible to achieve high investment-grade ratings for three reasons: Rental income from the project comes from a military housing allowance system, which, although subject to annual appropriations, has a long history of congressional support with no funding delays. Monies are typically transferred directly from the DoD to the trustee to pay bondholders. Military housing privatizations are project-specific and are tied to specific bases, but the BAH as a component of service members' pay is not appropriated for individual bases. Rather, military pay is a federal expense incurred on behalf of the members of the military.

Second, the MHPI is a strong program consisting of quality housing with strong demand at most military bases with DoD contributions that enhance project feasibility while offering below market rents. Third, the program authorizes the use of appropriate protections, as needed, for lenders against base closure, realignment, or deployment.

The analysis of bonds secured by military housing projects will focus on four key areas:

- A review of the essentiality of the military base as an indicator of future demand for military housing on base and related military base closure, realignment and deployment issues, and related loan guarantees;
- The military housing aspects, including housing allowance payment history and mechanisms, DoD subsidies, ground leases, and any other operating agreements with the DoD related to the housing;

- A real estate analysis including real estate quality, location, market demand, construction issues, net cash flow and real estate program administration; and
- Bond structure, reserves, and investments.

Military Essentiality Analysis

Privatized military housing transactions must be financially feasible in the event of a military-related event such as base closure, base realignment, or long-term military deployment. Military bases are national assets, and most will not be closed because of their necessity for national defense. However, the DoD is under pressure to find savings in the defense budget to finance military modernization. Therefore, savings through base closures that eliminate redundant DoD operations are periodically considered.

In the event that there are further rounds of base closures, some bases are more likely to close than others, and although there may be political considerations in the decisions over which bases to close, the potential for some types of bases to be selected for closure is able to be analyzed based on current and future projections of military force structure, base capabilities, geographic location and the results of rankings from previous BRAC rounds. The results of the latest BRAC round in 2005 are a good indicator of the military's view of essentiality. Standard & Poor's designates military bases as highly essential, moderately essential, and essential. If the base is not deemed to be moderately or highly essential, and is located in an area where the economic impact of such a closing on a local economy would be very negative, then the military housing transactions may need to have some form of DoD debt guarantee in order to be investment-grade.

Exceptions to this case might be where the base is in a large metropolitan area of at least one million population and the combined military, military-dependent, and DoD civilian employee population in the area from all military-related activities is less than 5% of the total population and the base housing is of good quality (e.g. location, design, physical condition, among others).

The DoD may desire to have any military-related debt guarantees drop off in the event of a base closure and the project successfully transition to civilian housing. In this case, Standard & Poor's will review the transaction to ensure that the project meets an appropriate DSC test for an adequate time period before the guarantee can drop off.

Despite the existence of the DoD base closure guarantees, Standard & Poor's will evaluate the project to determine its feasibility as civilian housing in the event of a base closure or realignment. Consequently, Standard & Poor's will review a feasibility study of the military housing project as military and civilian affordable housing. The developer should complete a transition plan and stress tests addressing the project transitioning to civilian affordable housing. The transition plan must cover:

- Property management;
- Marketing to civilians;
- Transition to local taxation;
- Utility conversion;
- Provisions for local government services, including police and fire coverage;
- Access to schools and transportation; and
- Permanent base access.

The mechanics of base closure guarantees

For investment grade ratings, mortgage loan debt service guarantees from the DoD should embody the following concepts:

- The guarantee should cover base closure or realignment and a temporary deployment from the base of a significant portion of military personnel assigned to the base;
- The guarantee should be specific relating to identification and calculation of triggers driven by the number of personnel affected by a military-related event; and
- The guarantee should be a full faith and credit obligation of the U.S.

With regard to the mechanics of payments under such a guarantee, the guarantee should meet Standard & Poor's criteria for payment guarantees. (See "Legal Criteria for U.S. Structured Finance Transactions-Guarantee Criteria")

Real Estate Analysis/Construction Risk

Real estate analysis

Standard & Poor's Ratings Services rating criteria for bond issues that are secured by privatized military housing projects constructed or rehabilitated under the MHPI is a combination of rating approaches for subsidized and unenhanced affordable housing transactions and federally appropriated debt. The real estate analysis includes a site visit as discussed below, a review of the ownership entity, and a review of third party environmental and physical needs reports. A full description of the real estate analysis is described in the "Public Finance Criteria: Unenhanced Affordable Housing Project Debt".

Construction risk

Construction risk is inherent in military housing privatization transactions due to the program consisting of renovation and new construction of military housing. Construction risk is typically mitigated in these transactions, by the fact that the owner takes title to occupied units of military housing upon closing. In addition, the owner represents that they will

keep a certain number of units on-line during the initial development period. Military tenants are typically moved out of old housing upon completion of new housing. Construction delays can be handled by delaying the movement of tenants out of the older housing. In the event units are not on line during the initial development period, Standard & Poor's may use an independent consulting engineer to determine the level of construction risk and potential mitigants. There are a number of other factors, which are important in the construction analysis of military housing privatization transactions. (Please see "Public Finance Criteria: Assessing Construction Risk In Public Finance").

Lease-up risk

Standard & Poor's considers lease up risk low in family military housing transactions. The fact that units are on line throughout the development period is a major mitigant to lease up risk. Often the tenants that are moved to the newly constructed or renovated units are tenants relocating from other units on base. There is strong demand from military personnel to live on base due to base amenities, support networks, schools and high security. As a result, there are frequently long waiting lists for housing on base. In addition, the rents for the units on base are usually below what service-members would pay in the general market and the newly constructed housing stock is typically more attractive than off base housing.

Analyzing The Project As Military Housing

In evaluating the rental income stream coming from the military housing allowances, Standard & Poor's will use the current BAH in effect for that particular military housing area (MHA) and the pay grade mix of the units as established by the DoD request for proposal (RFP) for the military housing project. Standard & Poor's will review the BAH history in the MHA to ensure the revenue projections at the project are justified by the BAH history. If the pay grade mix of the units may change or if there are provisions for lower-ranking pay grades occupying units reserved for higher pay grades, Standard & Poor's will review stress cash flows to determine what reserves are needed for differentials in pay grade mix from the pro forma rental income assumptions.

There also will be a review of the pay grade mix of the units in comparison to the mix of pay grades in units stationed at the base and to the pay grades of families on the housing waiting list. In some instances, the DoD requires that, in the event of a shortage of eligible military families, housing units must be held vacant for other categories of DoD employees. In these instances, Standard & Poor's may opt to use a higher vacancy rate in analyzing the project or look for additional leasing reserves. In addition, Standard & Poor's will look for reserves to cover delays in any mortgage payments made by the DoD under the DoD guarantee. For instance, if the DoD guarantee has a 120-day lag between the mortgage payment default date and payment date, then Standard & Poor's will look for a 120-day additional debt service reserve. In the event that rental payments by tenants are tied directly to the BAH payments, which are structured as a component of military pay to be made in arrears, then Standard & Poor's will look for an additional 30-day rental reserve in addition to the normal 30-day lag. Mortgage reserves may be provided in the form of cash reserve funds or servicing advances.

Adequate replacement reserves should be initially set up and maintained in accordance with the ongoing preventative maintenance and replacement schedule as outlined in the contract between the owner and DoD and confirmed with a structural engineering report. Standard & Poor's will analyze replacement reserves in accordance with industry standards to determine their sufficiency and if controls over disbursement are adequate. Additional reserves may be necessary to bring the property up to environmental standards.

Reserves

Generally, Standard & Poor's will look for debt service reserve funds (DSRFs) equal to six months maximum debt service on the bonds, which may be funded with bond proceeds. Exceptions would be where the base is not deemed to be moderate to highly essential, and a transition to non-military personnel is assumed. In these instances, a DSRF equal to maximum annual debt service on the bonds will be necessary. Monies for the debt service reserve fund should be invested in investment grade securities ('BBB-' or higher), and be available to pay debt service in the event of a shortfall.

Military housing project ground leases

Standard & Poor's experience is that most military housing transactions in which the housing is located on base will be structured such that the DoD will use a ground lease in order to retain control of the land. Standard & Poor's can assign investment grade ratings to transactions using ground lease structures as long as the ground leases meet Standard & Poor's ground lease criteria as delineated in the criteria for CMBS transactions.

Asset management

Standard & Poor's will review the oversight role and capacity of issuers, outside third-party asset managers, and DoD in each transaction to assess the

impact on the rated securities. In certain situations where the ownership structure of a military housing project is weak, Standard & Poor's may be unable to rate these securities without the DoD or an effective outside third-party asset manager playing a role.

Base access

For transactions that are not deemed to be moderately to highly essential, access to base housing will be another factor in evaluating a privatized military housing transaction to determine its feasibility as a civilian housing project. Projects on the perimeters of bases that can be physically segregated from the base are stronger transactions than projects located in the interior of military bases. For projects located in the interior of bases, Standard & Poor's will review the plans for access to the base housing by civilians in the event that higher defense conditions restrict access to the base to military personnel and other DoD personnel. Transactions where base access is more limited may need the DoD guarantees of debt service, higher reserves, or much higher vacancy factors. In addition, transactions where the base commander can restrict access to the project by the owner or property manager in cases of national emergency will be carefully evaluated.

Documentation Requirements

Documentation that Standard & Poor's will need to review before assigning a rating includes, but is not limited to, the following:

- Trust indenture.
- Loan or financing agreements.
- Mortgage or deed of trust.
- Ground lease, loan guaranty from DoD and other government documents.
- Investment agreements.
- DoD request of proposals.
- Base information
- Developer's plan of finance, construction and management.
- List if participants in project.
- Offering statement.
- Construction agreements.
- Construction completion guarantees.

Project cash flow projections:

- Beginning state cash flow projections assuming beginning state of units.
- Cash flow projections for each year of the development period.
- Ending state (stabilized) cash flow projections assuming completion of targeted end state number of units.
- BRAC cash flow projections assuming the base is closed and transition to civilian housing at the end of the period designated by DoD to complete the BRAC process.

Military Site Visits And Documentation

In order to evaluate the debt obligations for a rating, Standard & Poor's will make a site visit to the project securing the debt obligations at the beginning of the rating process. Due to the complexity of these transactions, there are a number of issues that Standard & Poor's would like to address during the site visit, including, but not limited to the essentiality of the military base that the housing serves.

Before the site visit, Standard & Poor's will review the project request for proposals and a summary of the base vital statistics, as well as the market study so that selection of housing comparables for the visit can be made.

Site visits should include:

- A tour of the military housing project. Standard & Poor's will visit each military neighborhood and rank each neighborhood and do interior site visits of a representative sample of units and will take photos of each neighborhood and a tour of off-base civilian housing comparable properties.
- A presentation addressing civilian housing market off base (preferably by the author of the market study) and how BAH rates and housing on base compare to civilian housing and rents off base.
- A command presentation of activities of the base (preferably by uniformed members of the U.S. Armed Forces) addressing base essentiality and contrasting the base in question with other bases of similar type. A tour of the military facilities is an important part of the analysis of essentiality.
- A presentation on each military housing neighborhood, location, pay grades housed there, date of construction and/or rehabilitation and its current occupancy rate.
- A presentation regarding environmental conditions of the housing to be privatized and how environmental issues are being addressed.
- A presentation by developer and general contractor on their companies and previous experience with building large residential communities in general and military housing projects in particular.
- A presentation by developer on development plan for the project including site plans, housing elevations, construction plan and phasing plans.
- A presentation by developer/investment banker on mitigation of construction risk for bondholders.
- A presentation by developer on how property management is to be handled.

- A presentation by developer/owner on how property asset management including debt compliance is to be handled.

Unaccompanied Housing Privatization Criteria

The MHPI, which allows for the privatization of family housing, also allows for the privatization of housing for unaccompanied personnel. The unaccompanied housing program poses unique risks that distinguish it from the family housing program. Most importantly, is the risk of deployment. Deployment would terminate the lease for a certain class of (lower-ranked) personnel, causing cash flow to cease.

In family housing, this risk is mitigated by the continuation of BAH payments following deployment as long as the family of the deployed service member continues to occupy the home, which is typically the case. Second, construction risk is potentially different than family housing, as these transactions may not involve the conveyance of existing units and the generation of cash flow from existing units, during the initial development period. As a result, Standard & Poor's may use an outside consultant to review the construction of these developments, and determine if the mitigants to potential construction and lease up delays are sufficient in the structure of the transactions.

Finally, in the event of a base closure, the alternate use of the real estate is not clear as the existing and proposed units appear like student housing so may not be marketable to the general public, regardless of the strength of the local housing market and depth of demand, in the event of a base closure.

Key Credit Considerations And Major Risks

- Standard & Poor's will analyze military essentiality using the same methodology as for the family housing program.
- Deployment history for each base will be analyzed to determine the potential impact of future deployment on the occupancy.
- Construction risk can potentially be different than family housing, as units may not be on line during the initial development period. In these cases it is important to determine the level of risk

Evaluating The Basic Allowance For Housing

On Jan. 1, 1998, the Department of Defense (DOD) initiated a new housing allowance system for all members of the Armed Forces. The new system, entitled the Basic Allowance for Housing (BAH), replaced the previous system that combined the Basic Allowance for Quarters, plus Variable Housing Allowance. Implementation of the new system provides for much fairer housing allowances for service members stationed in high cost areas but can result in lower overall housing allowances in areas with lower housing costs.

The BAH is a single, price-based system that establishes housing allowances based on local housing costs by paygrade and family status. Growth in the DOD overall housing allowance budget is tied to the growth in a weighted average of national housing costs. The BAH allowance is computed by outside contractors who will perform surveys of housing costs in areas where military personnel are stationed. The consultants base their studies on one-two bedroom apartments, two-three bedroom townhouses, and three-four bedroom detached houses within zip codes near bases where 80% of off-base service members live, and which have a mean family income of within a certain band. The BAH system incorporates a "save pay" provision that ensures that no service member will incur a reduction in housing allowances until they move to a new station and are paid according to the BAH rate at that new location.

The BAH is paid monthly in cash to service members with families only if they do not live in military housing. Any Armed Forces members who live in military provided housing generally forfeit their housing allowance on a monthly basis and do not receive the housing allowance in cash. Service members have the right to have their BAH sent directly to a third party via DOD direct deposit or allotment.

The housing allowance is considered a major component of the compensation of members of the Armed Forces. The Current Structure of U.S. Armed Forces military pay originated centuries ago when countries and individuals temporarily raised armies to wage war. When raising an army, the sponsor had to provide not just pay, but food and shelter for the soldiers. This food and shelter gradually evolved into a system of non-taxable food and housing allowances. These allowances were provided in cash to the Armed Forces member if the government did not supply food and shelter. The allowance was withheld from the Armed Forces member's pay if the government did not provide food and shelter.

The legal authority to pay housing allowances to service members is subject to annual appropriation by Congress just as is military base pay. The legislative history for paying Armed Forces members on a timely basis is excellent. The rationale for paying Armed Forces members pay and allowances on a timely basis is strengthened by the fact that all enlisted members or the Armed Forces and many officers serve under enlistment contracts that can be terminated early only subject to special congressional legislation or disciplinary action. In addition, now that the military is an all-volunteer force, the DOD must structure adequate pay and allowances to be attractive for recruiting and the retention of existing Armed Forces members.

While the payment of housing allowances is subject to annual congressional appropriation, the essential function of national defense, the long legislative history of paying military personnel pay and allowances on a timely basis, and the need to attract and retain Armed Forces members makes the housing allowance a strong ratable income stream.

posed by the proposed construction. This analysis may include Standard & Poor's using a consulting engineer to determine these risk and potential mitigants.

- The demand analysis should include how many unaccompanied permanent party personnel are assigned to the base and/or are eligible for the privatized housing, a description of the housing for unaccompanied personnel currently available, and occupancy statistics. In addition, the market study should include information on the housing alternatives for these personnel available in the marketplace.
- Local housing market and alternate use for the real estate (layout, amenities, and location).
- The revenue and BAH structure will be analyzed to determine future rental stream.
- The bond and legal structure for these transactions is expected to be similar to family housing, including the level of reserves, and legal documentation such as the ground leases, operating agreements, and trust indentures. ■

Federally Subsidized Housing Programs

Standard & Poor's Ratings Services rates single-asset and pooled financings of properties supported by federal subsidies, such as HUD Sections 8 and 236. Ratings range from low to high investment grade, with lower ratings assigned to single-asset transactions and higher ratings assigned to state housing finance agency (HFA) pools.

Most federally subsidized properties are included in HFA loan pools, often in conjunction with unsubsidized, credit-enhanced and even single-family loans. HFAs have a strong record of managing these asset pools, closely monitoring loan performance and proactively taking steps to ensure financial stability. Single-asset financings are typically done through local authorities, municipalities and not-for-profits. Strong properties with strong owners and managers assisted by project-based federal subsidies can achieve investment-grade ratings, even when the contract is not coterminous with bonds.

The rating criteria for federally subsidized project financings is similar to unenhanced affordable multifamily housing criteria with refinements as indicated below. Standard & Poor's analysis focuses on real estate quality, legal structure, bond structure and reserves. Real estate quality includes a site review, measures of financial feasibility, market analysis, property management, ownership, insurance coverage and environmental concerns. Analysis of the federal subsidy is an important aspect of analyzing real estate quality, and focuses on two key factors:

- Depth of the subsidy and how it affects the relative affordability of the project. The deeper the subsidy, the greater the affordability, which argues for lower debt service coverage levels than needed to support unsubsidized properties; and
- Subsidy mechanics, including the federal appropriations process, contract provisions, such as termination events and regulations affecting key financial aspects, such as rent increases.

For a full discussion, refer to the criteria, "Unenhanced Affordable Housing Project Debt".

Project-Based Section 8

There are key differences that affect ratings on bonds supported by historical Section 8 contracts and the contracts HUD is entering into today, specifically appropriation risk, contract term and the rent increase mechanism. In the original program, Section 8 funding was typically set-aside at the outset of the contract for its entire term, significantly reducing appropriation risk. The term of the contract was often equal to bond maturity and termination risk was restricted to poor owner performance. Rents were originally increased according to an annual adjustment factor. In later years, HUD instituted rent ceilings, which had the impact of severely restricting, and even freezing, rent increases.

More recent financings are for developments with contracts that have expired and been extended under the Multifamily Assisted Housing Reform and Affordability Act of 1997 (MAHRA). These contracts are subject to annual appropriation and tend to be for shorter terms, intensifying termination risk. While appropriations need to be made for this type of contract each year, appropriation risk is not a limiting factor to low to mid-invest-

ment grade ratings due to the essentiality of federally subsidized housing. Termination risk is more of an issue that needs to be analyzed on a case-by-case basis. Standard & Poor's has seen contract terms as short as one year and as long as twenty years. Generally, Standard & Poor's looks more favorably on longer-term contracts, but whether the term is one year or 20 years, termination risk can be offset if the project meets the standards set forth under MAHRA for contract extension, as long as the owner is legally obligated to apply for contract extensions.

The expectation that contracts will be extended is strengthened by language in MAHRA that the HUD Secretary shall extend at the owner's request subject to appropriation under such terms and conditions that the Secretary deems appropriate. The legislation permits the HUD Secretary the option of not renewing due to poor financial or operational performance of the project owner on the subject development, as well as other HUD subsidized projects. Therefore, Standard & Poor's will evaluate whether the owner and property will meet Standard & Poor's, as well as HUD's standards of performance throughout the life of the transaction. In addition, the HUD REAC score at the time of the rating, and on an ongoing basis, is an indication of HUD's assessment of the owner. A deterioration of the REAC score below 75 could be an early signal of the failure of the owner to operate the property at a level needed to maintain the contract.

Other factors that add to the overall credit quality of the transaction help to make the case for the essentiality of the project, as well as its ability to withstand contract termination, include if:

- The project caters to HUD's targeted tenancy, especially, the elderly;
- The project could potentially operate without subsidy; and
- A potential sale of the property upon contract extension could generate sufficient funds to retire the bonds.

Section 8 Conversions

In situations where the owner has a viable plan for converting a Section 8 subsidized property to unsubsidized status over the life of the transaction, Standard & Poor's will consider ratings up to low investment-grade for bonds meeting conversion criteria, as follows:

- The feasibility of the transition from subsidized to unsubsidized status at the targeted rent levels should be substantiated in an independent third-party report;
- Projects should be owned and operated by an experienced affordable housing organization with a proven track record or have oversight of a state or local HFA or PHA;
- The owners should present Standard & Poor's with a written transition plan, which is, in effect, a plan of actions to be taken in conjunction with the expiration of the Section 8 contract. The plan should incorporate the methodology that the owners will use to ensure the successful conversion of the property within the shortest possible time frame.
- Cash flow scenarios should be run showing payment of bonds in the event that the Section 8 contract is extended and in the event that the project converts to AHP status.

Scenario 1 assumes successful relocation of existing tenants and releasing of units during a transition period assumed to begin upon expiration of the HAP contract. The length of the transition is assumed to be the greater of two years or four times the absorption rate for similar properties in the market. During the transition period, the project needs to meet at a minimum only the debt service coverage for HAP contracts. At the end of the transition period, the project must meet the AHP debt service coverage levels. Reserves should not be relied on in meeting the coverage levels.

Scenario 2 anticipates great difficulty in relocating the existing tenants and re-renting the units. The Section 8 tenants are only assumed to vacate the units at the historical turnover rate for the property.

Under both scenarios, a vacancy rate of at least 5% should be assumed, as well as a 30-day period to turn around a unit for occupancy once it has been vacated. Once the Section 8 contract has expired, project income will consist of the tenants' portion of the rent (30% of income) based on the historical rent roll of the property.

Ratings on Section 8 conversions will include only properties where most attributes fall within the "excellent" category. Standard AHP debt service coverage levels will apply, most likely at the higher end of each category.

Section 236 Interest Rate Reduction Transactions

For the Section 236 interest reduction payment program (IRP), financing activity tends to be for single-asset structures involving the bifurcation of the mortgage loan and the creation of debt supported solely from IRPs. Unlike prior Section 236 financings, which relied upon total project revenues to meet operating costs and debt service payments, these transactions rely only on the Section 236 payments. The tenant portion of a project's income is not pledged to the IRP bondholders.

Because of the structure of these financings and the track record of the program, real estate risk is

virtually nonexistent, but still a factor. Even though the IRP revenue stream is not subject to appropriation risk, expected ratings are at the 'A' rating level due to the risks of HUD's contract termination or subsidy reduction. The termination events involve elements of real estate risk that are generally not consistent with higher rating levels. Higher ratings may be possible only with very strong participants, if certain other risks can be fully covered, or for pooled financings.

Primary credit considerations include:

- Sufficient legal or other protections to mitigate any potential termination or reduction of the IRP by HUD;
- Proper regulatory oversight to ensure the project's continued eligibility for IRP;
- An experienced, capable oversight agency able and willing to provide this oversight;
- Appropriately sized reserves to cover any funding delays; and
- Debt service coverage to provide reserve replenishment, if necessary.

IRP Assistance

IRP assistance, by statute, is paid to mortgagees on behalf of mortgagors to maintain the viability of a low-income housing resource. These payments are not, and may not be paid directly to project owners. HUD wants to be sure that assistance goes to projects that provide habitable low-income housing for qualified tenants, so they require an "acceptable" public agency to provide regulatory oversight for the project. The amount the project receives is not tied to occupancy; the requirement is only that the units are in habitable condition and rented to qualified tenants. The key is the oversight, which ensures the project's eligibility to receive the IRP.

The assistance is calculated based on basic and market rents. The amounts are set forth in the amortization schedule in the original Section 236 mortgage and are fixed for the life of the mortgage. The total amount to be received is the "budget authority," and the amount scheduled to be received in any particular federal fiscal year is the "contract authority." Section 236 budget authority is not subject to annual appropriation. Bonds supported by the IRP should have maturity no later than the maturity of the IRP subsidy.

Assistance is paid in arrears after the filing of form HUD-3111 "Mortgagee's Certification and Application for Interest Reduction Payments." The expectation is that the mortgagee would legally pledge the IRP to the bond trustee for payment to bondholders. The bond trustee would be instructed to file this form in a timely fashion under the bond documents, with payment coming directly to the trustee. If payment goes to the mortgagee, proper protections would need to be in place to ensure timely and full remittance to the trustee. If the request is received by the 20th of a month, payment is wired usually by the first of the following month (and ordinarily not later than the fifth). No precise history exists about late payment from HUD, but since HUD Central and not the regional offices pay the subsidy, there are not the delays sometimes seen in the payment of Section 8 subsidies.

Debt service coverage and reserves

In order to cover for any potential delays in payment by HUD, a debt service reserve fund (DSRF) sized at three months of IRP payments is recommended for investment grade. Debt service coverage can be lower than would be needed under a project-based financing. This is due to the fact that the Section 236 bondholder is not subject to the risks of project revenues and expenses. Since the IRP revenues will be accessed each month, excess coverage is necessary only as a cushion and to be available to replenish the DSRF if needed. A coverage level of at least 1.05x for ratings at the investment-grade level is recommended. This coverage also provides a needed cushion in the event the number of units available for rental decreases, in which case HUD would reduce proportionately the IRP. Higher debt service coverage would be needed above the 'A' category.

Oversight

The lender (mortgagee) on these financings can be any entity if a public agency agrees to be the oversight entity (i.e., party to the IRP agreement) to assure compliance. If no public agency is involved, the mortgagee must be HUD-approved and the project must be FHA-insured, with HUD providing the oversight. Public agency responsibilities according to the HUD notice are:

- Monthly requests for the IRP;
- The processing of periodic rent increases;
- Physical inspections of the property to ensure habitability; and
- Monitoring to assure owner compliance with the terms of the IRP agreement and HUD rules governing the project.

In many cases, Standard & Poor's expects that the public agency will be an HFA. Most, if not all, HFAs have extensive experience with Section 236 mortgage loans and the administrative and asset management requirements listed above are well within most HFAs' core competencies. It is expected that having HFAs as signatories on IRP agreements will be considered acceptable oversight, especially if the HFA has significant experience with subsidized multifamily housing. An HFA should be prepared to detail its track record

with the Section 236 program, its asset management procedures, and to discuss its understanding of its responsibilities under the IRP agreement. Section 236 bond issues without an HFA as the public agency will be examined on a case-by-case basis.

Termination events

In the IRP agreement, HUD has the ability to terminate or reduce the IRP payments for the following events, and Standard & Poor's will look for the following remedies:

- The Section 236 mortgage is extinguished. In most instances, this will only occur with provisions for the full payment or redemption of the IRP bonds. In case of a foreclosure on the mortgage loan, the IRP should continue uninterrupted to the lender.
- The project ceases to be owned by an eligible owner. Eligible ownership entities are outlined in the HUD notice. To avoid this risk, the lender should covenant not to allow transfer of ownership to a non-eligible owner. In addition, the current owner should covenant to always remain eligible under HUD requirements.
- The lender is no longer mortgagee of record and the HUD secretary has not approved the lender's successor as mortgagee of record. The lender should covenant to always remain mortgagee of record through expiration of the IRP or receive prior written HUD approval of a successor.
- The public agency does not meet its obligation to monitor the operation and condition of the project or does not certify, in a manner acceptable to the HUD secretary, that it is satisfying this requirement. The public agency must meet the requirements of HUD as detailed in the "Oversight" section. Standard & Poor's will need to gain the necessary comfort that the HFA (or other oversight entity) is capable of performing this monitoring and certification on an ongoing basis.
- The borrower or the lender defaults under any provision of the IRP agreement. Standard & Poor's will rely on the oversight of the public agency to mitigate the risks that any ongoing violation under the IRP agreement could cause a termination of the subsidy. Most of the provisions of the IRP agreement entail normal operating procedures for Section 236 properties, and HFAs have excellent track records regarding continuation of the subsidy.
- An action of foreclosure is instituted by the lender, except in the event the lender gives to the secretary advance written notice of its intention to institute such foreclosure, and submits to the secretary in advance a plan, acceptable to the secretary, providing for continued eligibility of the development for receiving the benefits of Section 236.

Foreclosure should be handled through covenants in the bond documents that necessitate following HUD's requirements. The senior lender must agree in a document such as an inter-creditor agreement or subordination agreement that the senior lender will obtain the approval of HUD before initiating a foreclosure action.

The HUD secretary shall have the discretion to decrease the amount of the monthly IRP payment if the number of units in the project available for rental also decreases. Any such decrease in the IRP payment shall be, to the extent possible, in proportion to the decrease in the available units.

Reduction in units could be through a voluntary decrease by the owner, units rendered uninhabitable, or the casualty/condemnation of the units. The owner must covenant to maintain all units for rental through expiration of the IRP. HFA oversight limits the possibility of units becoming uninhabitable.

For casualty/condemnation events, property insurance that fully covers all bonds including the IRP bonds with a provider rated at least investment grade should be in place at closing. If the borrower decides to rebuild, insurance proceeds will be used (with public agency oversight) to reconstruct, and the IRP subsidy should continue uninterrupted. Standard & Poor's will look to covenants in the documents to assess the potential success of rebuilding on time and within cost.

If the borrower decides not to rebuild, IRP bonds will be redeemed either in full or pro rata in accordance with the reduction in the IRP. In order to ensure that there will be no shortfalls, business interruption insurance covering at least nine months of rental payments with a provider rated at least at

Bond/Mortgage Documentation

Information requirements will include at least the following:

- A Trust indenture. which must require that a default on revenue bonds cannot cause default on Section 236 bonds;
- A loan agreement;
- Cash flows;
- An IRP agreement;
- A use agreement;
- The original Section 236 mortgage with amortization amounts; and
- The new Section 236 mortgage.

Other documentation may be requested on an as-needed basis.

investment grade should be in place. This amount, coupled with the DSRF, should be sufficient to cover debt service during any potential delays in claims payment by the property insurer. In all instances where insurance proceeds can potentially be paid to IRP bondholders, Standard & Poor's will look for assurances that bondholders either are party to a mortgage on the property or have an "insurable interest" giving them rights to those insurance proceeds.

Property condition

Standard & Poor's will look for public agency representations that the upfront and ongoing physical needs of the property will be met fully as a result of the financing. As part of the condition assessment, Standard & Poor's will look for evidence from the public agency of sufficient demand to make the project viable going forward.

Standard & Poor's may also request third-party reports (engineering and environmental) to support the current and future condition of the project, as well as a market study and appraisal to gauge demand and financial viability. Any property insurance policies or business interruption insurance policies will be reviewed to ensure proper coverage, eligible uses, and the sufficiency of the provider's rating level.

Site visits will be part of the ratings process as determined on a case-by-case basis. Where the quality of the property or the capacity of the oversight agency is in question, a site visit is warranted to gain necessary information. ■

Public Housing Authority Debt

Public housing authorities (PHAs) can use future annually appropriated modernization funding to secure long-term debt due to legislative changes put into effect in 1998 that permit PHAs to borrow the funds sufficient to accelerate the modernization and repair of the aging and deteriorated housing stock in their portfolio.

The U.S. Department of Housing and Urban Development (HUD) administers the Capital Fund Financing Program (CFFP).

The greatest risk to bondholders investing in PHA debt secured by capital funds is that this money would not be appropriated by the federal government in amounts sufficient to pay debt service. This risk cannot be eliminated by the federal government except through direct support of debt service through some form of full-faith-and-credit pledge, which has not been part of CFFP transactions to date. However, this risk can be offset, as discussed below, through reserves and debt service coverage that anticipate funding cuts.

Standard & Poor's Ratings Services rates PHA debt backed solely by the annually appropriated HUD Capital Fund program in the investment grade category based on the following critical factors:

- Strong and extensive history of the federal government's support for public housing programs;
- Significant ongoing need for affordable rental housing for the lowest income segment of the rental population;
- Predictable mechanisms for allocating Capital Funds to individual housing authorities;
- Potential for strong support by HUD; and
- Bond structures that provide adequate reserves, additional bonds tests, and segregation of Capital Funds needed to support bond debt service.

The main factors that affect where the rating will fall are:

- The level of debt service coverage on the bonds, evidenced both by appropriation trend stresses, revenue projections and the coverage provided by the additional bonds test. All investment grade structures should include at least a six month debt service reserve fund based on maximum annual debt service;
- PHA's track record of HUD funding and creation of mechanisms to enhance predictability of funding levels;
- Evaluation of PHA's past performance in its modernization activity, including its obligation and expenditure history;
- Evaluation of the PHA's capital improvement plan, including ongoing Capital Fund leveraging as well as management's ability to undertake the scope of work;
- Strength of legal structure, including how the financing insulates bondholders from recapture or withholding of the Capital Funds (to the extent that the law permits) for any reasons,

including HUD sanctions due to performance, prior liens which may be placed on the funding, or flow of funds problems at the PHA level; and,
- Availability of a diversified stream of revenues, especially important at higher rating levels.

Essentiality, Longevity, And Predictability

In evaluating the history of public housing, three elements are clear contributors to the creditworthiness of capital funding:
- The essentiality of housing for low and very low-income people;
- The long track record of funding for public housing by the federal government; and,
- Increasing predictability of funding levels for individual public housing authorities.

Essentiality

The need for the public housing program is at the heart of gauging the federal government's continuing commitment to the program. A review of the demand for public housing, the general dearth of affordable rental housing, and the likely continuation of the undersupply indicates a high degree of likelihood that public housing will continue to be the centerpiece of the nation's supply of housing for those in greatest need. The federal government is no longer in the business of developing deeply subsidized publicly and privately owned housing and has moved toward a paradigm of mixed-finance, mixed-income housing that can sustain affordability by renting to higher-income tenants. The number of existing deeply subsidized federally assisted units continues to decrease due to the federal government's reduction in subsidy to fund new conventional public housing and the conversion of privately owned subsidized housing properties to market rate status upon expiration of subsidy contracts. Major production programs, such as the Low Income Housing Tax Credit program, although affordable, are targeted at higher-income tenants. Some segments of public housing tenancy, such as the elderly, who make up 32% of public housing tenants, are expected to increase significantly in coming years.

Predictability Of PHA Funding Levels

As part of analyzing appropriation risk, Standard & Poor's carefully considered the methodology for allocation of Capital Funds to the individual housing authority. Further changes in the Capital Fund allocations effected under the Quality Housing and Work Responsibility Act of 1998 (QHWRA) greatly enhance the predictability and stability of allocations to the individual PHAs by:
- Establishing a formula for the Capital Fund arrived at through negotiating rulemaking, which helps to ensure consistency of methodology over the years;
- Increasing predictability of the formula through clarification of factors that can affect funding; and
- Allowing for a replacement housing factor, under which PHAs may receive funds over a period of time for units that have been demolished.

Although there are many factors that could change a PHA's funding level, such as ongoing and backlogged needs, impact of unit reduction, and performance reward factors, projecting increases in PHA funding would not be consistent with investment grade ratings. What is consistent with investment grade ratings is the development of a worst case funding level.

Another significant factor that can affect PHA funding levels are sanctions that HUD is within its right to employ based upon PHA performance, discussed later under "The Importance of HUD Approvals".

For each PHA transaction, Standard & Poor's develops assumptions for funding levels based upon the PHA's actual Capital Fund allocation over time. HUD approvals clearly state that sanctions in relation to performance issues could not affect the level of funding below what is needed to make annual debt service payments while bonds are still outstanding.

Assessing The PHA Managerial Capacity

As part of the rating process, Standard & Poor's reviews managerial capacity of the PHA as well as elements of the organization's structure and overall mission that can affect the credit quality of the CFFP bonds. Standard & Poor's reviews the PHA's redevelopment plan including scope of work, financial plan, and strategy to ensure completion of work in a timely fashion. In addition, Standard & Poor's assesses the PHAs capacity to complete the redevelopment plan, based on its past construction and modernization performance, existence of institutionalized modernization procedures with checks and balances, and any changes in the procedures designed to address any needs for additional resources based on the scope of the work planned. Communication with HUD and timely submission of one-and five-year plans are critical, as is the PHAs history of timely obligating and expending annually allocated modernization funds. Finally, Standard & Poor's looks at program and financial oversight practices of the PHA, the board's background and role in overseeing the PHA and the project, and the experience, depth and capacity of

the PHA's senior staff members, including the modernization and construction team.

Debt Service Coverage

Although there is a long and positive track record overall for public housing authority funding, there is the potential for reductions in program funding, especially on a year-to-year basis. There are two levels of appropriation risk that must be considered. The first level is that the federal government will reduce the amount of capital funding to PHAs as a whole. The second level is that the individual PHA will suffer reduced funding as a result of issues directly associated with PHA performance or the method of allocating funds to the PHA. The key ingredient to offsetting these risks is to provide for adequate debt service coverage in the transaction to take into account these potential decreases. In this instance, debt service coverage means the amount of annual Capital Funds available to cover annual debt service on the bonds. In determining the appropriate stresses for rated debt, Standard & Poor's considers the following factors:

- Historical federal funding levels, taking into account largest decreases in funding;
- Method of allocating PHA share, accounting for key aspects of the formula funding such as the impact of unit reduction; and,
- PHA risk and performance issues as well as track record in funding receipt.

To help analyze the potential effect of appropriation risk, Standard & Poor's tests coverage levels, assuming an annual reduction of appropriations consistent with the current trends to determine if bonds can sustain at least one times coverage over the term of the financing.

In addition, coverage levels assume that Capital Funds go directly to the bond trustee and that HUD has provided legal covenants that funding will not be withheld due to poor PHA performance (see "The Importance of HUD Approvals" below). In analyzing the appropriate coverage level for individual transactions, Standard & Poor's analyzes the actual coverage in conjunction with the level of capital needs and likely leveraging. The higher the coverage levels, the greater stress the revenue stream can withstand without jeopardizing debt service.

The Importance Of HUD Approvals

HUD is the administrator of PHA funding. For that reason alone, HUD approvals play a very important role in PHA transactions and may account for rating differences depending on HUD approvals each PHA is able to secure. In all investment grade transactions, Standard & Poor's expects that the PHA will secure HUD approval of the development plan and the bond transaction upfront HUD does have the right to apply sanctions for poor PHA performance that could affect funding levels. Therefore, reducing the risk of sanctions or other actions that could interrupt funds flow is a critical component of investment grade transactions. In these transactions, HUD has included in its approval documents clear statements that it will not sanction PHA funds below the amount needed to pay debt service, albeit, subject to appropriations and to the extent permitted by law. Although this has been viewed positively, there are still provisions in the housing law that direct HUD to sanction poor performing PHAs. If a PHA does not obligate its allocation in a timely manner, then HUD's withholding of funds may jeopardize the PHA's ability to pay bond debt service on schedule.

In addition, the proportional reduction of funds to account for the period of time that the PHA is out of compliance serves to erode the debt service coverage in the transaction for the year in question, and may also impact their ability to pay debt service. In contrast, the recapture of funds that have not been timely expended is not a threat to debt service. This is because recapture occurs four years after funds are allocated to the PHA. Because debt service payments are segregated in each allocation year, the debt service for the recaptured year would have already been paid. Therefore, it is the penalty associated with an obligation violation (withholding) that is more of a rating concern than the penalty associated with expenditure violations (recapture).

In order to analyze the likelihood of Capital Fund allocations being withheld by HUD, Standard & Poor's requests detailed information in relation to Capital Fund obligation histories from PHAs requesting a rating on a bond issue. At a minimum, this information includes data, presented through HUD close out certificate reports and reports from the HUD LOCCS system, from at least the prior ten fiscal years that demonstrates when the PHA "fully obligated" its modernization funding. While not as important in relation to debt service payments, expenditure histories also provide useful information to help determine the PHA's management competency in adhering to HUD deadlines.

By reviewing this information, Standard & Poor's is better able to assess the potential for sanctions that would have a negative impact on a PHA's ability to pay bond debt service. If a PHA has violated these deadlines in the recent past, adjustments to the transaction's structure may be needed (either in the form of higher debt service coverage or larger debt service reserve funds or both) to mitigate credit concerns, or a lower credit rating may be in order for the transaction.

To minimize the effect of this legal directive, HUD agrees in its approval documents to permit PHAs to use unobligated funds from allocation years to make debt service payments, and said payments are a permitted use to cure the obligations violations. While this does provide some comfort that some funds are available to pay debt service in a withholding scenario, there is no way of knowing how much money will be available for debt service; if the unobligated funds are sufficient to make the debt service payment that would be missed due to allocations withholding. Therefore, the PHAs past modernization funds obligation performance becomes paramount in determining the likelihood that funds will be with held due to a HUD sanction against the PHA.

The Role Of Reserves

Reserves are necessary to ensure that no bond payments are missed due to government shutdowns, resulting late appropriations, and/or temporary severe reductions in appropriations. All investment grade transactions should include a debt service reserve fund (DSRF) sized at least six months debt service based on maximum annual debt service on the bonds. The reserve fund can be funded from bond proceeds, should be funded upfront, and, if invaded, should be replenished in the flow of flows before any Capital Funds can be released to the PHA, and replenished prior to the next interest payment date.

The DSRF also serves to protect against any administrative delays in the receipts of Capital Funds by PHAs. Typically, the funds appropriated by Congress for Capital Fund become available in the October/November of the year following the beginning of the federal fiscal year (Oct. 1). The careful timing of debt service payment dates, coupled with the DSRF, can provide a significant cushion to bondholders and insulate them against the risk of late budgets or other delays impacting debt service.

Also viewed favorably are representations from HUD that protect debt service against any delays caused by the process whereby PHAs requisition and receive approval for their allocation of Capital Fund. This occurs as part of the PHA's annual plan submission to HUD, which could be subject to delays either at HUD or the PHA.

Federal Funding History

While overall commitment of the federal government to the public housing program is important, examination of modernization funding is the main focus in understanding Capital Fund transactions. Because development funding for public housing did not include ongoing reserves for improvements, by 1968 Congress needed to address the severe deterioration in the housing stock through a modernization funding program. That early program has grown from initial appropriation to fund specific modernization needs of $35 million in 1977 to the Capital Fund program of today, which was funded at about $2.4 billion in 2006. Since 1977, Congress has appropriated almost $60 billion for public housing modernization. Because of the severe modernization needs of public housing, the long history of funding, and the importance of the program to the federal government, it is reasonable to assume that some funding will continue for many years. However, recent history shows a declining trend of Congressional appropriations for modernization funding over the last five fiscal years. Therefore, prudent leveraging and reserve sufficiency are very critical components of all investment grade PHA Capital Fund transactions.

Key Legal Features

Investment grade transactions include certain legal provisions. To achieve an investment-grade rating, issuers and their advisors should consider incorporating the following features in their transaction documents:

- The PHA grants the indenture trustee or collateral agent on behalf of the bondholders a perfected security interest in the Capital Fund program moneys to be received by the PHA;
- Debt service payments are legally separate from all other Capital Funds received from HUD. Debt service payments and any replenishment of reserve funds are clearly delineated and have a priority of payment only to bondholders, if possible before any remaining funds are released to the PHA;
- Capital Fund monies flow directly from HUD to the indenture trustee or collateral agent to pay debt service without passing through the PHA;
- Capital Fund monies to be used for debt service are held under the indenture or deed of trust and are not be commingled with any other funds of the PHA;
- The pledge to bondholders includes not only Capital Fund monies but also the PHA's contract rights pursuant to which the Capital Fund monies are paid as well as the PHA's rights under any successor program;
- An "additional bonds" test demonstrating that the lesser of (i) the prior fiscal year's allocation of Capital Fund; or (ii) the average Capital Fund receipts for the prior three years, will provide coverage of maximum annual debt service (including the proposed bonds) at a coverage level determined by Standard & Poor's at the time of the rating for any additional bonds to be issued that will be on parity with the existing debt; and,
- HUD stipulates in its approval documentation that (1) use of Capital Funds for debt service payments is a permissible use of funds, (2) no subsequent change in the permitted use of Capital Fund monies will affect HUD's obligation

to pay the Capital Fund monies, (3) amounts pledged to the payment of debt service shall not be available for any other purpose, and (4) amounts payable to the indenture trustee or collateral agent are not subject to recapture for any reason whatsoever.

Standard & Poor's also reviews the legal covenants made by the PHA and indenture trustee or collateral agent to ensure compliance with the letter and spirit of the Capital Fund program. For example, the PHA should notify the indenture trustee or collateral agent immediately upon being notified by HUD of the availability of the annual Capital Fund allocation. The indenture trustee or collateral agent should then, in turn, proceed to requisition the Capital Funds immediately from HUD and hold these funds in appropriately rated investments until paid to bondholders.

Standard & Poor's requests legal comfort as to the perfection and priority of the security interest granted by the PHA in (or as to the nature of absolute assignment by the PHA) of all collateral held by the indenture trustee or collateral agent, the status under the U.S. Bankruptcy Code of the PHA, and the effectiveness of the grant by HUD of all representations, warranties, covenants, approvals, permits, and waivers necessary to effect the transaction.

Pooled Transactions

Standard & Poor's rates pooled transactions, which allow multiple PHAs access to the capital markets through one financing. Two elements of these transactions are noteworthy from a credit perspective—first, what pledge is being made by PHA pool participants, and secondly, the level of oversight required to ensure that a financing consisting of multiple authorities remains a strong credit.

The pooled transactions completed to date have had multiple authorities participate, but the obligation to pay debt service on the bonds is proportional—that is, each authority is legally obligated to pay only its proportional share of bond debt service. In Capital Fund transactions, the benefit of pooling lies more with the PHA's ability to gain access to the capital markets (due to shared issuance costs) rather than bondholder security. Therefore, in a pooled transaction each authority's debt service is structured individually without reliance on another authority's funds to meet the required coverage level. In addition, each authority must have all the other components in place individually (approvals, reserves, among others) for the entire pooled financing to receive a rating. The rating level for which the pool transaction is eligible is based on the creditworthiness of the weakest PHA participating in the pool.

The need to monitor the proportional feature of these transactions make it necessary to have oversight performed by a competent entity to preserve the credit quality of the bonds. The oversight entity assists in monitoring both the programmatic and financing aspects of the transaction over the life of the bonds. Programmatic oversight involves monitoring the manner in which a PHA expends bond proceeds to ensure it will not result in a reduction of future capital fund receipts. Financing oversight involves ensuring that all bond covenants are met and that the information required by PHAs in these financings is provided to HUD, Standard & Poor's and other entities as required in a timely manner

Acceptable oversight entities are familiar with affordable housing involving government regulation. As part of the rating process, Standard & Poor's evaluates the oversight entity's past track record with the capital markets and housing finance, as well as its association with public housing. The entity's competency should extend to the geographic area covered by the pool's participants. State HFAs, for example, typically have long involvement with affordable housing and successful track records, and are natural candidates for this role, although other entities perform oversight on rated transactions. With a strong and competent oversight entity in place, the credit quality of pooled transactions can be as strong as single authority transactions.

Federal Funding History

While overall commitment of the federal government to the public housing program is important, examination of modernization funding is the main focus in understanding Capital Fund transactions. Because development funding for public housing did not include ongoing reserves for improvements, by 1968 Congress needed to address the severe deterioration in the housing stock through a modernization funding program. That early program has grown from initial appropriation to fund specific modernization needs of $35 million in 1977 to the Capital Fund program of today, which was funded at about $2.4 billion in 2006. Since 1977, Congress has appropriated almost $60 billion for public housing modernization. Because of the severe modernization needs of public housing, the long history of funding, and the importance of the program to the federal government, it is reasonable to assume that some funding will continue for many years. However, recent history shows a declining trend of Congressional appropriations for modernization funding over the last five fiscal years. Therefore, prudent leveraging and reserve sufficiency are very critical components of all investment grade PHA Capital Fund transactions. ■

Housing Finance Agencies

Housing finance agencies (HFAs) have built up a considerable level of expertise in real estate finance, development, and portfolio management. Because of their prudent and conservative approach and many successful years of bond issuance, many HFAs have built up significant net assets in their own general funds or under various bond resolutions.

Standard & Poor's Ratings Services has given varying levels of credit support to an HFA's bond programs, particularly if an agency has a proven track record in management and substantial financial resources outside of an indenture. To determine if an HFA is eligible for this flexibility, Standard & Poor's considers:

- Agency's managerial expertise
- Issuer's financial strength
- Purpose of investment or credit support, and
- Portfolio performance and cash flow strength of the bond program.

Rated HFAs may pledge their GO to financings to cover all or a portion of security for bonds. External evaluators, such as U.S. government agencies, credit enhancers, and government-sponsored enterprises, also look to issuer credit ratings as a way to assess the overall capacity and credit quality of an agency.

HFA ICR Criteria

Standard & Poor's analytical approach to assessing an issuer credit rating (ICR) for an HFA takes market, as well as agency-specific, risks into account, particularly when evaluating how an agency generates revenues and what factors could adversely affect its ability to service its GO debt. In assigning HFA ICRs, Standard & Poor's assesses the stability and level of agency capital available to absorb loan losses and other charges related to its debt structure, as well as the quality and liquidity of its assets. ICRs entail an in-depth assessment of financial strength, management, and the agency's relationship with state or local government. Economic factors endemic to the state or locality in which the agency operates also are considered in light of the agency's financial position and the loan portfolio.

Agency assets consist primarily of mortgage loans for single-family homeownership and multifamily rental housing for low-and moderate-income individuals and families. The relatively low tax-exempt interest rates and access to federal, state, and local housing assistance programs provide the necessary subsidy to create high-quality, below-market-rate loans. In addition, HFAs are answerable to state legislatures and other governmental entities. The public nature of HFAs makes the autonomy of their management and security of general net assets an important credit consideration.

Standard & Poor's evaluates the capacity and willingness of HFAs to repay GO debt by examining five basic analytical areas:

- Earnings quality, financial strength, and capital adequacy,
- Asset quality,
- Debt levels and types,
- Management and legislative mandate, and
- Economy.

Earnings quality, financial strength, and capital adequacy

In order to gauge earnings quality and stability, Standard & Poor's reviews financial performance for the most recent five years, with emphasis placed on any notable fluctuations. A premium is placed on consistency of performance. However, one bad year is not necessarily a negative factor, unless it signifies the beginning of a permanent shift.

Standard & Poor's uses income statement analysis to evaluate revenue sources, cost controls, and profitability in tandem with a balance sheet analysis of liquidity, capitalization, and asset quality as discussed below. Both approaches require evaluation of an agency's cash accumulation levels, types of investments, interfund borrowing, historical use of debt, loan loss reserves, REO, net charge-offs, equity, and quality of unrestricted net assets.

The principal areas of analysis are leverage, profitability, asset quality and liquidity. While all these factors are important, Standard & Poor's tends to place the highest emphasis on equity, since it gives an indication of the resources available to sustain operations in difficult circumstances or fund programs that further the mission of expanding housing affordability. HFAs tend to be well-capitalized entities that have been able to build equity in various environments.

Profitability indicates how efficiently an agency operates. Agencies that are able to grow large loan portfolios typically have higher profitability than

Key financial Ratios

The following are some of the ratios Standard & Poor's uses in analyzing the financial performance and earnings quality of state HFAs. While many other ratios may be incorporated on a case-by-case basis, these ratios provide a benchmark for comparison among other state HFAs.

Profitability ratios

Return on average assets is the most comprehensive measure of an agency's performance. However, when evaluating return on assets, it is necessary to examine both the amount and quality of the reported earnings.

Net interest income margin measures the most important source of quality earnings-net interest income. The ratio is affected by the volume and type of earning assets, as well as the cost of funds. Key to continued profitability is an agency's ability to manage its net interest margin.

Leverage ratios

Adjusted unrestricted assets to total debt, adjusted unrestricted assets to total GO debt, total equity to total assets and total equity and reserves to total loans measure an agency's capital base available to promote investor confidence and absorb operating deficiencies.

GO debt to total debt (GO debt exposure ratio) measures the extent to which an agency has leveraged its GO pledge. It is a good indicator of the potential dispersion of an agency's unrestricted assets to support GO debt.

Liquidity ratios

Total loans to total assets and total investments to total assets measure an agency's ability to access funds for short-term demands.

Asset quality ratios

Nonperforming assets to total loans, net charge-offs to nonperforming assets, loan-loss reserves to loans, and loan-loss reserves to nonperforming assets measure the diversity and quality of an agency's portfolio of earning assets. Net charge-offs are an indication of the actual loss experience of the mortgage portfolio, while loan-loss reserves should be adequate to absorb those losses.

Top-Tier Housing Agency Criteria

A predecessor to the ICR, the top-tier designation is Standard & Poor's recognition of an HFA's history of superior portfolio management and underwriting, depth of financial resources, and prudent investment policies. Standard & Poor's expects top-tier agencies to meet the financial thresholds and have the highest level of performance in the categories described below. Standard & Poor's maintains top-tier designations on a smaller number of agencies than on which it has ICRs.

Elements for the top-tier designation are similar to those for ICRs and include:

- Bond issuance
- Sufficient unrestricted net assets
- Internal controls and financial management
- Portfolio quality
- Administrative abilities
- Investment policy, and
- Government support.
- The consistency of bond issuance reflects the agency's ability to resolve difficult situations amidst changes in the economy, governor and legislature.
- Analysis of the other components is similar to that of an ICR.

those whose portfolios are stable or declining. The ability of an HFA to issue debt at a low enough rate to support affordable loans at a higher rate, "earning spread", is a key element to profitability and speaks to an agency's financial acumen and access to capital markets.

Standard & Poor's will adjust leverage and profitability measures for GASB 31, the accounting rule that requires governmental entities to reflect their assets and income for changes in the value of investments. HFAs have considerable investments that they will hold until the term of the bond issue. GASB 31 requires these investments to be reflected at market value and for that change in value to be reflected as a loss or gain in income. Because agencies will not liquidate investments prior to their maturity at face value, GASB 31 is not relevant to HFAs and introduces unnecessary volatility in net income and net assets.

Besides the asset quality elements described below, Standard & Poor's assesses an HFA's loan portfolio through ratios. The main ratios measure an agency's loans that are at least 60 days or more delinquent or in foreclosure against an agency's assets and reserves. An agency with a comparably high percent of NPAs to assets will not be penalized as much if it has a high level of reserves to cover losses on those loans.

The final set of ratios measure an agency's liquidity to cover short-term financial needs. The main ratio of loans to assets tends to be among the most stable of all HFA ratios. While desirable, high liquidity is often at odds with an agency's mission of providing access to loans and reduces profitability. As a result, liquidity ratios receive the lowest weight in terms of significance.

The financial analysis described above is viewed within the risk profile of an agency. One tool that Standard & Poor's incorporates to determine an agency's risk profile is capital adequacy analysis. This process involves adjusting an agency's equity for any risks and shortfalls it may have to cover in scenarios that include default or catastrophe, such as an earthquake. Standard & Poor's will evaluate an HFA's loans, contractual obligations and restrictions on equity to determine what assets would be available for the agency to honor its commitments or maintain the ratings on various bonds.

Standard & Poor's uses three principal ratios to measure an HFA's capital adequacy:

- Adjusted unrestricted assets to total debt outstanding (leverage ratio),
- Adjusted unrestricted assets to total GO debt outstanding (GO leverage ratio), and
- GO debt exposure (GO debt to total debt outstanding).

Standard & Poor's adjusts an agency's unrestricted assets based on the level of reserves needed to support GO debt and surpluses available from secured bond resolutions that are available for transfer to the agency's general fund. The "adjusted" unrestricted assets position is then divided by total debt and GO debt (rating dependent) in order to gauge the level of assets available to all bondholders.

HFAs with an investment-grade ICR are expected to maintain a minimum leverage ratio of 4%, with available liquid assets equal to 2% of total loans outstanding.

GO debt exposure is a good measure of the potential dispersion of an agency's unrestricted assets in the event a call to the agency is required for debt service on GO debt. The ratio is derived by dividing GO debt (rating dependent) by total agency debt outstanding. Exposure is classified as low (0%-20%), moderate (21%-50%) and high (above 50%). Standard & Poor's is concerned with an increasing GO debt exposure ratio in conjunction with deterioration in unrestricted assets, as measured by the leverage ratios and the GO debt leverage ratio.

Asset quality

In light of the fact that HFAs cannot levy taxes or raise user fees, the assessment of asset quality, in tandem with earnings quality, is of paramount importance in determining an appropriate ICR. This is important even for HFAs that have no GO debt outstanding. Many HFAs have built up considerable equity in their general funds and bond programs and have significant control of these assets. In order to determine the likelihood of asset accumulation over time and the likelihood of availability, Standard & Poor's evaluates the quality of the agency's mortgage collateral, focusing on portfolio size, dwelling type, loan types, payment characteristics, mortgage insurance and guarantees, loan underwriting criteria, and location. The agency's loan portfolio performance is measured against comparable agency and Mortgage Bankers Association (MBA) delinquency statistics to determine relative performance, and historical losses are measured to determine the effect on net assets.

Standard & Poor's also evaluates the quality of the agency's investment portfolio. In many instances, investments make up a significant portion of an agency's asset base. In general, Standard & Poor's analysis focuses on the investment of net assets, restricted and unrestricted, as well as bond funds. The amount of funds being invested, who manages the money, how daily investment decisions are made, and the guidelines that are in place are reviewed. The agency's investments should meet Standard & Poor's standard permitted investment guidelines. Principal protection and liquidity should be the primary goals of an HFA's investment policy.

Standard & Poor's must feel comfortable that a municipal issuer, such as an HFA, has specific guidelines and systems in place to manage its exposure to derivative products and interest rate volatility.

If an HFA invests in intergovernmental pools, these investments can further the goal of principal protection and liquidity by using the same guidelines outlined for HFA bond and general funds.

Debt levels

Since HFAs are generally highly leveraged entities, an agency's GO debt philosophy—as it relates to the other ICR rating factors—is a crucial determinant of credit quality. If an HFA serves as a conduit and issues limited or special obligation bonds backed only by mortgages, risk associated with debt repayment is unlikely to pose risk to the HFA's unrestricted assets. In cases when an agency pledges its general obligation as ultimate credit support, risk to the agency is potentially increased. This will be particularly true if the HFA is issuing GO bonds to finance non-earning assets. Standard & Poor's refers to this risk as GO debt exposure. This exposure may be quantified through the GO debt exposure ratio as discussed above. Another factor is the agency's exposure to interest rate and other risks through the issuance of variable rate debt and hedging instruments. Standard & Poor's Debt Derivative Profile (DDP) evaluates an issuer's risks related to debt-associated derivatives. A discussion of the methodology is included in the Municipal Swap Criteria.

Management and legislative mandate

Standard & Poor's assesses the operating performance of HFAs, focusing on organization, philosophy, strategies, and administrative procedures. Standard & Poor's assesses the continuity of management and the agency's ability to resolve difficult situations during its operating history. The agency's administrative capabilities, such as portfolio oversight, loan-servicing capability, planning procedures, and sophistication of technology, are key factors in evaluating management.

Next, financial management is considered through historical financial performance, as well as the experience and qualifications of financial personnel and overall management. Although some aspects of financial management, such as cash flow generation, may be contracted out, effective management includes active review and oversight of all financial operations.

In evaluating an HFA's legislative mandate, Standard & Poor's needs to be assured that the long-term viability of the agency has the full support of public officials. Security of agency net assets and continued management autonomy are essential.

In many instances, much of the initial funding for the agencies may have been provided by the state or locality, and key members of the agencies may be appointed by elected officials.

The key to this analysis is to identify detractors of the authority, if there are any, and find bipartisan support for the authority's programs. This can be demonstrated by a history of legislative approvals of annual budgets, special programs, additional funding, housing legislation, and so forth. Also, the autonomy of the management team, should be unaffected by gubernatorial and legislative elections. The agency also should anticipate the housing needs of the legislatures' constituents and continue to develop programs to address them.

Economy

Analysis of the state or local economic base includes evaluating the impact of changes in demand for housing, the impact of changing regulatory and legislative environment for low-and moderate-income housing, and the dependence on specific industries and how that may affect the agency's mortgage portfolio.

Housing in larger states with more diverse economies is less affected by economic trends than housing in smaller geographic regions. Therefore, the critical factors will vary based upon the region in which the HFA operates. ■

Bond Insurance

The dramatic growth and acceptance of the use of bond insurance has been one of the most influential developments of the past 35 years for capital markets. From its modest beginnings in 1971, when Ambac Assurance Corp. wrote its first policy in the U.S. municipal bond market, the use of financial guaranty insurance has become not only a significant mainstay of government infrastructure finance in the U.S. but also a major force in asset-backed, structured finance, and project finance transactions around the world. According to the financial guaranty industry's trade organization, the Association of Financial Guaranty Insurers, insurance in force (principal and interest) at the end of 2005 totaled nearly $2.9 trillion. In 2005, bond insurers wrote coverage on more than $540 billion in par value of obligations.

The success of bond insurance as a product reflects the fact that it provides a tool that issuers use to lower their financing costs and to broaden the investor base for their securities. Additional factors that have supported this success include the attractiveness of bond insurance to retail investors who are risk-averse, the higher proportion of more complex transactions, periodic flights to quality, and greater numbers of issues eligible for insurance.

Insurance penetration in the various markets served varies, based largely on the length of time the bond insurers have been active in the particular market, the extent to which a robust capital market has developed in a segment or region, and the existence of viable competitors or alternate issuance structures that do not require bond insurance. The insurers' highest penetration is in the U.S. municipal market, where more than 50% of the new issuance has been insured in recent years. Penetration is lower in the U.S. structured finance market, reflecting the availability of alternate issuance structures that do not require insurance. Outside the U.S., penetration is less developed, reflecting a combination of less-developed capital markets, significant competition, and the fact that insurers have been active in these markets for shorter periods of time.

A bond insurance policy represents a financial guaranty company's unconditional and irrevocable pledge to pay principal and interest in a timely fashion should the issuer of the debt be unable to do so. The Standard & Poor's Ratings Services financial strength rating is a current opinion of the financial security characteristics of an insurance organization with respect to its ability to pay under its insurance policies and contracts in accordance with their terms. In addition to their financial strength ratings, the monoline companies also carry a companion financial enhancement rating. This rating provides investors with a specific opinion regarding an insurance company's willingness to pay financial guaranty claims on a timely basis.

By regulation, since 1986, an insurer wanting to conduct bond insurance business in the U.S. had to be operated as a monoline company—that is, a separately structured and capitalized entity operating solely as an insurer of third-party debt. The most prevalent business model for a primary insurer, in terms of numbers of active companies and even more so in terms of debt insured, is to be 'AAA' rated. All the major monoline insurers have 'AAA' ratings and are engaged in the guaranty of public finance debt—the older, more established segment of the business that dates back to 1971—as well as taxable structured financings, which is a segment of the business that began in 1986. All the major 'AAA' rated monoline primaries also insure transactions outside the U.S., either directly or through supported affiliates. There are two niche primary insurers, one 'AA' rated and one rated 'A', that participate in several of the same sectors as do the 'AAA' primaries but seek out certain niches, either based on lower credit quality or limited 'AAA' monoline involvement, where they can compete effectively. Many non-U.S.-based multiline insurers (insurers that participate in several product lines) still participate in the financial guaranty business outside the U.S. and as reinsurers of the U.S.-based monoline insurers.

Rating Methodology

Standard & Poor's rating methodology for monoline bond insurers addresses many of the same factors involved in any insurance company's financial strength rating. However, the criteria developed for bond insurers have been tailored to the unique aspects of the financial guaranty business and differ in important respects.

One critical difference compared with other insurance products is the expectation that only minimal

net losses will occur in a normal operating environment. This expectation is based on the credit quality of the insured portfolios, which overwhelmingly consist of issues that are investment grade or near investment-grade quality on an uninsured basis. In other words, it is presumed that insurers only take on liabilities judged to have minimal loss potential, except under extreme economic conditions.

To date, losses incurred by monoline financial guaranty businesses rated by Standard & Poor's have, in fact, been minimal. Based on this experience, there is little basis for establishing large reserves that normally are found with more traditional insurance lines, except where individual transactions have necessitated "case-basis" reserves.

Since the typical reserve analysis is not applicable, Standard & Poor's uses a different approach—the capital adequacy model—to determine the adequacy of capital reserves. This model tests the ability of the bond insurer to handle claims that would be expected to occur in a hypothetical worst-case scenario. This scenario is structured to incorporate a level of economic stress far more severe than might be expected to occur in the normal cyclical functioning of the world's economy.

Another difference is that the criteria have been established with rating durability in mind.

Table 1 **Reinsurance Credit For Business Ceded To A Monoline Reinsurer**

(%)	—Monoline reinsurer rating— AAA	AA	A	BBB
Ceding Company Rating				
AAA	100	70	50	N/A
AA	100	75	70	50
A	100	80	75	70

N/A—Not applicable.

Table 2 **Reinsurance Credit For Business Ceded To A Multiline Reinsurer**

(%)	—Multiline reinsurer rating— AAA	AA	A	BBB
Ceding Company Rating				
AAA	95	65	45	N/A
AA	95	70	65	45
A	95	75	70	65

N/A—Not applicable.

Investors expect that bond insurers' ratings will be stable and not subject to frequent adjustment based on the normal ebbs and flows of credit quality over the traditional economic cycle. While the criteria have been crafted to encourage sound business practices that should result in stable ratings, it is not so limiting that ratings would never change. Poor execution of the business plan, underwriting practices, or risk management, or decidedly adverse credit quality changes to the underlying insured bonds, could result in a change to the insurer's rating.

The following sections highlight rating criteria for rated insurers operating in the monoline format. Criteria for lower rated insurers is the same as for 'AAA' rated insurers in many respects, differing primarily with regard to underwriting, where the insurer can insure a higher proportion of speculative-grade transactions; capital adequacy, where the insurer is not required to be as strongly capitalized relative to risk assumed as would be an 'AAA' rated insurer; and credit for reinsurance, where the credit given for a particular reinsurer is somewhat higher and the rating eligibility requirement is less restrictive.

Monoline Insurers

In assessing the financial strength of each monoline bond insurer, Standard & Poor's focuses on the following areas detailed below.

Ownership

Standard & Poor's is comfortable with mature insurers having significant public ownership as long as the insurers practice long-range capital planning, including a proactive capital sourcing philosophy that proposes to access capital well before it might be needed. Debt owed to third parties can also be appropriate for mature insurers, as long as it is limited to a modest 15%-20% of the holding company's capital structure and its maturity structure is consistent with the capital-generating ability of the business.

Standard & Poor's believes that the ideal ownership profile of a newer, less-established insurer should consist of large institutional investors of high credit quality with a firm commitment to the industry. The ideal capital structure for a holding company is 100% equity. How-ever, minimal holding company leverage is not a concern as long as each debtholder also holds equity and all debtholders hold the same mix of debt and equity, as ownership creates a commonality of interest among investors. The presence of high net worth individuals or public ownership of stock would not be viewed negatively, provided that such ownership is very limited. Until the insurer has reached a level of maturity characterized by several years of successful operations, Standard & Poor's does not consider

the insurer to be seasoned enough to become significantly reliant on the sometimes extremely fickle public markets for access to capital.

Our minimum capital level for start-up bond insurers is the greater of $300 million (paid-in and contingent capital), of which two-thirds must be paid-in, and that amount necessary for the insurer to demonstrate capital adequacy under Standard & Poor's capital adequacy model. At this capitalization level, Standard & Poor's believes that a company should be able to operate successfully, attracting top-level reinsurers, achieving over time a large diversified insured portfolio, hiring and retaining highly qualified personnel, and meeting certain unforeseeable single-risk losses.

Any capital commitments are risk-weighted and must meet specific rating requirements to be credited toward the minimum capital target (see "Reinsurance" and "Bank lines and LOCs, capital support from third parties, and parental support" sections below for more information). For example, in the context of an 'AAA' financial strength rating, a commitment from an 'AAA' owner will be given 100% credit, a commitment from an 'AA' owner will be given 70% credit, and a commitment from an 'A' owner will be given only 50% credit. If the owner has a lower rating or no rating, no credit will be given toward the minimum goal.

Management

Senior management is evaluated in terms of experience in the bond insurance industry, related credit analysis, and capital markets. Management's ability to establish strong operating and monitoring controls, including expense and risk management and surveillance, is a key factor. Managerial depth and an awareness of the relationships between risks and premium structure are also evaluated.

Underwriting and risk management

A key assumption in Standard & Poor's rating methodology is that the insured portfolio will meet credit quality composition standards. For 'AAA' rated insurers, this means the portfolio will consist overwhelmingly of municipal and structured finance issues with an investment-grade (rated 'BBB-' and above) risk of default. For 'AA' rated insurers, the portfolio can contain up to 15% 'BB' rated issues, and 'A' rated insurers can have 'BB' rated issues up to 40% of the municipal segment and up to 25% of the structured segment of the portfolio. To validate this assumption and to assign credit estimates for transactions in the overall portfolio that help determine capital charges (a measure of portfolio risk), Standard & Poor's performs a separate credit assessment of each issue sold on an insured basis. In addition, Standard & Poor's meets regularly with senior underwriting management to review and discuss underwriting criteria.

To minimize the effect of any negative sector trends or local economic deterioration, Standard & Poor's expects the insured portfolio to be diversified with regard to the sector type and geographic location of the issuer. Standard & Poor's also monitors single-risk concentrations to prevent excessive exposure to any one credit.

In addition to reviewing the credit quality of issues at the time of insurance, Standard & Poor's also periodically monitors the bond insurer's portfolio to look for any significant credit deterioration that might give rise to a need for additional capital. This is accomplished by a review of the insurer's surveillance activities, as well as Standard & Poor's own independent examination of the outstanding portfolio. Standard & Poor's monitors any credits listed on CreditWatch on an ongoing basis to assess any vulnerability to claims payment.

Capital adequacy

Among all the key rating areas examined, capital adequacy forms the foundation for the capacity to pay claims if needed. This area is examined more extensively later in this article in the section titled "Standard & Poor's Capital Adequacy Model." This section defines the role of capital adequacy in our analysis and provides a detailed description of our capital adequacy model, including its key inputs and outputs, the factors that most influence the results, and the key metrics based on the output of the model. The model, which is a powerful tool for evaluating capital adequacy but not the sole determinant of the rating, is periodically reviewed and updated as circumstances warrant.

Reinsurance

Standard & Poor's capital adequacy model recognizes that reinsurance (or reinsurance-like lines or LOCs, committed capital facilities, and parent-company support—collectively "soft capital") can provide valuable risk-sharing and capital augmentation benefits. The benefits are risk adjusted to reflect the credit quality of the third-party provider, and capped by individual provider and in the aggregate to avoid undue reliance on third parties. Moreover, benefits are granted only where a provider has been judged to possess the willingness to perform under the related contacts in a full and timely manner. Our criteria relating to credit for soft capital incorporate an up-to-date evaluation of the reinsurance industry's dynamics and performance and rely on the latest analytic tools and techniques for assessing risk.

Traditional reinsurance. The credit given for traditional reinsurance is a function of several factors, the most important of which are the reinsurer's rat-

ing; the durability of that rating; the ceding company's (beneficiary's) rating, which defines the level of certainty of performance desired; and the fact that the pool of active reinsurers is quite concentrated and highly correlated.

Monoline reinsurers—those that only write financial guarantee business—are desirable counterparties reflecting their commitment to the business and the fact that their ratings have proven to be highly durable. By definition, a monoline reinsurer is deemed to possess the willingness to pay claims in full and on time because its failure to do so would severely inhibit its ability to attract new business. *(See table 1 for a listing of reinsurance credit given for monoline reinsurance.)*

On the other hand, multiline reinsurers—those that write reinsurance over many product lines—are in aggregate somewhat less desirable given that their ratings have been comparatively less durable and they have a checkered history of participation in the financial guarantee sector. For these reasons, the credit for reinsurance from multiline reinsurers is five percentage points lower than the credit given to comparably rated monoline reinsurers. (See table 2 for a listing of reinsurance credit given for multiline reinsurance).

In addition, multiline reinsurers have, on occasion, demonstrated a propensity to handle financial guarantee claims using the time-honored traditional reinsurance practice of investigating first, then negotiating, and finally paying the negotiated claim. This practice fails to meet the needs of the financial guarantee market, which relies on timely payments. Therefore, for multiline reinsurance to receive the credit listed in table 2, two conditions must be met: (1) the reinsurer must get a Standard & Poor's financial enhancement rating, which signals that it has met our standards regarding willingness to pay claims in a timely manner, and (2) the financial guarantee product line for the reinsurer must be deemed to be a material part of the reinsurer's business, which dictates that a failure to make timely payment of a financial guarantee claim would result in immediate financial strength and financial enhancement rating downgrades. The combination of these two requirements gives us comfort that the multiline reinsurer's willingness and incentive to make timely claims payments is on a par with the monoline reinsurers.

Bank lines and LOCs, capital support from third parties, and parental support. Banks are significant providers of soft capital facilities that cover losses up to a certain specified amount in the event that an insurer's losses exceed a threshold amount ("attachment point"). Attachment points are set to correspond to a severe loss scenario. Although there is no history of bond insurers drawing on these facilities, banks are viewed as presenting the same certainty of performance as qualifying insurance soft capital providers. Banks achieve this status by virtue of their long and favorable history of performance in honoring LOCs and by the fact that a failure to perform could trigger credit events under other bank products. Because banks exhibit two negative characteristics in common with multiline reinsurers—that their ratings are less durable than those of monoline bond insurers and that some banks have shown a propensity to change business strategy from time to time, resulting in decisions to cease offering these products—credit for bank lines and LOCs will be the same as given for qualifying multiline reinsurers (see table 2). Multiline reinsurers providing similar products will receive the same credit as outlined for multiline reinsurers providing traditional reinsurance.

Credit given for loss coverage facilities is dependent on the full amount of the facility being available to the ceding company. For example, if a facility was structured to cover the next $500 million in losses once $1 billion in losses had been incurred (the attachment point) it would be of less value if our capital adequacy model projected total losses of $1.3 billion. In this example, only $300 million of the facility would be drawn. Accordingly, the full amount of the facility will be considered for appropriate reinsurance credit only if the full amount of losses covered plus retained losses up to the attachment point are no more than 80% of total projected losses. Projected losses above the 80% level that are still eligible for coverage by the facility would be given credit at 50% of the otherwise applicable amount. No credit will be given for losses in excess of total projected losses that are eligible for coverage by a facility.

Parent companies have a greater incentive to fund their capital commitments to the monoline insurer because they have a significant investment that would be at risk should the commitment not be funded. Therefore, credit for parent company commitments will be the same as is given monoline reinsurers.

Committed capital facilities. Committed capital facilities bring together the capital markets and reinsurance markets by creating a funded pool of capital that is available to the "beneficiary" in the event of significant losses. These facilities eliminate the risk that a soft capital provider will be unable or unwilling to perform through the mechanism of establishing a pool of funds that is available as needed. By investing in extremely high-quality assets and limiting when draws can occur, these facilities can provide essentially unquestioned access to funds without credit quality or market value risk.

Committed capital facilities will receive 100% credit, provided that asset credit quality and market value risks have been eliminated to an 'AAA' certainty. Credit will be reduced to reflect the existence of asset credit quality risk, market value risk, or counterparty risk. Committed capital will be counted against an insurer's overall soft capital limits and will be limited as a percent of an insurer's capital structure.

Acknowledging the risk of a failed or dysfunctional auction, Standard & Poor's believes issuing auction-rate securities to fund a committed capital facility is most appropriate for those bond insurers that are not part of a larger group, where there are a greater number of potential sources of adverse news that could cause an auction to fail to properly function. Specifically, bond insurers owned by a large, diversified group or by a small pool of investors are limited to auction-rate funded facilities equal to 10% of adjusted statutory capital (statutory capital plus committed capital facilities). All publicly held monolines can have auction-rate funded facilities equal to 20% of adjusted statutory capital.

Although these facilities offer many advantages over other forms of soft capital, particularly with regard to the durability of the access to funds and the absence of reliance on a third party to perform under a contract, they are not necessarily as permanent, nor do they provide as much flexibility, as paid-in capital. Therefore, these facilities will be included in overall soft capital limits, and fees paid by the insurer are treated as interest expense when analyzing the consolidated enterprise. Once drawn, these facilities are viewed as debt at the consolidated holding company level.

Amounts issued in excess of the allowable limits will not be treated as either debt or equity at the holding company level and will not be included as capital in the capital adequacy model. Over time, the insurer will get more credit for the facility as allowable amounts expand, reflecting the growth in the capital base and soft capital usage limits.

Committed capital facilities are also constrained by a test that limits total hybrid equity plus committed capital facilities to no more than 20% of the insurance holding company capitalization plus committed capital facilities.

Collateralized trust funds as a means of enhancing credit given for reinsurance. Standard & Poor's will give 100% credit against ceded capital charges for reinsurance backed by collateral as long as the following structure is in place and under the following constraints:

- The structure is available only to reinsurers rated in the 'BBB' category or higher.
- The collateral must be posted in a third-party trust account for the benefit of the ceding company. Legal opinions must support the fact that the trust is completely independent of the reinsurer and cannot be changed, impaired, or recaptured in the event of financial stress at the reinsurer. Legal opinions must also support a ceding company to at all times have unimpeded access to the funds in the event of nonpayment by the reinsurer for any reason.
- Acceptable collateral is limited to cash, U.S. government securities, and 'AAAm' rated money market funds. Other collateral will be considered on a case-by-case basis.
- Collateral should be marked to market daily, and at all times should be valued (adjusted value) using Standard & Poor's structured finance market value criteria. If the adjusted value falls below the amount required to achieve 100% credit, the reinsurer must post additional collateral no later than three days from the date the collateral fell below required levels. Shortfalls must be reported to Standard & Poor's and the ceding company immediately, along with remedial steps to be taken.
- Standard & Poor's should receive a quarterly report listing all securities held in the trust account. The report should include the type of security, maturity, Standard & Poor's collateral factor, and net adjusted value. The independent third-party trustee for the trust should prepare this report.

To compensate for the fact that the book of business ceded to the reinsurer is not identical to the ceding company's book of business, raising the possibility that the ceded book of business might perform less favorably than the ceding company's book, the amount of collateral posted, after market value adjustments, must be at least 125% of the total ceded capital charges. Where the reinsurer's book of business does not exhibit satisfactory sector and geographic diversity and single-risk management, this adjustment can be increased. This adjustment is not applied when collateral is being posted to increase the credit given for facilities where a specified dollar amount of losses is being covered in excess of an attachment point.

Reliance on soft capital providers. Standard & Poor's monitors the reliance that a bond insurer places on reinsurance and other capital substitutes, such as owners', third-party, or prefunded capital commitments to provide additional capital. Reliance on soft capital is thought to be excessive when these alternate forms of capital provide more than 33% of an insurer's total depression-period claims-paying resources. For this test, collateralized

reinsurance as described above is not counted as soft capital.

Concentrations of soft capital providers are monitored as well, using guidelines designed to limit the effect of a nonperforming soft capital provider. An insurer's reliance on a single provider of soft capital is measured using an alternative margin of safety test, which assumes the default of one soft capital provider. Reliance on a single soft capital provider is excessive if, under the alternative margin of safety test, the default of that provider would cause a bond insurer's margin of safety to drop five basis points or more below the minimum margin of safety required at the insurer's current rating level. For purposes of this test, exposures to soft capital providers under committed capital facilities are included in soft capital but not assumed to default, and collateralized reinsurance is excluded from soft capital.

Financial performance

The quality, level, and predictability of underwriting and investment income are important factors in the analytical process. The insurer's pricing policy should demonstrate that premium levels provide a sufficient return in relation to the capital required to support that issue. The predictability of underwriting income is based, in part, on market conditions and the composition of premium income (that is, new issue, secondary market, unit investment trust, or mutual fund). The profitability of a start-up company initially could be restricted because of statutory accounting conventions.

Standard & Poor's evaluation of investment activities focuses on the performance and risk characteristics of the portfolio, including a discussion of its composition, credit quality, and concentration by issuer, industry, and geography. Another consideration is the relationship between the maturity of the investment portfolio and the average maturity of the insured bonds. Finally, liquidity resources are evaluated and measured against potential needs for funds to pay claims (see "Liquidity uses and resources" section).

The insurance operating company's financial statements produced under conservative statutory accounting principles are the primary source of information for analyzing its financial strength and performance. Consolidated holding company results, reported under GAAP accounting, also contain useful information—particularly for assessing management's conservatism, as evidenced in how the company exercises judgment in the application of accounting practices and the company's access to capital based on its comparative returns on equity and use of debt leverage.

Diversification

Diversification within the bond insurance industry can take two forms: (1) diversification of the financial guaranty business plan and (2) holding company diversification into noninsurance businesses. With respect to a company's financial guaranty business plan, significant challenges face those organizations that would seek to enter the business. Many start-up proposals have not successfully passed the ratings process because of the difficulty of developing a credible business plan.

The keys to success—and for achieving high ratings—include a well-diversified business plan and underwriting strategy that today must at least target both structured finance and public finance in the public and private markets with proper sector, market, and geographic diversity. We feel a diverse underwriting strategy would enable a bond insurer to deploy capital to those markets that offer the best growth prospects and returns on capital as the capital markets change. Because of the emphasis placed on a diverse financial guaranty business plan, bringing a significant amount of capital to the rating process is necessary, but not sufficient for a start-up to attain a high rating. Solely relying on investors' desire for greater guarantor diversity is not an appropriate foundation to prove the economic viability of a company. It should be noted that the sheer number of existing monolines already in the market has changed the business dynamics for those firms that wish to follow. In Standard & Poor's opinion, it will be more difficult for start-up firms to earn an 'AAA' financial strength rating if they only wish to do business in a single business segment. The need to convincingly demonstrate the viability of the proposed business plan will carry greater weight in our analysis going forward.

In years past, bond insurance holding companies sought to diversify to enhance growth prospects and seek higher profitability. For some companies, diversification efforts centered on financial services, such as money management, municipal investment contracts, and swaps. From a benefits perspective, alternative products' contribution to consolidated income could relieve pressure on management to forge ahead in financial guaranty sectors that no longer present attractive risk/reward dynamics. While these alternative products can contribute to consolidated income, they can also present risk to the bond insurer.

For those activities that involve new products and skills that are not consistent with traditional bond insurance risks and skills, risk-management practices and staff capabilities receive added

emphasis in Standard & Poor's analysis of an insurer's financial strength rating. Our analytical approach to diversification is to analyze each of the new activities and develop a capital charge, if needed, which is assessed to the bond insurance company. The charge will reflect the risk that the insurer, as the "deep pocket" in the organization, might have to support the entity in a worst-case scenario. In addition, capital charges will incorporate any specific risk the insurer has taken on by explicitly supporting diversification activity.

Liquidity uses and resources

Standard & Poor's liquidity analysis for bond insurers examines the ratio of current liquidity resources to the insurers' largest possible claims or other payments due in a given year. The aggregation of claims is in no way meant to suggest that those payments are expected, but rather is theoretical analysis. This exercise differs in concept from Standard & Poor's capital adequacy model that measures a theoretical widespread depression level of future worst-case losses against future claims-

Bond Insurance Capital Adequacy Model

<table>
<tr><th></th><th colspan="3">—Growth Years—</th><th colspan="4">—Depression Years—</th></tr>
<tr><th></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th></tr>
<tr><td>New Business Activity</td><td colspan="7">Assumed new business activity mirrors company's business plan in year 1, followed by aggressive growth in years 2 and 3. The depression begins in year 4 and continues for 4 years. During these years, no new business is written but premiums continue to be collected for existing annual premium business.</td></tr>
<tr><td>Premiums Written</td><td>Plan</td><td colspan="2">Greater of plan or growth assumptions</td><td colspan="4">No new business written; collect installment premiums on existing business</td></tr>
<tr><td>Net Income</td><td colspan="7">Net Income = Premiums earned – operating expenses – losses + investment income + gains/(losses) on asset sales – taxes</td></tr>
<tr><td>Premiums Earned</td><td colspan="7">Premium earning pattern based on scheduled maturity of issues; no refundings or early calls assumed beyond year 1</td></tr>
<tr><td>Operating Expenses</td><td>Plan</td><td colspan="2">Growth consistent with premium growth</td><td>Decline to 93% of year 3 level</td><td>Decline to 89% of year 3 level</td><td>Decline to 70% of year 3 level</td><td>Decline to 48% of year 3 level</td></tr>
<tr><td rowspan="2">Losses (Net of Reinsurance and Soft Capital)</td><td>Discreet losses</td><td>Discrete losses plus debt service reserve losses</td><td colspan="3">Discrete losses plus debt service reserve losses plus assumed defaults</td><td colspan="2">Discrete losses plus assumed defaults</td></tr>
<tr><td colspan="7">Reinsurance credit determined by ratings of reinsurance provider. Soft capital credit determined by rating of provider or structure.</td></tr>
<tr><td>Investment Income</td><td colspan="3">Existing investment yields based on embedded rates; new investment yields based on assumed rates</td><td colspan="4">Investment income discounted for assumed defaults in investment portfolio</td></tr>
<tr><td>Asset Sales</td><td>None assumed</td><td colspan="3">Sale prices reflect discount for reduced liquidity and high interest-rate environment</td><td colspan="3">Sale prices reflect discount for reduced liquidity</td></tr>
<tr><td>Policyholder's Surplus</td><td colspan="7">Policyholder's surplus = prior year's ending surplus + net income +/– changes in contingency reserve + benefit of teax and loss bonds – dividends</td></tr>
<tr><td>Contingency Reserve</td><td colspan="7">Annual additions based on regulatory requirements; reserve may be released if loss ratios exceed a specific amount in any year</td></tr>
<tr><td>Asset Carrying Value</td><td colspan="3">No adjustment</td><td colspan="4">Carrying value adjusted to reflect market value declines due to default</td></tr>
<tr><td>Dividends to Holding Company</td><td colspan="3">Dividends paid to cover dividends to holding company stockholders plus debt service requirements</td><td colspan="4">Dividends paid to cover holding company debt service requirements</td></tr>
</table>

paying resources. The liquidity analysis reflects the assumption that occasional large losses could occur in a nondepressed economic environment.

Uses. In addition to predictable and routine uses of cash, such as salaries and rents, which are captured in the financial statement's net cash flow from operations calculation, bond insurers face the possibility of unanticipated cash outflows that represent potential demands on liquidity. For purposes of this analysis, we assume cash payments are required to address a default or other cash need in each of the insurance sectors and cash sensitive noninsurance businesses in which the bond insurer operates. The list of possible cash requirements is as follows:

- The default of a municipal obligor and associated net payments (largest such exposure in a given year);
- Largest net bullet maturity default (potentially includes investor-owned utilities, international bonds, or "guaranteed" maturity bonds);
- Largest debt services reserve draw;
- For the asset-backed sector, 90 days of payments associated with the default of the insurer's largest servicer;
- Largest noninsurance business obligation, if applicable, such as largest unscheduled draw on a municipal investment contract;
- Holding company debt and dividend-servicing needs; and
- Other cash requirements as deemed appropriate.

The sum of all theoretical potential cash payments in each operating sector is then aggregated and compared with cash resources.

Resources. We assume that in a nondepression situation, insurers would choose, with respect to converting financial assets to cash, to use the reverse repurchase (repo) market rather than dealing with the tax, earnings, reinvestment issues, and transaction costs associated with a forced sale of bonds. Essentially a collateralized loan, the repo market is a very large and liquid market that usually provides attractive financing rates. Since repo market participants (money market investors) are quite conservative in terms of eligible collateral, municipal bonds and other less-liquid financial assets like small business administration debt are, regardless of rating, not an acceptable source of security. They are nonetheless noted as a secondary cash resource. If a bond insurer, however, can establish a municipal repo line with a counterparty, Standard & Poor's might give some amount of credit for investments in municipal securities. We include corporate and asset-backed debt as a resource; in view of less-than-universal acceptance by all market participants and conservative margin requirements, however, we haircut this asset class at 50%. Treasury, FNMA, and FHLMC bonds are also conservatively haircut at 10%.

Bank lines are another source of cash, albeit sometimes clouded by restrictions, or "outs," such as material adverse change language. Some lines also allow the bank to cancel a facility in the event of a rating change. For purposes of this analysis we take into consideration the fact that the scenario we

Structured Finance Capital Charge Formula

The revised formula for structured finance capital charges is:

$$\frac{(\text{'AAA' - 'BBB–' Credit Gap})}{4} \times \left[1-\left(\frac{\text{Investment-Grade Loss Coverage Provided}}{\text{'AAA' - 'BBB–' Credit Gap}}\right)^{0.7}\right]$$

'AAA' – 'BBB—' Credit Gap— This value is to be used regardless of the actual protection in the transaction. The additional protection that may be present in the transaction above 'BBB—' is taken into account in the second half of the formula.

Investment-Grade Loss Coverage Provided— This value is equal to the amount of first-loss protection in the form of collateral, other enhancements such as spread accounts or cash, or credit-adjusted reinsurance in excess of the 'BBB—' level of protection.

(Investment-Grade Loss Coverage Provided/'AAA' – 'BBB—' Credit Gap)$^{0.7}$— The fraction computes the portion of the 'AAA' – 'BBB—' Credit Gap that is covered with first-loss protection. This value taken to the 0.7 power defines the amount of potential investment-grade-level losses that have been covered by the first-loss protection. The capital charge is equal to [one minus the percent of investment-grade losses covered by first-loss protection] times the investment-grade capital charge.

Example 1—Typical One-Class Transaction—Entire Security Insured

Assumptions:

'BBB—' loss coverage level	7.33%
'AAA' loss coverage level	20.00%
Actual loss coverage provided	11.00%

$$\frac{(\text{'AAA' - 'BBB–' Credit Gap})}{4} \times \left[1-\left(\frac{\text{Investment-Grade Loss Coverage Provided}}{\text{'AAA' - 'BBB–' Credit Gap}}\right)^{0.7}\right]$$

Example 2—Typical Multiclass Transaction—Junior Class Insured

Assumptions:

'BBB—' loss coverage level	7.33%
'AAA' loss coverage level	20.00%
Actual loss coverage provided	11.00% – 13.00%

- The capital charge for the 'A' class is equal to the difference in the capital charge based on the two loss coverage levels that define the range of the class.
- The capital charge for loss coverage of 11.00 is 1.84 as computed in Example 1.
- The capital charge for loss coverage of 13.00 is 1.36 as computed in the same fashion.
- The capital charge for the class is the difference in the two capital charges or 0.48% of the assets in the collateral pool or about 24% of the par value of the class.

have presented might not necessarily jeopardize existing ratings. Cash resources include:

- Cash and short-term investments,
- Treasury and government agency fixed income securities,
- Corporate and ABS/MBS bonds,
- Bank lines of credit, and
- Other securities as deemed appropriate.

Historically we have observed, and continue to expect, that discounted cash resources exceed the sum of theoretical claims and other payments in any given year. Conservative investment practices common to the industry that emphasize highly rated fixed-income assets play a major role in the industry's sound liquidity profile. Likewise, the nature of the payment risk as defined in the policy, limiting claim obligations on defaulted insured debt to principal and interest as it comes due, also supports the bond insurers' strong liquidity positions. Barring exceptional circumstances, the ratio of cash resources to possible uses of cash should be greater than 100%.

Start-Up Insurers

Bond insurers need financial strength ratings from one or more rating agencies as a prerequisite to commencing operations. This unique requirement reflects the fact that the product that a bond insurer offers is in effect its financial strength, and investors will not purchase insured bonds without one or more independent evaluations of the insurer's creditworthiness. Standard & Poor's is comfortable rating start-up bond insurers without the benefit of a track record based on our rigorous initial review of the insurer's business plan, the qualifications of its senior management, the commitment and oversight of the owners, and the underwriting and risk-management guidelines, with semiannual follow-ups to review progress. These reviews are complemented by our deal-by-deal reviews of all new business written that serve as an ongoing check on underwriting philosophy and practice. Finally, our minimum capital requirements provide a significant capital cushion during the early years of the insurer's life while it is developing a diversified book of business and is more susceptible to errors in underwriting and/or business plan execution.

The rating process for a new insurer is initiated by a request for rating. Once both parties accept

Table 3 Representative Capital Charges For Asset-Backed Securities

Asset type as collateral	Capital charge (% of par value)
Super-'AAA' tranches of CDOs	0.1
Trade receivables	1.0-1.5
Prime auto loans	0.5-3.0
Subprime auto loans	2.0-6.0
Residential mortgages	1.0-6.0
Subprime home equity loans	2.5-6.0
High-yield bonds	4.0-8.0

Table 4 Loss Tolerance

	Statutory net income
+	Taxes
–	Refunded earned premiums
+	Lowest five-year refunded earned premiums
–	Capital gains
+	Capital losses
–	Miscellaneous earnings
+	Miscellaneous losses
=	Core single-risk earnings
X	Two
=	Single-risk loss tolerance

Table 5 Maximum Principal Exposure To A Single Issuer

Category (worst-case loss, % of par)	Unseasoned monoline % of surplus*	Seasoned monoline multiple of loss tolerence (x)
1 (25)	100	4.00
2 (37.5)	67	2.67
3 (50)	50	2.00
4 (60)	42	1.67
5 (75)	33	1.33
6 (100)	25	1.00

*Assumes 12.5% return on surplus.

the terms of the engagement, several meetings are held where key topics are discussed in detail. Access to the new insurer's key executives is critical to the successful completion of this phase of the process. Once all the necessary information has been received and evaluated, a rating committee will determine the rating of the new insurer. The new insurer has the right to refuse a rating it finds unacceptable. The process will usually take several months from start to finish, although it has stretched out to more than a year in extreme cases.

Below is a description of the information required from a prospective insurer:

- Assessment of market potential: Discussions include what market(s) the new insurer is addressing, why that market needs additional capacity, and how the market dynamics would change upon the new insurer's entry into the market.
- Business plan—text and numbers: Text should include a discussion of how the company plans to compete and what its market share goals are, along with a list of key sources of business. Five years of income, balance sheet, and cash flow statements should be provided for both the insurance company and the holding company. Key business statistics—par insured, par outstanding, principal and interest insured and outstanding, and premiums written—should be provided by country and by market sector (such as GO or hospital) on both a gross and net basis. Average premium rates by sector should also be provided.
- Underwriting guidelines: Detailed underwriting guidelines to be applied in assessing issues and issuers are to be submitted.
- Ownership: A list of owners and the name, address, and telephone number of a contact person at each owner must be provided. For other than Standard & Poor's rated entities, a short summary of each owner's business activities must be provided.
- Management: Resumes for each of the key managers must be provided.
- Regulatory climate and applicable regulations: The country and state, if applicable, of domicile, along with licensing status in other jurisdictions, must be identified. Key regulations that affect the insurance company and the insurance company/holding company relationship are to be submitted for review.
- Risk management/controls: Significant risk-management/control philosophies and guidelines—including geographic dispersion, sector concentration, foreign currency exposure, and (if a reinsurer) ceding company concentration—should be discussed. Single-risk guidelines should be included.
- Reinsurance: A discussion of the planned use of reinsurance and the type(s) of coverage sought should be provided. A list of reinsurers where relationships already exist and a representative list of reinsurers that the new insurer expects to establish relationships with should also be provided.
- Investment strategy: Investment strategy is discussed in terms of average credit quality, rating distribution, issuer/industry limitations, maturity distribution, and duration matching. The name(s) of investment managers to be engaged should be provided.
- Capital adequacy model: At the appropriate time, a detailed list of assumptions will be provided to the new insurer. The insurer will need to create a capital adequacy model and share with us the results, based on our assumptions. At the same time, the new insurer will be asked to fill out a worksheet, providing us with data to run our own model.

Monoline Reinsurers

In the mid-to-late 1980s, the dramatic volume growth of insured issues created a need for increased reinsurance capacity at a time when multiline reinsurers were reluctant to make more capacity available and, in some cases, actually reduced available capacity. This shortage led to the creation of two monoline reinsurers dedicated solely to the financial guarantee industry. With the growth in the industry and the primary insurers' desire to diversify their reinsurance relationships, two additional start-up reinsurers joined the industry in the mid-to-late 1990s, garnering a significant share of reinsurance premiums ceded by the primary insurers.

The nature of the relationship between the primary insurers and reinsurers began to change in the late 1990s. The reinsurers' role evolved from being incremental capital providers to risk-management tools for the primaries. In the process, the reinsurers' fundamental business weakened as they faced weaker growth, profitability, and market-share prospects, and were challenged through their underwriting and risk-management functions to overcome the adverse selection inherent in the reinsurance practices of the primaries.

As a result, in March 2002, Standard & Poor's revised its rating outlook on the four companies that then comprised the monoline reinsurance industry to negative, reflecting deterioration in their business positions relative to the primary companies from which they assumed business. This business was viewed as being less diversified, less profitable, and of

Table 6 **U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories**

	—Underlying rating Category—							
Sector¶	**CCC**	**B**	**BB**	**BBB**	**A**	**AA**	**AAA**	**Single-risk category§**
General Obligation								
States	30	21	15	4	2	2	1	1
Cities and counties	100	70	50	13	7	5	4	1
Schools–elementary and secondary	40	28	20	5	3	2	2	1
Special district	120	84	60	16	8	6	5	1
Community college district	100	70	50	13	7	5	5	1
Tax-Supported Debt								
Sales, gas, excise, gas, and vehicle registration								
Local	150	105	75	20	11	8	6	2
Statewide	80	56	40	10	6	4	3	1
Guaranteed entitlements	100	70	50	13	7	5	5	1
Special assessments, Mello Roos, tax increment financings	250	175	125	33	18	13	10	4
Hotel/motel	250	175	125	33	18	13	10	4
Personal income								
Less than 1.0 million population	150	105	75	20	11	8	6	2
More than 1.0 million population	80	56	40	10	6	4	3	1
Cigarette, liquor	250	175	125	33	18	13	10	4
Health Care								
Hospitals	350	245	175	46	25	18	14	6
Hospital systems (three or more hospitals with geographic dispersion)	300	210	150	39	21	15	12	5
Hospital equipment loan program	350	245	175	46	25	18	14	6
Health maintenance organization	350	245	175	46	25	18	14	6
Clinic practices closely affiliated with hospital	350	245	175	46	25	18	14	6
Nursing home	350	245	175	46	25	18	14	6
Nursing home system (three or more homes with geographic dispersion)	300	210	150	39	21	15	12	5
Life-care center	350	245	175	46	25	18	14	6
Life-care center system (three or more centers with geographic dispersion)	300	210	150	39	21	15	12	5
Human service providers	200	140	100	26	14	10	8	3
Utilities								
Public power agency with special project risk (1)	400	280	200	52	28	20	16	6
Public power agency with high dependence on nuclear (2)	300	210	150	39	21	15	12	5
Public power agency with no special project risk and little nuclear dependence (3)	150	105	75	20	11	8	6	2
Water, sewer, electric, and gas systems (revenue-secured)	120	84	60	16	8	6	5	1

Table 6 **U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories** (continued)

	—Underlying rating Category—							
Sector¶	**CCC**	**B**	**BB**	**BBB**	**A**	**AA**	**AAA**	**Single-risk category§**
Solid waste disposal to energy or landfill project (single site)	250	175	125	33	18	13	10	4
Solid waste system with landfill and/ or waste-to-energy facility	200	140	100	26	14	10	8	3
Solid waste transfer stations, trucks (no landfill/waste-to-energy facility)	150	105	75	20	11	8	6	2
Special Revenue								
Private colleges and universities and independent schools								
General obligation	250	175	125	33	18	13	10	4
Auxiliary enterprises	350	245	175	46	25	18	14	6
Public colleges and universities and community college revenue bonds								
General obligation—unlimited-fee pledge	90	63	45	12	6	5	4	1
General obligation—limited-fee pledge	100	70	50	13	7	5	5	1
Auxiliary enterprises and related foundations	150	105	75	20	11	8	6	2
Guaranteed student loans	100	70	50	13	7	5	5	1
Not-for-profit and 501(c)3s	350	245	175	46	25	18	14	6
Charter schools	350	245	175	46	25	18	14	6
Airports	120	84	60	16	8	6	5	1
Limited tax-backed	100	70	50	13	7	5	5	1
Passenger facility charge	200	140	100	26	14	10	8	3
Special facility (with rate flexibility)	160	112	80	21	11	8	7	2
Ports	180	126	90	23	13	9	7	2
Limited tax-backed	140	98	70	18	10	7	6	1
Special facility (with rate flexibility)	300	210	150	39	21	15	12	5
Parking	250	175	125	33	18	13	10	4
Toll roads								
Five-year operating history	200	140	100	26	14	10	8	3
Less than five-year operating history	300	210	150	39	21	15	12	5
Bridges								
Five-year operating history	250	175	125	33	18	13	10	4
Less than five-year operating history	350	245	175	46	25	18	14	6
Federal grant-secured obligations	160	112	80	21	11	8	7	2
Federal grant-secured obligations with additional credit support	120	84	60	16	8	6	5	1
Housing Bonds								
HFA ICRs	150	105	75	20	11	8	6	2
PHA	200	140	100	26	14	10	8	3

Table 6 **U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories** (continued)

	—Underlying rating Category—							
Sector¶	**CCC**	**B**	**BB**	**BBB**	**A**	**AA**	**AAA**	**Single-risk category§**
State agency single-family**	100	70	50	13	7	5	5	1
Local agency single-family**	200	140	100	26	14	10	8	3
FHA-insured multifamily**¶¶	6	4	3	0.8	0.4	0.3	0.2	1
Stand-alone affordable housing/Section 8/student housing	350	245	175	46	25	18	14	6
Mobile home parks/single-borrower pools	300	210	150	39	21	15	12	5
Military housing/multiborrower pools	250	175	125	33	18	13	10	4
Investor-Owned Utilities								
Electric distribution system	120	84	60	16	8	6	5	1
Water, electric, and gas	120	84	60	16	8	6	5	1
Gas distribution	150	105	75	20	11	8	6	2
Telephones	150	105	75	20	11	8	6	2
Natural gas pipeline	450	315	225	59	32	23	18	6
Corporates and Financial Institutions¶¶								
Life and property/casualty insurance operating companies	40	33	28	7	4	3	2	5
Life and property/casualty insurance holding companies	80	67	55	15	7	6	4	6
Bank operating companies	40	33	28	7	4	3	2	5
Bank holding companies	80	67	55	15	7	6	4	6
Industrial companies	60	50	42	11	5	4	3	6
Subordinated debt	80	67	55	15	7	6	4	6

*Expressed as a percent of average annual debt service. ¶Moral obligations: a constant adjustment factor of 200% will be used. Lease obligations: a constant adjustment factor of 200% will be used. General fund or non-ad valorem pledges: a constant adjustment factor of 150% will be used. Junior-lien bonds: a constant adjustment factor of 120% will be used. §See Table 5. **Top tranche, secondary market transactions only. Primary and mezzanine structures are assessed on an individual basis. ¶¶Expressed as a percent of par. For maturities of one year or less, the capital charge is reduced by 75%; for maturities of between one year and three years, the capital charge is reduced by 50%; for maturities between three years and five years the capital charge is reduced by 25%. (1) Public power agencies with special project risk, including, but not limited to, troubled nuclear operations and capital additions that fundamentally alter a utility's debt profile and/or represent the adoption of new, unproven technologies. (2) Public power agencies that are highly dependent on nuclear generation to serve their customers' needs. (3) All other public power agencies, including those that do not face special project risk and do not have a substantial dependence on nuclear resources to serve their customers.

a higher risk profile relative to that written by the primaries. Subsequently, the following events transpired:

- One reinsurer's rating was affirmed, attributable to a well-managed reinsurance strategy and capital infusion, including an investment by one of the primary bond insurers;
- One rating was affirmed but continued to have a negative outlook for a period of time until the company proved successful in its efforts to de-emphasize reinsurance and place greater emphasis on direct underwriting;
- One rating was lowered when the reinsurer's operations ultimately merged into the operations of an 'AA' rated affiliate direct writer of financial guaranties; and
- The final reinsurer, generally agreeing with our assessment of the situation, chose to have its rating withdrawn and exited the business, placing its book of business into runoff.

The analysis of a monoline reinsurer follows the same basic methodology as for a primary insurer. However, with one striking exception, following the completion of our evaluation of the reinsurers in 2002, our expectation is that, barring an unusual situation, the highest financial strength rating a de novo monoline reinsurer can receive will be 'AA'. One fundamental difference from the methodology used to evaluate a primary insurer is that the total initial capital required of a start-up reinsurer is $200 million, compared with $300 million for a start-up primary insurer. Otherwise, the differences in emphasis and criteria are only minor, reflecting different modes of operation and industry fundamentals.

With respect to the rating exception cited for start-up monoline reinsurers, strategic planning that goes beyond simply offering reinsurance capacity but

involves a formal business "relationship" with a primary insurer could lead to a rating higher than 'AA'. An example of this approach would be a primary company investing directly in the reinsurer. In this scenario, it is our opinion that the ceding primary company would not adversely select against a company where it had an equity investment. The reinsurer might be limited to serving as a captive reinsurer to the investing primary insurer or could be able to offer reinsurance capacity to other primary insurers.

Another example would involve a monoline reinsurer that is established as a captive reinsurer with no investment by a primary bond insurer. It could receive an 'AAA' rating if both companies have a common parental ownership, the business it is ceded is of investment-grade quality, and it meets all of Standard & Poor's 'AAA' criteria. In this scenario, it is our opinion that the ceding primary company would not adversely select against an affiliate company due to parental oversight and what, in some instances, could be significant dependence on the reinsurer to support the rating of the primary insurer.

Standard & Poor's Capital Adequacy Model

Overview

For 'AAA' rated financial guarantors, who by definition have extremely strong financial security characteristics, the capital adequacy model demonstrates that the bond insurer will remain solvent through, and following, an extremely stressful claims-paying environment. Assumptions remain the same for 'AA' and 'A' rated bond insurers, although capital adequacy results will obviously differ. Using the same worst-case assumptions, 'AA' bond insurers are expected to be marginally or borderline solvent through, and at the conclusion of, the stressful claims-paying environment. Bond insurers rated 'A' are not expected to remain solvent through the worst-case scenario; rather, they must have capital resources of about 80% of the expected claims.

The Standard & Poor's capital adequacy model has been in use for 20 years and has seen numerous modifications and changes in assumptions over the years. As risks or business conditions evolve, the model is brought up to date. Changes can range from higher or lower capital charges to reflect changes in the risk of a sector, to changes associated with how much credit a bond insurer will receive in connection with the business that it cedes to a multiline reinsurer. Driving any change is the underlying intention of capturing a "worst-case" situation for that particular issue.

Our capital adequacy model is a seven-year pro forma balance sheet and profit and loss statement projection using worst-case assumptions for all revenue, expense, asset, and liability categories. Revenue, for example, is adjusted to reflect the decline in premiums due to the runoff of the insured book of business and an assumed cessation of new business activity at the start of a severe claims-paying period. Revenue is also adjusted by a decline in investment income, reflecting assumed defaults within the investment portfolio as well as the sale of investments to offset investment liquidations made to pay claims. For expenses, the most notable adjustment is made to claims. Whereas claims typically equate to a fraction of premiums earned in a normal year, worst-case assumptions cause claims in the pro forma exercise to generate substantial income statement net losses. Reinsurance will moderate the claims, although reinsurance obligations are discounted to reflect credit quality and willingness to pay issues. Operating expenses are assumed to decline at the start of the period of stress under the assumption that a halt to new business activity would correspondingly reduce expenses in the sales and marketing functions. The balance sheet is adjusted to reflect income statement activity. Policyholder surplus will reflect not only income statement results but gains to surplus during the stress period associated with some soft capital facilities such a contingent preferred stock trusts.

Capital adequacy model uses

The capital adequacy model, along with its various components, has a multitude of uses. First and foremost, the model is a key rating determinant. Without an acceptable result or a reasonable plan to cure a shortfall, ratings are in jeopardy. Nevertheless, it is extremely important to underscore the point that the capital adequacy model is not the sole rating determinant. In fact, most bond insurer rating changes, CreditWatch placements, or negative outlooks have occurred for reasons other than an unacceptable modeling result. These reasons include management missteps, poor execution of strategy, and deterioration in economic viability.

Each financial guaranty insurance company is intimately familiar with the details of the Standard & Poor's capital adequacy model and has created, and makes active use of, its own version of the model, as modeling details and criteria are completely transparent. In conjunction with their strategic plans, they use the model for capital planning purposes. It is most common for a bond insurer's business to target and manage to an intended capital model result. The model is a tool for the insurers in determining the need for additional capital or dividend capacity.

The capital adequacy model is also a sensitivity analysis tool. In rapidly developing credit risk situations, such as Hurricane Katrina, the model allows us to make modifications to the variable in question, such as exposure in a given sector under stress, and test capital adequacy results against various incremental changes for that sector.

Capital charges, which are assigned to all insured transactions, are theoretic worst-case loss estimates for a transaction in the context of a diversified portfolio of risks. Capital charges are the key variable in the model and are used to determine losses in the capital modeling exercise. Capital charges have a number of valuable uses. When individual capital charges are aggregated to calculate a weighted average sector capital charge for a company, that number is one measure of "risk" for an insured portfolio. Capital charge trends for a specific company can be insightful and indicative of changes to risk or business strategies. Weighted average capital charges can also be used to compare companies with one another for insight into relative insured portfolio risk. Some financial guarantors also use capital charges for capital allocation purposes in the process of determining if a contemplated wrap of a transaction meets that company's economic hurdle rate.

Start-up bond insurers and the model

The model is also used in the analysis of start-up bond insurers. The pro forma projections extend for nine years, as opposed to seven for a mature company. The first five years for a start-up bond insurer are business growth years, and the final four are the depression period. The additional two years of growth act to put greater stress on capital for the start-up company because the pro forma book of business is larger.

The model plays a central, albeit less important, role in the ultimate rating conclusion for a start-up company. For an established company, its existing book of business is a given, and projected business is likely to evolve based on the company's history and history of writing and achieving business plan results. For a start-up company there is no existing book of business, and it is not unusual for the insured portfolio to develop outside of initial projections, making modeling results less reliable and usable. For a start-up company, the overcapitalization requirements during its formative years of operation offset the less-precise modeling output. Most important to the rating of a start-up bond insurer is to have a credible management team with a history of market knowledge and conservative underwriting, along with a business plan that demonstrates a strong likelihood of success under the circumstances.

Details of the model

Not unlike the business planning process for any major company, the Standard & Poor's capital adequacy model makes assumptions and sets expectations for all aspects of a bond insurer's existing and future business. Income, balance sheet, and cash flow statements are produced using statutory accounting principles. The major difference is that we are modeling for a worst-case claims environment, whereas a financial guarantor's business plan is projecting an expected case.

Business activity

For purposes of adding stress to the analysis, the claims-paying period does not start with the existing insured portfolio. Instead, a period of growth takes place, thereby increasing the size of the insured portfolio to be stressed. During the growth years, new business is assumed to expand at an aggressive pace: the greater of the insurer's business plan or 15% growth in written par for municipal business and 25% for structured finance. The mix of business is consistent with the bond insurer's business plan, assuming that mix is realistic. Once the depression starts, no new business is assumed to be written.

Insured portfolio composition

There are two components of the insured portfolio that are stressed beginning in year four—the first year of claims-paying stress. The first is the existing portfolio, which amortizes according to schedule and expectations over the first three business growth

Table 7 **International Rating Sensitive Capital Charges (%)* And Single-Risk Categories**

Country and Sector	—Underlying rating category— BB	BBB	A	AA	Single-risk category¶
Australia					
States	15	4	2	2	1
Belgium					
Regions	20	5	3	2	1
Municipalities and provinces	50	13	7	5	1
Canada					
Provinces	15	4	2	2	1
Municipalities	50	13	7	5	1
France					
Departments/regions	20	5	3	2	1
Municipalities	50	13	7	5	1
Urban communities	50	13	7	5	1
Mixed transportation systems	85	22	12	9	2
Teaching and regional hospitals	100	26	14	10	3
All other hospitals	125	33	18	13	4
Municipal banks	125	33	18	13	4
New towns	125	33	18	13	4
Italy					
Municipalities and provinces	30	8	4	3	1
Regions	40	10	6	4	1

years of the modeling exercise. The second element is the new insured portfolio that is created in connection with the new business written over the first three years of business growth. Unless significant changes in business mix are anticipated, such as a moratorium on business being placed on a certain sector, the mix of new business will generally mirror the mix of the existing portfolio.

Theoretical losses

Loss estimation and the capital charges generating those losses are the most critical elements of the capital model. This is not surprising given the critical importance of the underwriting function, which not only approves an individual issue as eligible for insurance but also provides direction to the development of the risk portfolio in terms of sector and geographic dispersion.

For the insured municipal portfolio, each insurer's weighted average capital charge percentage for municipal-backed issues is applied to the average annual debt service of its portfolio to determine the theoretical losses over the four years of the depression. The original maturity of a municipal issue will determine its average annual debt service. Given the model's focus on years of debt service in default, the more debt service that can be in default during the worst-case years, the greater the aggregate claims. The reported weighted average municipal capital charges for the various diversified 'AAA' rated insurers over the past few years has ranged from 7%-16%. Capital charges for corporates and financial institutions are applied to the par value of insured bonds.

Losses for ABS (see table 4) are a function of the difference between the first-loss protection provided in the transaction and the level of first-loss protection necessary for the transaction to achieve an 'AAA' rating, the credit gap. (See chart 2, "Structured Finance Capital Charge Formula," for a detailed description and examples of the structured finance capital charge formula.) Speculative-grade obligations receive capital charges at least 2x the investment-grade capital charge.

Certain obligations may have deteriorated to the extent that a near-term default cannot be ruled out. In these cases, called discrete losses, Standard & Poor's will assume that the transaction defaults immediately and remains in default throughout the life of the depression scenario. In such cases, reserves must be equal to the actual debt service for the given exposure. Similarly, Standard & Poor's assumes that bonds already in default will remain in default unless there is abundant reason to believe the default will be cured.

Losses on debt service reserve funds are assumed to occur in the year immediately preceding the depression and in the first year of the depression, reflecting the fact that these funds are the first to be used to meet debt service when an issuer defaults. The capital charge for a debt service reserve is 50% of the sector's normal (average annual debt service) charge, applied to the entire amount of the surety policy.

Capital charges will also be assessed against non-bond insurance products or services such as municipal investment contract businesses. These are nonstandard business lines where capital is at risk. Standard & Poor's will analyze each operation to determine the risk it poses, either directly through financial guaranty insurance policies or indirectly as a potential drain on capital, to the insurance company.

In the event of a major credit event, such as Hurricane Katrina, incremental theoretical losses are generated so that a sensitivity analysis relative to the existing capital base can be undertaken. These theoretical discrete losses are derived in consultation with Standard & Poor's sector or regional experts. In most credit event cases, the incremental losses include a potential claims component and a ratings migration component. For example, in the case of

Table 7 **International Rating Sensitive Capital Charges (%)* And Single-Risk Categories** (continued)

	—Underlying rating category—				
Country and Sector	BB	BBB	A	AA	Single-risk category¶
Japan					
Prefectures	15	4	2	2	1
Portugal					
Cities	50	13	7	5	1
Spain					
Autonomous communities and provinces	20	5	3	2	1
Municipalities	50	13	7	5	1
Switzerland					
Cantons	30	8	4	3	1
United Kingdom					
Housing associations	85	22	12	9	2
Mass transit (precompletion)	150	39	21	15	5
NHS trusts	60	16	8	6	1
NHS PFI projects	90	23	13	9	2
PFI accommodation projects	70	18	10	7	1
Regional electric companies	60	16	8	6	1
Universities	50	13	7	5	1
Local governments	20	5	3	2	1

Note: Capital charges can be adjusted if the insured obligation is denominated in a currency that differs from the insurer's c]apital base. *Expressed as a percent of average annual debt service. ¶See Table 5.

Hurricane Katrina, it was assumed that hardest hit credits generated claims immediately. For remaining, severely affected credits in the region, assumptions were made about ratings declines, which carried with them higher capital charges.

Losses can be moderated by various forms of soft (third-party) capital, such as business that has been ceded (reinsured) to third parties. Losses might also be moderated by unconditional, irrevocable bank lines of credit. As in reinsurance, credit for these facilities is based on the credit quality of the bank and the appropriate structuring of the documentation so that the facility works in the context of our model's assumptions and requirements. A final form of third-party capital for the industry is custodial trust contingent preferred stock facilities. In general, the mechanics of these facilities establish trusts that then enter into agreements that allow a bond insurer to put its preferred stock to the trusts, at which time holders of the trust securities will become holders of the bond insurer's preferred stock. Prior to that time, the trusts must be invested in high-quality (AAA/A-1+), short-term liquid assets. In terms of the dynamics of the model, reinsurance and line of credit remittances are viewed as reductions to overall losses. Conversely, the contingent preferred stock facilities are viewed as an addition to capital because of the issuance of bond insurer preferred stock and corresponding receipt of cash from the trust.

Bond Insurance Administration

The Public Finance Department's bond insurnace administration group is a key intermediary between the insurance companies, the issuers, the bond market, the bond insurer ratings group, and the investor community, coordinating the activities associated with providing insured and underlying credit ratings for new bond issues.

Issuers must request a Standard & Poor's rating on insured transactions. In those instances when an issuer does not choose to have Standard & Poor's rate the insured transaction, Standard & Poor's will not issue, publish, or automatically assign the insurer's financial strength rating to the transaction.

For both new issue and secondary market debt, Standard & Poor's does not provide any official rating for insured debt until, and unless, an executed final insurance policy is made available. In the new issue market-where an issuer and its underwriters or advisers are in the process of negotiating, selling, or closing on a bond issuance and an insurance policy is expected but not yet final-unless a request for an underlying rating was made to Standard & Poor's, no representation of a rating should be used or made. Once an insured rating is requested and the policy has been executed and presented to Standard & Poor's, the enhanced rating on the issue can be established.

For debt issuers utilizing bond insurance, but with parity debt rated by Standard & Poor's on an uninsured basis, it is necessary to submit the relevant transaction documents to Standard & Poor's, in addition to the insurance company. Standard & Poor's must review the proposed debt issuance to assess any outstanding, uninsured parity debt ratings. In certain instances, issuers may plan to go to market on an uninsured basis but later change their mind and choose to use bond insurance. In those instances, the rating released on the debt issue may initially be based on the issuer's own credit quality (uninsured rating), and is then subsequently revised to reflect the insurer's financial strength rating once a policy has been issued by an insurer.

All bond insurance policies are expected to cover 100% of scheduled principal and interest on a timely basis. Such policies should constitute an unconditional, irrevocable, and legal, valid, and binding obligation of the insurer in effect for the life of the issue. If the primary credit obligor fails to make a payment, timely payment is assured to bondholders by providing sufficient time under the terms of the policy for the trustee to notify the bond insurer. If an issuer defaults, there is no mandatory acceleration of liability, and payments will continue to be made by the insurer based on the original schedule. The risk of monies being recaptured from a bondholder if the primary obligor becomes bankrupt (preference risk) must be covered in the insurer's standard policy, in an endorsement, or by the issue's structure.

For help with public finance-related administrative issues and assistance in reaching bond insurance administrative personnel located in other ratings groups at Standard & Poor's, please call (1) 212-438-2074.

Investment income

Existing investments earn at their embedded rate and new investments earn at assumed conservative rates of interest throughout the forecast period. During the depression years, investment income is reduced to reflect defaults on non-'AAA' rated bonds held for investment. Common stocks and all securities rated below 'A' are assumed to become worthless at the beginning of the depression. Losses from the sale of investments are recognized in (1) the first two years of the depression because of assumed interest-rate movements that result in an inverted yield curve and long-term rates rising at least 600 basis points, and (2) throughout the depression on certain less-than-top-rated instruments to reflect reduced liquidity in the markets.

Premium written and earned

For existing business, premiums are written and earned at their imbedded premium rates. For the growth book of business, premiums reflect current market conditions and business plans. Because of intense competition among insurers for many years, premium rates became a focus of attention regarding the ability of insurers to maintain their capital adequacy. In an environment where competitive forces are causing premium rates to decline, Standard & Poor's model picks up a significant amount of the effect of changing premium rates because it forces the insurer to write new business for three years before the depression starts.

Margin Of Safety

The culmination of all the assumptions associated with the creation of a worst-case balance sheet and income statement is the company's ending, postdepression capital position. While important in its own right, and while solvency following a severe claims-paying environment is expected for an 'AAA' company, the

margin of safety measurement provides greater insight. The margin of safety expresses ending capital in the context of the scale of the company. The margin of safety accomplishes this by relating total claims-paying resources (ending statutory capital plus losses) to losses. Thus, a margin of safety of 1.25x signifies that ending capital exceeded losses by 25%. Stated another way, losses could have been 25% larger without driving the statutory capital below zero.

The margin of safety is a useful tool that allows for analysis of capital adequacy trends for individual companies and capital strength comparisons among the different insurers. Some bond insurers use the measurement for capital planning purposes. The minimum margin of safety for 'AAA' rated bond insurers is 1.25x. For 'AA' and 'A' rated insurers the minimums are 1.0x and 0.8x, respectively. These minimum values can be adjusted slightly lower in cases where the insurer is owned by a single highly rated entity that has expressed continued support for the company.

Single-Risk Guidelines And Analysis

Whereas the capital adequacy model addresses the question of capital relative to a severe, widescale claims-paying environment, single-risk standards and analysis look at capital and rating stability in the more likely context of occasional large discrete defaults by individual obligors. An inordinately large exposure to a defaulting issuer or issue could threaten a bond insurer's rating, particularly in a nondepression environment where the default is an isolated event and is not related to a general economic downturn.

For this reason, Standard & Poor's has insurer-specific, single-risk guidelines that limit exposures to individual issuers or issues in the case of asset-backed transactions. The approach is based on the assumption that any issuer or issue could suffer a large discrete loss, despite investment-grade underwriting standards, and measures the possible loss against the earnings power of the company. Investment-grade credits are not immune to default, and the single-risk standards reflect the further assumption that the severity of the loss will be great, in the context of the obligor's sector.

The criteria for maximum single-risk exposure is based on two key assumptions: (1) that the maximum loss allowable is a function of how much a bond insurer could write off and still maintain its existing rating, and (2) that the expected loss on any issuer is a function of the issuer's market sector. The loss tolerance (how much an insurer could lose and retain its rating) relating to a single issuer is equal to twice the company's core earnings (see table 5). Core earnings include adjustments for taxes, advanced refundings, capital gains and losses, and nonrecurring income statement items.

This approach conservatively identifies potential earnings net of any nonrecurring items. Because any large loss would shelter a significant amount of earnings from taxes, pretax earnings are used in the calculation. In addition, since refunded earned premiums can vary greatly, refunded earned premiums for the base year are compared with the lowest level of premiums earned from refundings over the prior five years. The lower amount is included in the core single-risk earnings calculation. This methodology normalizes some of the income statement components (thereby reducing loss-tolerance variability) and facilitates the single-risk planning process.

For unseasoned financial guarantors—those that have yet to develop a significant level of core earnings—the maximum allowable exposure to a loss from a single issuer is expressed as a percent of original surplus. The percent used is equal to twice the predictable, yet conservative, rate a seasoned bond insurer could earn on its existing surplus for one year. Currently, a 12.5% rate of return is assumed for these purposes. Single-risk limits for unseasoned companies remain based on original surplus adjusted for subsequent capital infusions until core earnings are sufficient to generate a higher computed loss tolerance.

The single-risk categories for each sector are shown in tables 6 and 7. Based on the relative degree of risk between the categories and the earnings power of a seasoned company or the assumed 12.5% rate of return for an unseasoned company, the maximum exposures to a single-risk by category are shown in table 5. These relationships imply that Category 3 obligations are considered to have twice the loss potential of Category 1, while Category 6 obligations are considered to have four times the loss potential of Category 1. In other words, the lower the risk sector, the greater the insured principal amount of debt that an insurer can cover relative to its earnings or capital base.

Single-risk loss potentials for ABS are determined on a case-by-case basis using the same credit-gap concept employed to determine capital charges. A company's earnings power or capital base is used to determine its loss tolerance for each transaction. ■

Government Investment Pool

The primary objective of a government investment pool (GIP) is the prudent management of public funds on behalf of state and local governments. GIPs are established to offer cost-effective investment vehicles in which municipalities and public entities pool their idle cash and operating funds while earning a competitive rate of return and providing safety and liquidity. GIPs are operated by U.S. states, counties, cities and other public entities and generally serve as investment vehicles for public investors in the state or municipal jurisdiction.

State-level pools are generally run by treasurers that are either elected or appointed officials of the state. In general, state-sponsored GIPs serve as a voluntary, professionally managed, investment option for operating funds for municipalities within a state. Some state pools have been in existence for more than 25 years. Many municipalities invest in state-run GIPs as they offer a cost-effective investment vehicle. School districts are often mandated to invest surplus funds and operating money in state-run pools. Other public entities see GIPs as an alternative to self-management or to private money market funds.

County-sponsored GIPs are popular in California and Washington. In California, elected county treasurers run most county pools. These county treasurers are responsible for management not only of their own county funds, but also of the management of public entities (i.e., school districts) funds located within the respective county. County governments in California maintain investments pools for their operating and capital funds as well as for the investment of underlying local governments.

Other government/private-sponsored GIPs may be formed through inter-governmental agreements or directly by private firms. For example, the Florida Local Government Investment Trust (FLGIT) was created through the joint efforts of the Florida Association of Court Clerks and the Florida Association of Counties. The first privately sponsored GIP was the Pennsylvania Local Government Investment Trust (PLGIT), formed in early 1981.

Over time, GIPs have undergone a significant transformation due to new regulations intended to tighten operations and establish more stringent investment criteria. The greater scrutiny stems from increased awareness of the risks associated with investing in seemingly "safe" pools, as demonstrated by some well-publicized losses suffered by a few GIPs. Fortunately, many states have heeded the call for more oversight and disclosure by adopting the guidelines recommended by public associations such as, the National Association of State Treasurers (NAST), the Government Finance Officer's Association (GFOA), the Association of Public Treasurers of U.S. & Canada (APT US&C) and the Government Accounting Standards Board (GASB).

The investment practices and guidelines called for the adoption of formal and clear investment objectives, written and approved investment policies and full disclosure of pool objectives and policies. Many pools have established advisory boards to provide oversight to pool managers and to set basic investment guidelines and operating policies. However, some GIPs delegate control and investment decision-making responsibilities to the pool manager or fiduciary, with limited oversight and with no formal board. Proper controls begin with established investment policies and suitable oversight. GIP advisory boards add a much-needed level of oversight and help ensure that these policies are adhered to and are consistent with a pool's objectives.

Such oversight-whether performed by a board of pool participants or an outside, independent service-should be part of all GIP programs, regardless of the experience and track record of the pool's manager.

To provide an additional level of oversight, states and public investor associations have requested and received Standard & Poor's ratings on GIPs. Standard & Poor's maintains ratings (both public and private) on approximately 70 GIPs or funds targeted to public entities. Standard & Poor's has two types of pool ratings: Stable NAV Pool Ratings and Variable NAV Pool Ratings. Stable NAV GIPs can differ in their level of risk taking, internal oversight, participant services, and external reporting. GIPs are generally not registered with the SEC under the Investment Company Act of 1940, but many pools do choose to follow the investment guidelines of SEC Rule 2a-7 of the Investment Company Act governing U.S. money market funds. These pools seek to provide a stable net asset value

(NAV) to their participants and are run like money market funds.

Standard & Poor's has analyzed stable NAV or money market GIPs that maintain maximum weighted average maturities (WAMs) from 60 days to 365 days. Standard & Poor's believes that to provide adequate capacity to maintain principal value and limit exposure to loss, a pool's WAM should be limited to 90 days or less. For a fund with a 90-day WAM, it would take a 200-basis point increase in interest rates (with no cash withdrawals) to lose principal or "break the dollar." At a 365-day WAM, it would only take an increase of approximately 50-basis points to put the pool's principal value at risk. Standard & Poor's believes that when the investment objective of a GIP is to provide participants with a stable NAV (like an SEC registered money market fund), individual securities' final maturities (excluding floating-rate notes) should not exceed one year.

Standard & Poor's refers to longer-term GIPS, managed for a higher level of total returns, as variable NAV pools since they are similar to bond funds. For GIPs that pay out a variable NAV or market value, longer maturities can be appropriate, provided that proper disclosure is made to participants regarding the level of principal value at risk. The Government Accounting Standards Board (GASB) Statement 31 effected on June 15, 1997 requires GIPs that report amortized cost values to follow the SEC's Rule 2a-7 money market fund guidelines. GASB 31 calls for GIPs to report a constant NAV. GIPs that don't follow Rule 2a-7 guidelines are required to report a variable NAV or market value as bond funds report.

Pool sponsors have taken the initiative to educate their participants on the objectives, risk levels and liquidity of their pools. In the past, many pools were managed like "hybrid-type funds", that is they were invested in a mix of short-term (less than one-year) and long-term investments. The pools paid out dollar-for-dollar to participants upon withdrawals, regardless of the pool's current market value or current NAV. Over time, more and more pools have opted to create a short-term liquidity pool that are managed like money market funds with shorter maturities and more frequent pricing (i.e., stable NAV or money market pools). To satisfy investors demand for a higher yielding product, some state/counties have created short-term variable NAV or longer term (bond fund-like) pools for their participants' longer-term investment needs. For example, the Georgia Office of Treasury and Fiscal Services launched the bond fund GIP called Georgia Extended Asset Pool in July 2000 to complement Georgia Fund 1, a money market GIP. The City of Long Beach divided its pool into liquid and longer-term portfolios. Other cities and states have created similar two-tiered investment pools-one for daily operating and short-term needs (liquidity pool) and one for longer term needs.

Over the last several years, several states and other issuers with surplus high quality, short-to-intermediate term fixed-income assets have sought to use these funds as back-up liquidity support for their short-term debt issues. A public or private credit quality and volatility rating from Standard & Poor's can provide the ongoing analysis of a pool's credit quality, liquidity, operating procedures and management required to provide "self liquidity" for short-term debt such as variable rate demand notes and tax-exempt commercial paper. Several states pools, including Texas Treasury, and other municipal issuers from the Higher-Ed, HealthCare, and Private-Foundations have requested Standard & Poor's to conduct ongoing assessments of the liquidity of their fixed-income portfolios identified as the liquidity source.

Stable Net Asset Value (NAV) Pool Ratings Criteria

Standard & Poor's ratings criteria for stable net asset value (NAV) investment pools is largely the same as its principal stability fund ratings (also know as money market fund ratings) criteria given the similarity in investment objectives of these investment vehicles. Therefore, all references to money market funds in the following ratings criteria article also apply to government investment pools (GIPs) or any other pool of assets that seek to maintain a stable NAV. For further information and in-depth analysis please refer to the most recent Standard & Poor's Fund Ratings Criteria publication.

A stable NAV or money market fund rating is a safety rating, expressing Standard & Poor's opinion on the ability of a fund to maintain principal value and limit exposure to loss due to credit, market, and/or liquidity risk. Ratings can range from 'AAAm' to 'Dm', with the 'm' denoting a money market fund.

(See table, "Principal Stability Fund Ratings Definitions"). The 'm' distinguishes the money market fund rating from a Standard & Poor's traditional debt rating. A traditional debt rating is usually not subscripted and indicates a borrower's ability to repay principal and interest on a timely basis. A money market fund rating is not directly comparable to a debt rating because of differences in investment characteristics, rating criteria, and the creditworthiness of portfolio investments. Distinct criteria were established for each rating category.

Rating approach and process

A stable NAV pool or money market fund rating reflects Standard & Poor's opinion of the safety of invested principal based on an analysis of portfolio credit quality, market price exposure, and management. Credit quality incorporates the credit risk of securities and the counterparty risk of transaction-based investments, such as repurchase agreements (repos). Market price exposure relates to the potential for a decline in the market value of a money market fund's assets. Within this area, Standard & Poor's looks at weighted average maturity (WAM), liquidity, investment concentration, variable-rate securities, securities lending and reverse repos, shareholder composition, and NAV deviation procedures to name a few. In addition, the analysis of management is based on a meeting with senior fund officials, and on both public and private information.

The rating process begins when Standard & Poor's receives a written request to rate a particular pool or fund. At this point, the analyst assigned to the fund asks for certain pertinent information regarding the fund. Upon review of the information, the analyst schedules a management meeting with fund officials. The analyst next discusses the fund with a rating committee composed of senior Standard & Poor's Fund Services' analysts. The committee examines all relevant information uncovered in the rating process. Following the analyst's rating presentation, the committee votes on a final rating. Subsequently, this rating is monitored on a weekly basis to ensure accurate and current ratings. Additionally, Standard & Poor's conducts annual management review meetings for each rated fund to evaluate any changes that may have occurred in policy, philosophy, personnel, operations, and controls.

Credit quality

Credit quality analysis is focused on the risks associated with the quality, type, and diversity of the instruments that comprise the portfolio. The credit quality assessment for each instrument is based on the rating that Standard & Poor's has assigned to the security. The minimum credit quality standards for each pool are based on the fund's rating category and maturity structure. For example, pools rated 'AAAm' are expected to maintain at least 50% in securities rated 'A-1+' by Standard & Poor's with no more than 50% in securities rated 'A-1' by Standard & Poor's. Additionally, securities that are on Standard & Poor's CreditWatch list with negative outlooks should be limited to maturities of 30 days or less. For further information and in-depth analysis please refer to the most recent Standard & Poor's Fund Ratings Criteria publication.

Repurchase agreements (Repos)

While Standard & Poor's recognizes the importance of the collateral securing repurchase agreements (repos), our main focus with regards to the risk in these securities is the creditworthiness of the counterparty. Generally speaking, the underlying securities in traditional repos are typically ineligible investments for money market funds, either because of their maturity (longer than 397 days) or type (e.g., certain mortgage-backed securities). A fund that takes possession of such collateral will have to sell it as soon as possible. Any delay in a fund's ability to sell the securities could create both liquidity and market risks that are inappropriate for money funds. This is especially true for non-traditional collateral, as these security types (e.g., non-investment grade corporates, equities) possess higher potential price volatility than traditional collateral. For these reasons, Standard & Poor's ratings criteria calls for all counterparties used by highly rated money market funds to be rated either 'A-1' or 'A-1+'. The following bullets outline specific repo criteria for 'AAAm' rated money market funds and pools:

- The aggregate amount of all repos (regardless of the rating) with maturities of more than seven calendar days may not exceed 10% of a fund's total assets.
- Overnight repos with any single 'A-1' issuer are limited to no more than 25% of a fund's total assets.
- Repos with maturities beyond overnight and less than or equal to seven days with any single Issuer ('A-1+') are limited to no more than 25% of a fund's total assets.
- Repos with maturities beyond overnight and less than or equal to seven days with any single issuer ('A-1') are limited to no more than 10% of a fund's total assets.

For these criteria, the maturity of a repo is defined as the absolute maturity of the agreement. If, however, the agreement contains a put that would result in a lower effective maturity for the agreement, Standard & Poor's will review the repo documentation to be certain of the unconditional nature of the put feature. Standard & Poor's has the same criteria for both triparty and deliverable repos. However, where a tri-party repo is used, Standard & Poor's will examine the fund adviser's procedures ensuring that the proper type and amount of collateral is received. Standard & Poor's repo diversification criteria for funds rated 'AAm', 'Am' and 'BBBm' is identical to the bullets above except for the permitted exposure to 'A-2' issuers

on an overnight or one day basis of 5% for ‘AAm’, 10% for ‘Am’ and 25% for ‘BBBm’.

To ensure that repos are properly secured, Standard & Poor’s looks for certain written representations from all funds investing in repos. Regarding perfection of the fund’s security interest in repo collateral, Standard & Poor’s seeks written representations that the fund takes delivery of the collateral. For additional information concerning written representation, non-traditional repos collateral, and evaluating counterparties, please refer to the most recent Standard & Poor’s Fund Ratings Criteria publication.

Market price exposure

The most important part of money market fund or stable NAV pool analysis is judging a fund’s sensitivity to changing market conditions. Money market funds or stable NAV pools are required to calculate periodically the market value of their assets to determine if the fund’s actual NAV per share materially deviates from $1.00-and to take action if there is significant deviation. Deviations of greater than plus or minus 0.5% create a situation in which the fund must offer and redeem shares at a price other than $1.00.

Although GIPs and other pooled investment vehicles do not necessarily have this requirement, the same fundamental risk principles apply. Recognizing this small margin for error, Standard & Poor’s focuses heavily on the potential deviation in market value (referred to as market price exposure). To determine each pool’s market price exposure, the following variable are analyzed for each pool rating:

- Weighted, average maturity (WAM)
- Liquidity
- Diversification
- Index and spread risk
- Potential dilution of a pool’s participant asset base, and
- Security and portfolio valuation methods.

Weighted average maturity (WAM)

Determination of market price exposure starts with an examination of a fund’s susceptibility to rising interest rates. The portfolio’s Weighted Average Maturity (WAM)is a key determinant of the tolerance of a fund’s investments to rising interest rates. Standard & Poor’s expects funds rated ‘AAAm’ to maintain a maximum WAM of 60 days or less. However, the actual maximum WAM depends on fund size, asset volatility, liquidity needs and participant profile. Funds with less than $100 million in assets and/or a highly concentrated shareholder/participant base may be limited to a shorter WAM, unless fund management can make a compelling argument otherwise.

Standard & Poor’s is often asked to rate small and start-up funds that have highly concentrated shareholder positions. Standard & Poor’s is concerned about the impact that a large redemption by one or more of the major shareholders may have on the NAV of the fund. Consequently, until a fund has grown to at least $100 million with a diverse shareholder base, Standard & Poor’s will seek assurances that the fund will maintain a shorter WAM. Higher WAMs are considered appropriate for funds in lower rating categories.

Liquidity

The liquidity of portfolio investments is also of critical importance in determining market price exposure and maintaining a stable NAV because the degree of liquidity can affect the market value of investments. The liquidity of a security refers to the speed at which that security can be sold for approximately the price at which the fund has it valued or priced. Securities that are less liquid are subject to greater price variability. Certain securities may be liquid one day, and illiquid the next. In determining a fund’s rating, Standard & Poor’s considers each fund’s liquidity needs and its ability to quickly sell portfolio holdings if the need arises to meet cash outflows or large redemptions. In reviewing a pool’s liquidity, Standard & Poor’s analysts take into consideration the types of investments, their liquidity characteristics, and concentrations by issuers and affiliates. The potential for sizable declines in portfolio market value increases with the proportion of relatively illiquid or less liquid investments in the portfolio. Longer WAMs increase the fund’s vulnerability to interest rate movements.

Diversification

As a general rule, no single issuer should represent more than 5% of fund assets. However, if mitigating circumstances are present, a single issuer can represent up to 10% to 25% depending on the maturity of the investment. ‘AAA’ rated government issues are excluded from this condition (see section entitled Government Agency Concentration).

Government agency concentration

Liquidity analysis is done for all issues, no matter what their credit quality. For example, under Standard & Poor’s ‘AAAm’ guidelines, a fund should generally have no more than one-third of its assets invested in the securities of any one government agency. While the credit quality of these agencies is not typically a concern, adverse publicity about an agency can cause financial markets to shun its securities. This could pose liquidity problems for funds holding large amounts of the given agency’s paper, as such instruments’ market values may drop materially below what the fund paid for them. Standard &

Poor's one-third-concentration policy is a general guideline. Funds with greater concentrations are subject to a WAM adjustment factor and/or higher levels of highly liquid securities.

Index and spread risk in variable and floating rate securities

Variable-rate notes (VRNs) and Floating-rate notes (FRNs) present unique market price risks. VRNs used in money funds are typically linked to conventional money market indices, providing funds with yields that track short-term interest rate movements. These investments are designed to exhibit less interest rate risk when compared with fixed-rate investments. However, this is not the case for all VRNs. Factors affecting the value of these instruments include index risk and spread risk. Index risk is the risk that the coupon of a VRN will not adjust in tandem with money market rates. Index risk can be introduced by calculating the variable-rate coupon based on one of the following:

- A non-money index
- A money market index in which the coupon adjusts based on a multiple (or fraction) of the index, and
- An index based on the difference (or spread) between two or more indices.

When analyzing VRNs in money market funds, Standard & Poor's compares the index used in the variable-rate adjustment formula to a standard money market index (e.g., the Federal Funds Rate). Standard & Poor's believes that for all money funds rated 'BBBm' and above, the index should have a correlation of at least 95% of the effective Fed Funds Rate. Additionally by this measure, non-money market fund or NAV pool indices such as the 11th District Cost of Funds Index (COFI) and the 10-year Constant Maturity Treasury Index are clearly unsuitable, with historical correlations of well below 90%.

Some VRNs may use indices that are well correlated to traditional money market indices. Yet, because of their rate adjustment formulas, they still introduce significant price risk. The longer the remaining life of a variable-rate security, the more it becomes susceptible to market price deterioration associated with spread risk, even when tied to a highly correlated index. Because of the potential impacts of spread risk on the market prices of VRNs, Standard & Poor's expects that rated pools limit the remaining maturity of U.S. government VRNs/Floating Rate Securities (FRNs) to two years for 'AAAm', three years for 'AAm', four years for 'Am', and five years for 'BBBm'.

Corporate and structured (e.g., asset backed securities or ABS) VRNs/FRNs have the added risk of credit deterioration and are limited to final maturities of 13 months or less for money market funds registered under Rule 2a-7. For rated pools, on a case-by-case basis, consideration will be given to requests to approve holdings of FRNs/VRNs for issuers other than 'AAA'-rated sovereigns (i.e., corporates and ABS) with time to final maturity greater than 397 days but no more than two years. Before granting approval to extend the maturity range of VRN/FRN holdings, Standard & Poor's will seek assurance that ample liquidity can be maintained by virtue of the fund's size, diversified shareholder base and range of other assets and that adequate resources are available to analyze and manage credit risk.

If such practice is approved, all such FRNs/VRNs must have a Standard & Poor's short-term rating of 'A-1+'. If the Issuer does not possess a short-term rating, a Standard & Poor's long-term rating of 'AA' or better is required. The total holdings of all such VRNs will be limited to no more than 5% per Issuer and no more than 10% of net assets of the fund. The percentage of VRNs in a fund also enters into the rating analysis to determine a fund's overall risk profile and is factored in on a case-by-case basis in conjunction with the fund's other holdings.

Investing in other money market funds

Standard & Poor's criteria calls for rated government investment pools (GIPs) that invest in other money market funds (also called registered investment companies or RICs) to carry an identical rating. For example, a Standard & Poor's 'AAAm' pool may only invest in Standard & Poor's 'AAAm' money market funds. Standard & Poor's money market fund criteria for rated pools generally calls for a maximum 25% exposure to any one fund with no stated maximum exposure. However, while no maximum is stated, Standard & Poor's will inquire as to the feasibility of one rated fund investing a majority of its assets in other rated funds. This includes an analysis of the rated funds position on fee rebates since investing in another money market fund will ultimately cause the shareholder to be paying fees on two funds. In addition, there are percentage limits that the investing fund may comprise of the fund it is investing in. This is because it would not be prudent for the fund to invest in another rated fund if it were going to comprise a significant portion of its assets.

Dilution

A money fund or pool's market price exposure is also affected by the flow of money into and out of the fund. Standard & Poor's analyzes shareholder/participant characteristics and behavior in order to assess each fund's cash-flow volatility. Stable NAV pools issue and redeem shares at $1.00, provided that their market value is between $0.995

and $1.005. Because funds can pay out $1.00 on shares that may actually be worth as little as $0.995, the remaining participants in the fund absorb the difference. This is referred to as dilution; redeeming shares at a price above their actual market value is diluting the value of the fund's holdings. This situation could be significantly worse for stable NAV GIPs that do not employ frequent marking-to-market because the pool's true value can drop well below $0.995 without it being recognized. In analyzing the pool's participant base, Standard & Poor's examines the expected redemption characteristics. It then models hypothetical interest-rate movements in conjunction with reasonably severe levels of redemptions in order to judge the potential dilution a fund may experience. Standard & Poor's expects that a fund's investments should be tailored to its potential cash flow needs. For pools with a potentially volatile participant base, a more conservative approach must be taken with regard to WAM and liquidity.

Shareholder characteristics

A money market fund's market price exposure is also affected by the flow of money into and out of the fund. Unexpected redemptions have a direct influence on a fund's NAV. Therefore, Standard & Poor's reviews the characteristics of each fund's shareholder/participant base to determine the potential impact of share redemptions on market price exposure. This review of shareholder constituency encompasses consideration of the number, average holding size, type of investor, historical asset volatility, and the relationship management has with the participant. The proportion of voluntary versus involuntary investors and the past history of redemptions are also examined. Pools with histories of volatile subscription and redemption patterns are expected to have shorter weighted average portfolio maturities.

Portfolio valuation

A Standard & Poor's stable NAV pool or money market fund rating directly addresses the ability of a fund to maintain a NAV that does not deviate by more than one-half of 1%. For a fund to effectively stay within this narrow range, accurate pricing of its securities is essential. Most stable NAV pool or money market fund instruments are highly liquid and easy to price. However, some complex, structured, and derivative securities present pricing difficulties. Complex and derivative securities often lack efficient, liquid markets. Trading in these securities can be infrequent, creating varying price quotes among dealers and wide bid/ask spreads.

The prices of these types of securities may be determined in a variety of ways, including dealer quotes, matrix pricing formulas, spreads to benchmark securities, pricing services, or even by the fund advisers themselves. All of these methods have drawbacks. Dealer quotes on thinly (infrequently) traded securities often represent indicative pricing levels and rarely constitutes an actual bid to purchase the security. Matrix prices, pricing service quotes, and spread calculations are not based on actual trades, and do not represent a price at which anyone actually offered to purchase the security. These methods calculate a hypothetical price that is not verifiable. Pricing by fund managers often occurs when the manager either disagrees with the other pricing methods or holds securities so unique that other pricing methods are inadequate. Clearly, even if the fund manager can determine fair value prices based on in-depth analytics, it is far from certain that any buyers are willing to purchase the securities at or near those prices.

Before purchasing complex, derivative, or otherwise illiquid securities, portfolio managers should carefully examine the pricing issue. It is necessary to evaluate the number of available pricing sources, with an eye toward identifying material discrepancies. Portfolio managers should also be aware of pricing methodology, and should compare the results to recent trading activity. It is inadvisable for a fund's manager to solely accept the calculations of a security's issuer or dealer in determining the value of an investment. This information may be either highly biased or based on inaccurate assumptions, or both. Portfolio managers should not only be able to determine their own fair value for securities that are difficult to price, but need also to consider the marketplace for each security and the potential volatility that can be caused by inefficient market pricing. If a fund adviser lacks the ability to assess the potential market behavior of a security with a high degree of comfort, the security should not be purchased for that money market fund.

Net asset value (NAV) monitoring

Should a fund experience a situation where stability of its $1.00 NAV is in jeopardy, there are several actions the fund may take. These include withholding dividends, selling securities to realize gains or losses, valuing the shares at the market rather than at amortized cost, or waiting out the situation to determine if the problem is only temporary. In the rating process, Standard & Poor's reviews the formal and informal policies and procedures the fund has in place to monitor and correct such situations.

Management

The rating process includes a meeting between the fund's officials and fund analysts from Standard & Poor's. Standard & Poor's evaluates the effectiveness of fund management in implementing a

dynamic portfolio process consistent with its stated investment goals. Standard & Poor's believes that these meetings are central to a meaningful fund rating service. Management assessment considers experience and track record in portfolio management, operating policies and risk preferences, credibility and commitment to policies, and the extent and thoroughness of internal controls.

Experience

Standard & Poor's judges each fund management team on its own merits. Focus is placed on the way the fund is managed in relation to its shareholder base and stated investment objectives. Standard & Poor's closely examines how daily operations of the fund are conducted. This examination includes, but is not limited to, organizational structure, oversight, and depth of staff. An experienced fund manager with a proven track record in money market funds greatly enhances a fund's safety. This manager does not necessarily have to make every investment decision, but should be closely involved with fund oversight. It is also necessary to distinguish between an experienced stable NAV pool or money market fund manager and someone who has experience managing long-term investments. Managing a stable NAV fund is very different from managing a bond fund with a variable share price. Investment policies and strategies that may be very prudent for bond funds can be disastrous for money market funds. The precision necessary to run a stable NAV pool or money market fund successfully requires a different mindset than is required in managing other fixed-income vehicles. An experienced fixed-income manager does not necessarily translate into an effective stable NAV pool or money market fund manager. Therefore, Standard & Poor's emphasizes the level of experience in managing money market funds or stable NAV pools in its review of fund management. Lack of experience can result in a lower rating, more stringent ratings criteria (such as a shorter WAM), or both.

Operating procedures and risk preferences

Standard & Poor's evaluates the fund manager's operating procedures and risk preferences in conjunction with each rating. A key component of this review is the investment decision-making process. Numerous investment decisions are made daily for all money market funds or stable NAV pools. Standard & Poor's examines how these decisions are made, who is charged with executing them, and the oversight procedures that are in place. Standard & Poor's also focuses on the amount, type, and quality of information used in making policy and investment decisions. This includes the size and capabilities of the credit research staff, the access to current economic data and analysis, and the types of on-line business information services used.

Credit quality is one area that should be documented with formal written procedures. A fund adviser should establish an approved investment list as well as policies for adding or removing names from that list. Additionally, a process and methodology for periodically evaluating the credit quality of all approved investments should be established.

Standard & Poor's also expects clear and explicit investment policies for the pool including the use of variable rate securities (VRNs), structured notes, and derivative instruments. Fund investment policies should incorporate procedures on the approval, risk measurement, control, and limits related to these investments. Fund managers should be able to present an analytical basis for determining that such securities are indeed eligible fund investments and have a reasonable likelihood of maintaining or repricing to par at each reset until maturity. This analytical basis should include a review of historical index behavior and sensitivity analysis.

Internal controls

Standard & Poor's closely considers the internal controls of fund advisers and pool managers. Included here are pricing policies, NAV deviation procedures, depth of staff, stress-testing capabilities, asset flow monitoring, trade ticket verification, systems backups, and disaster recovery. Accurate pricing is a key factor in maintaining a stable NAV. Standard & Poor's expects all investment advisers of rated money funds to have the ability to price portfolio securities and calculate a fund's actual NAV in-house, and to do so periodically. Advisers are expected to compare the market value of the fund to its amortized cost value on a weekly basis. In addition, managers should have built-in procedures to check the pricing of outside providers and question any discrepancies that may occur. Investment advisers need to be able to calculate NAV, but they also need to have explicit written plans for dealing with any material deviation. NAV deviation procedures are the responsibility of the pool's manager and the advisory board, and should not be left to a third-party administrator.

Fund managers should also be reasonably prepared for the unexpected. This entails the ability to perform "what if" and stress test analyses. For example, a fund manager should be able to calculate the impact of any security purchase on the fund's WAM. This calculation should factor in the influence of sudden or unexpected redemptions in conjunction with the security purchase. In addition, fund managers should have the ability to stress test both individual securities and entire portfolios. Individual security tests should estimate price sensitivity under

severe interest rate movements. Portfolio testing should stress the fund's assets in aggregate under the same interest rate scenarios, but should also measure the impact of dilution on NAV assuming sizable redemption activity.

It is also important to have detailed contingency management and disaster recovery plans that are tested periodically. Earthquakes in Los Angeles and San Francisco, floods in Houston and the Blackout in the Northeastern U.S. are just a few past examples of situations in which emergency action plans had to be executed.

Standard & Poor's rated government investment pool(GIP) indices

Standard & Poor's Rated GIP Indices are performance indicators of rated GIPs that maintain a stable net asset value (NAV) of $1.00 per share. As of September 2006, there are three Government Investment Pool indices:

- Standard & Poor's Rated Government Investment Pool Index/All
- Standard & Poor's Rated Government Investment Pool Index/Government
- Standard & Poor's Rated Government Investment Pool Index/General Purpose Taxable

These indices provide a simple average of seven-day and 30-day net and gross yields, average days to maturity, as well as the total assets of all pools publicly rated in Standard & Poor's two highest money market fund rating categories: 'AAAm' and 'AAm'.

Variable Net Asset (NAV) Pool Ratings Criteria

Standard & Poor's ratings criteria for variable net asset value (NAV) investment pools are the same as its fund credit and volatility ratings criteria. Therefore, all references to bond funds in the following ratings criteria article also apply to government investment pools (GIPs) or any other longer-term pools of assets managed, like a fixed-income bond fund, that provides a variable NAV.

Ratings approach and process

Standard & Poor's assigns credit quality and volatility ratings to GIPs that invest in fixed-income assets. The credit quality rating assigned to a fund addresses the level of protection its portfolio holdings provide against losses from credit defaults. Credit quality ratings, which range from 'AAAf' (highest level of protection) to 'CCCf' (least protection), are based on an analysis of the fund's overall portfolio credit quality.

Volatility ratings offer a current opinion of a fund's sensitivity to changing market conditions. Volatility ratings, which range from 'S1' (lowest volatility) to 'S6' (highest volatility), are based on an analysis of a fund's investment strategy and portfolio level risk, including interest-rate risk, credit quality, liquidity, concentration, call and option risk, and currency risk. The effects of various portfolio strategies, such as the use of leverage, hedging, and derivative instruments, are also factored into the rating. The goals of Standard & Poor's analysis are to uncover risk sources in a managed fund's portfolio and investment strategies and to assess the potential impact on its rate of return and NAV variability. Standard & Poor's monitors each fund's portfolio holdings on a monthly basis to maintain current and accurate assessments of its credit quality and volatility profile.

Standard & Poor's assigns volatility and credit quality ratings to funds on a request basis. To maintain the accuracy of the ratings, Standard and Poor's requires fund management to provide portfolio and investment information to Standard & Poor's on a frequent and timely basis. The rating process is described below.

The rating process for bond funds or variable NAV pool ratings includes an analysis of their portfolio level risk, historical performance, and management. After receiving and analyzing the information required for a rating, Standard & Poor's will conduct a face-to-face management review meeting. Standard & Poor's meets with fund management officials to evaluate the effectiveness of fund management in implementing a portfolio strategy that is consistent with its stated investment goals. The meeting is focused on the following topics:

- Depth and stability of the fund management team
- Investment philosophy
- Operating policies, internal controls, and risk preferences
- Credit risk
- Duration profile
- Use of leverage
- Investment targets
- Performance history

Upon completion of the management meeting, the Standard & Poor's analyst then discusses his or her findings with a ratings committee and makes a rating recommendation. The committee is composed of at least three senior analysts, as well as the lead and backup analysts. The committee reviews and discusses the information uncovered in the analysis and any open items from the management meeting, then votes on a rating(s) for the fund. Once a rating is issued, Standard & Poor's monitors the fund on a monthly basis to ensure that any changes in the portfolio or the fund management's operating policies do not alter the fund's rating(s). Standard & Poor's also conducts an annual man-

agement review and portfolio strategy meeting to review any changes made during the year.

Fund credit quality ratings criteria

A Standard & Poor's credit quality rating is an assessment of the overall credit quality of a fund's portfolio. Credit quality ratings, identified by the 'f' subscript, are assigned to bond funds and other actively managed funds that exhibit variable NAVs. The ratings reflect the level of protection against losses from credit defaults and are based on an analysis of the credit quality of the portfolio investments and the likelihood of counterparty defaults (see Variable Net Asset Value(NAV) Pool Credit Quality Rating Definitions).

The credit quality rating captures the fund's overall exposure to default risk and is based on a credit matrix approach derived from Standard & Poor's historical default and ratings transition rates. Standard & Poor's credit quality criteria calls for the assets of a managed fund, and its counterparties, to be consistent with the credit quality rating. The assessment is based on the credit quality and/or ratings of the investments held by the fund, as well as the credit quality of the counterparties with which the fund engages in market transactions, such as swaps or repurchase agreements (repos).

To evaluate a fund's overall level of protection against losses associated with credit risk, Standard & Poor's applies the factors and scores from the Credit Quality Matrix to the fund's portfolio holdings. These credit factors and credit quality scores are derived from Standard & Poor's historical ratings stability and ratings transition studies. The credit factor for each of the long-term ratings categories (e.g., 'AAA', 'AA', 'BBB') were derived from the singular, discrete, worst-case one-year default rate experience and the average one-year ratings transition experienced during a 20-year period. The resulting credit factor for each long-term rating category assumes that the securities or holdings within each rating category will exhibit the worst-case default rates and the average ratings transition rates over a one-year holding period. The credit quality rating assigned to a fund or pool of managed assets does not address a fund's ability to meet 'payment obligations'. For further information and in-depth analysis please refer to the most recent Standard & Poor's Fund Ratings Criteria publication.

In conjunction with this analysis, Standard & Poor's closely reviews the manager's internal credit analysis and security evaluation and surveillance procedures. Securities rated by other nationally recognized statistical rating organizations (NRSRO's), but not rated by Standard & Poor's, may be considered eligible if there is an analytic basis for considering these securities as having comparable credit quality. Total exposure to non-Standard & Poor's rated securities in a rated bond fund should be 25% or less, with no more than 5% in any one issuer and may be subject to certain criteria adjustments. For further information and in-depth analysis please refer to the most recent Standard & Poor's Fund Ratings Criteria publication.

Counterparty criteria

Standard & Poor's has established minimum credit quality guidelines for counterparties that engage in

Variable Net Asset Value (NAV) Pool Credit Quality Rating Definitions

A Standard & Poor's Bond Fund/Variable Net Asset Value (NAV) Pool credit quality rating is an assessment of the overall credit quality of a fund's portfolio. The rating reflects the level of protection that the pool's portfolio provides against losses from credit defaults. Credit quality ratings, identified by the 'f' subscript, are assigned to bond funds and other actively managed funds that exhibit variable net asset values. These ratings are current assessments of the overall credit quality of a fund's portfolio. The ratings reflect the level of protection against losses from credit defaults and are based on an analysis of the credit quality of the portfolio investments and the likelihood of counterparty defaults. Symbols and definitions follow:

AAAf

The fund's portfolio holdings provide extremely strong protection against losses from credit defaults.

AAf

The fund's portfolio holdings provide very strong protection against losses from credit defaults.

Af

The fund's portfolio holdings provide strong protection against losses from credit defaults.

BBBf

The fund's portfolio holdings provide adequate protection against losses from credit defaults.

BBf

The fund's portfolio holdings provide uncertain protection against losses from credit defaults.

Bf

The fund's portfolio holdings exhibit vulnerability to losses from credit defaults.

CCCf

The fund's portfolio holdings make it extremely vulnerable to losses from credit defaults.

Plus or Minus

The ratings from 'AAf' to 'CCCf' may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the major rating categories.

A credit quality rating is not a recommendation to purchase, sell, or hold a security, inasmuch as it is not a comment on the market price, yield, or suitability for a particular investor. The ratings are based on current information furnished by the fund or obtained from other sources that Standard & Poor's considers reliable. Standard & Poor's does not perform an audit in connection with any rating and may, on occasion, rely on unaudited information The ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances.

Variable Net Asset Value (NAV) Pool Volatility Ratings Definitions

A bond fund/variable net asset value (NAV) pool volatility ratings is a current opinion of a fixed-income fund's sensitivity to changing market conditions relative to the risk of a portfolio composed of government securities and denominated in the base currency of the fund. Volatility ratings evaluate the fund's sensitivity to interest-rate movement, credit risk, investment diversification or concentration, liquidity, leverage and other factors.

S1

Bond funds that possess low sensitivity to changing market conditions are rated S1. These funds possess an aggregate level of risk that is less than or equal to that of a portfolio comprised of government securities* maturing within one to three years and denominated in the base currency of the fund. Within this category, certain funds are designated with a plus sign (+). This indicates the fund's extremely low sensitivity to changing market conditions. These funds possess an aggregate level of risk that is less than or equal to that of a portfolio comprised of the highest quality fixed-income instruments with an average maturity of one year or less.

S2

Bond funds that possess low to moderate sensitivity to changing market conditions are rated S2. These funds possess an aggregate level of risk that is less than or equal to that of a portfolio comprised of government securities maturing within three to seven

S3

Bond funds that possess moderate sensitivity to changing market conditions are rated S3. These funds possess an aggregate level of risk that is less than or equal to that of a portfolio comprised of government securities maturing within seven to 10 years and denominated in the base currency of the fund.

S4

Bond funds that possess moderate to high sensitivity to changing market conditions are rated S4. These funds possess an aggregate level of risk that is less than or equal to that of a portfolio comprised of government securities maturing beyond 10 years and denominated in the base currency of the fund.

S5

Bond funds that possess high sensitivity to changing market conditions are rated S5. These funds may be exposed to a variety of significant risks including high concentration risks, high leverage, and investments in complex structured and/or illiquid securities.

S6

Bond funds that possess the highest sensitivity to changing market conditions are rated S6. These funds include those with highly speculative investment strategies with rated S6. These funds include those with highly speculative investment strategies with multiple forms of significant risks, with little or no diversification benefits.

* Government securities (for S1 through S4 categories) are intended to signify the most liquid, highest quality securities issued by a sovereign government. The ratings are based on current information furnished by the fund to Standard & Poor's or obtained by Standard & Poor's from other sources it considers reliable. Standard & Poor's does not perform an audit in connection with any rating, and may rely on unaudited financial information. The ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information, or based on other circumstances. The rating is not a recommendation to purchase, sell, or hold any security held or issued by the fund, inasmuch as it does not comment on market price, yield, or suitability for a particular investor.

market transactions with credit rated and volatility rated funds.

These market transactions may include, but are not limited to repurchase agreements (repos), reverse repos, forward purchases, forward exchange contracts, swaps and other hedging positions. A counterparty's failure to meet its obligations contracted with a fund may impair the successful outcome of its intended objectives. Due to this risk, Standard & Poor's criteria calls for a counterparty's minimum rating to be no less than one full rating category below the fund's rating for transactions spanning one year or longer. For example, 'AAAf' and rated funds would need to use 'AA' or better rated entities for transactions equal to or greater than one year. Counterparty Criteria for all rating categories are as follows:

- AAAf—Long-term transactions (i.e., one year or longer)-AA or better. Short-term (i.e., less than one year): A-2 or better for overnight transactions; A-1 or better for longer than overnight.
- AAf-Long-term transactions (i.e.,one year or longer)-A or better. Short-term (i.e., less than one year): A-2 or better for overnight transactions; A-1 or better for longer than overnight.
- Af—Long-term transactions (i.e., one year or longer)-BBB or better. Short-term (i.e., less than one year): A-2 or better.
- BBBf—Long-term transactions (one year or longer)-BBB or better. Short-term (i.e., less than one year): A-3 or better.

Volatility ratings analysis

Standard & Poor's volatility ratings are designed to rank or designate bond funds or variable NAV pools according to the degree to which they are exposed to the factors that ultimately lead to share price and return volatility. The volatility ratings scale, which ranges from 'S1' (lowest sensitivity) to 'S6' (highest sensitivity), expresses Standard & Poor's current opinion of a fixed-income fund's sensitivity to changing market conditions. The volatility profiles of the first four categories ('S1' through 'S4') are measured and expressed on a relative basis to established government indices with different maturity bands (see Variable Net Asset Value (NAV) Pool Volatility Ratings Definitions), to provide investors with market benchmarks for risk and return comparisons. Standard & Poor's evaluation of funds for volatility ratings includes:

- Portfolio risk analysis
- Historical risk analysis
- Management assessment

Portfolio and historical risk analyses often yield similar results and reflect a long-term commitment to a particular investment objective and risk-tolerance level by the fund's adviser and portfolio manager. Where there are significant differences between the current risk and historical risk profiles, management assessment becomes particularly important. Discussions with fund management about investment policies and strategies, asset selection, internal research capabilities, and portfolio risk monitoring help Standard & Poor's to assess the fund's current and ongoing risk profiles. The primary goal is to evaluate the adviser's effectiveness in maintaining an investment policy that is consistent with the fund's stated investment objectives and investors' expectations.

The ratings analysis focuses on measuring quantifiable portfolio risk factors, including interest-rate risk, yield curve risk, credit risk, liquidity risk, options risk, and concentration risk. In addition, Standard & Poor's also evaluates the pool's total return historical volatility. This review involves two types of analysis. First, the identification centers on the level of volatility and distribution of monthly returns of the pool over a minimum of 36 months in relation to certain fixed-income asset classes and indices that Standard & Poor's tracks on an ongoing basis. The second analysis is focused on understanding how past volatility relates to the pool's investment objectives, the portfolio construction process (including risk controls), and the fund's outcome as a result of market developments that occurred during the period under review. The relevance of this part of the analysis in the final volatility rating will depend on the second step in the rating process, or the portfolio analysis.

The analysis of current portfolio risk is undertaken to confirm (or not confirm) the continuation of past investment policies and their attendant risks. Portfolio analysis is designed specifically to evaluate whether the fund has a greater chance of losing more money (i.e., experience greater volatility) in the short term than historical volatility of returns would suggest. An abnormal short-term loss is one that is inconsistent with the fund's history, current market conditions, or the fund's stated investment objectives. Furthermore, while higher risk is often associated with higher returns, higher risk also means a greater uncertainty over all outcomes. Risk or volatility can manifest itself in either a continuous fashion or at discrete intervals, in which case the illusion of low volatility can often prevail for an extended period of time. For example, interest-rate sensitive funds (such as funds that invest in highly creditworthy securities like U.S. Treasury securities) often exhibit more volatility than funds that invest in low-grade, high-yield, or illiquid securities; however, at times, these funds can exhibit high to extremely high volatility due to investor sentiment regarding increased default or liquidity risks.

Portfolio analysis often incorporates stress-testing techniques that examine the portfolio's returns (or expected returns) under various market scenarios, as well as for different portfolios. Portfolio level risk analysis is focused on understanding the sources or factors that contribute to risk, which, for most bond funds investing in marketable fixed-income securities, includes interest-rate/option risk, credit risk, and liquidity risk.

Principal Stability Fund Ratings (Stable NAV Pool) Definitions

A principal stability fund rating (also known as a money market fund rating) is not directly comparable with a bond rating due to differences in investment characteristics, rating criteria, and creditworthiness of portfolio investments. For example, a money market fund portfolio provides greater liquidity, price stability, and diversification than a long-term bond, but not necessarily the credit quality that would be indicated by the corresponding bond rating. Ratings are not commentaries on yield levels. A principal stability fund rating is not a recommendation to buy, sell, or hold the shares of a fund. Further, the rating may be changed, suspended, or withdrawn as a result of changes in or unavailability of information related to the fund.

AAAm

Fund has extremely strong capacity maintain principal stability and to limit exposure to principal losses due to credit, market, and/or liquidity risks.

AAm

Fund has very strong capacity to maintain principal stability and to limit exposure to principal losses due to credit, market, and/or liquidity risks.

Am

Fund has strong capacity to maintain principal stability, but is somewhat more susceptible to principal losses due to adverse credit, market and/or liquidity risks.

BBBm

Fund has adequate capacity to maintain principal stability. Nevertheless, adverse market conditions and/or higher levels of redemption activity are more likely to lead to a weakened capacity to limit exposure to principal loss as a result of higher exposure to credit, market and/or liquidity risks.

BBm

Fund has uncertain capacity to maintain principal stability, and is vulnerable to principal losses resulting from its exposures to credit, market, and/or liquidtiy risks.

Dm

Fund has failed to maintain principal stability resulting in a realized or unrealized loss of principal.

G

The letter 'G' follows the rating symbol when a fund's portfolio consists entirely of direct U.S. government securities.

Plus or minus ratings may be modified (except 'AAAm') to show relative standing within the rating categories.

Interest rate/option risk

Interest-rate risk refers to the fact that the longer the maturity of a security, the more uncertain and therefore more risky the present value of its cash flows. Securities with an uncertain maturity, such as, callable securities, or securities with embedded options (e.g., like mortgage-backed bonds) are by nature riskier than those with a known maturity. In addition, the distribution of a security or a fund's cash flows along the maturity spectrum (or yield curve) is as relevant as the maturity itself. A bond's (or pool's) interest-rate risk is best measured by its duration. Duration approximates the overall price sensitivity of the portfolio to changes in interest rates. Duration is a more precise measure of interest rate risk than maturity because it takes into account all of the bond's cash flows. For example, when rates rise by one half of 1% (or 50 basis points), the value of a pool with a duration of four years will decrease by about 2%.

Credit and liquidity risks

Credit and liquidity risks are distinct, although often closely related. Credit risk refers to the possibility that an issuer may become unable or unwilling to meet its payment obligations on time or in full. Securities with higher credit risk trade on higher yields compared to lower credit risk securities, and the variations in such yield spreads are often described as spread risk. Liquidity risk refers to the possible price penalty incurred when buying or selling a particular security or asset for which there is a limited secondary market. Liquidity is also measured by how quickly a security can be sold. Standard & Poor's considers the effects of these risks, among others, when evaluating the overall price sensitivity of a fund. The relevant risk is the aggregate risk, measured after all diversification benefits are taken into account.

Management assessment

Fund manager assessment is an opportunity for Standard & Poor's to gain an in-depth understanding of different factors that could affect a fund's overall risk profile. Since fund managers can have a significant impact on the fund's future risk profile, Standard & Poor's meets with fund managers to discuss various portfolio risk related topics. At these meetings, Standard & Poor's looks at management sophistication and experience, the quality of research support, dedication to controlling risk within established guidelines, portfolio strategies, and the frequency and extent of changes to portfolio holdings, among other factors. Even after a fund is rated, Standard & Poor's meets with the fund managers at least annually.

Credibility and commitment to policies

Standard & Poor's judges each fund and its management on its own merits. There is no 'model' fund. Whether a fund has a retail or institutional shareholder base, or favors an aggressive investment approach over a conservative strategy is not critical. The important issue is how the fund is managed. Policies and strategies may differ from fund to fund, but the degree to which management has control over them should not. Standard & Poor's closely examines the daily operations of the fund, including organizational structure and depth, the degree of oversight and accountability, particularly in the portfolio and risk management areas. ■

Assessing Construction Risk

Construction risk is present in virtually all public finance transactions, but it typically introduces credit risk only in those transactions where debt service payment is contingent on project completion and/or acceptance. Standard & Poor's Ratings Services addresses construction risk directly in the rating, either through an evaluation of the construction process or, with credit support such as letters of credit during the construction period. The depth of the evaluation of the construction process will vary by project; earthquake analysis is unchanged. For example, the analysis performed on a school building will be less than that performed on an off-campus student housing project.

Standard & Poor's will adopt a continuum of risk approach to assessing construction risk. If there is strong public support for a project, and the projects are not complex, the construction analysis will focus on the following issues:

- Project essentiality;
- Experience with similar projects;
- Contractor's experience with the issuer/obligor;
- Project schedule and cost structure;
- Construction contingencies in the project budget;

- Duration of capitalized interest;
- Insurance coverage during construction, including whether coverage is sufficient to cover full redemption of bonds in the event of damage or destruction; and
- Full permitting and site approvals.

The level of construction risk the project entails will then be evaluated, and if determined to be minimal, a rating will be assigned, based on the obligor's creditworthiness. If the level of construction risks exceeds the normal threshold of most municipal projects, further analysis will be undertaken, which would reflect the criteria used within Standard & Poor's project finance group, and could include the use of an outside construction consultant.

Where no municipal entity agrees to pay debt service upon completion, and where the project must be completed in order for debt service to be paid, the project ratings will involve a full analysis of the risks of construction. These risks are three-fold:

- Timely completion;
- Project performance—whether the project will be built as anticipated or perform as expected; and
- Project cost.

Each layer of risk can affect whether the project will produce the cash flow necessary to pay debt service, generate sufficient demand as built, and whether unanticipated costs will result in inability to pay debt service. These projects are likely to include many federal leases, public-private partnerships, affordable multifamily housing and nonrecourse projects.

Standard & Poor's has used this approach for construction risk analysis for many years and has developed levels of construction risk based on comparable projects. If construction risk is determined to be appropriately low, a rating based on the obligor's creditworthiness may, all other things being equal, be assigned. If the level of construction risk is excessive, further analysis will be undertaken along the lines of the complex project criteria and could include the use of a outside construction consultant.

Even where a complex project analysis may not ultimately be appropriate for certain projects, Standard & Poor's may retain a construction consultant to advise on particular issues. The scope of the consultancy encompasses the following principle areas of inquiry:

- Review of plans and construction documents;
- Evaluation of the likelihood that the contractor will perform based on historical performance on similar projects;
- Hard cost budget and construction schedule evaluation—whether costs allocated for the project seem reasonable, whether there is adequate contingency, and whether the construction time frame is aggressive;
- Project location, special situations (wetlands, weather);
- Construction schedule;
- Whether construction is set in a union/nonunion environment;
- Names of borrower, architect, general contractor, or construction manager; and
- Review of drawings or plans for the proposed building.

A complex project's rating rests, in part, on the dependability of its design, construction, and operation. Should the project fail to achieve timely completion or perform as designed, it will not be able to make its scheduled payments. Standard & Poor's criteria may require the report of an "independent engineer" as an aid to identifying and summarizing construction and other project risks, and certifying that notwithstanding those risks, the project will nevertheless be able to operate in the manner designed, and to generate sufficient cash flow to enable it to make its scheduled debt service payments.

For complex projects, construction risk may be divided into its preconstruction and postconstruction facets. The former consists of:

- Engineering and design;
- Site plans and permits;
- Construction; and
- Testing and commissioning.

Though a project's design may attempt to limit construction difficulties, its construction program may nevertheless adversely affect the project. Limited contractor and vendor experience with the technology can put a project at risk, as can a weak security and warranty package. A construction management plan that fails to adequately control construction fund disbursement can result in cash leakage. Designs requiring complicated sequencing of construction activities may also present delay and cost risks. Construction relying on commercially proven technology and experienced contractors can mitigate much of the construction risk attributed to design.

Construction And Vendor Experience

For complex projects, Standard & Poor's reviews the performance record of equipment vendors and general contractors in building comparable predecessor projects. Higher-rated projects tend to feature vendors and contractors having broad experience building comparable projects and demonstrated records of meeting schedules. In addition, the better contractors will have demonstrated a pattern of meeting budgets and avoiding liquidated damage payments or other penalties. If project sponsors

elect to use a fixed-price, turnkey construction contract, Standard & Poor's verifies that the owners, developers and others have had favorable experience with the proposed contractor.

While Standard & Poor's does not identify specific vendors or contractors as appropriate for construction, it does examine the experience of contractors and vendors in building comparable facilities, as well as overall performance records. Standard & Poor's also considers the ongoing and future business interests of the contractor and key vendors. Experience has shown that business interests of contractors, vendors, and sponsors contribute as much influence as legal obligations in ensuring on time and under budget construction projects.

Construction Funds Management

Managing construction fund disbursements frequently provides a mechanism to maintain leverage over the sponsor developer and contractors and thus helps to minimize construction risk in higher-rated projects. Active management by the lender or lenders or their representatives achieves this objective. Loan documents typically give lenders the right to closely monitor construction progress and release funds only for work that the lender's engineering and construction expert has approved as being complete. On projects seeking to raise capital from a broader investor base, either through private placement or public debt issues, management of construction funds becomes more difficult because individual investors have no real capacity to oversee construction draws. For such projects, however, third-party trustees, acting in a fiduciary capacity, will generally manage disbursement of funds to protect debt holders' interest in the project.

In general, the higher rated transactions will provide the following controls over construction funds:

- Retention of all debt-financed funds in a segregated account by a trustee experienced in management of project construction, preferably an experienced bank or other lender for these projects;
- Control over all disbursements from this account to the project with disbursements made only for work certified as complete by an independent project engineer and/or mortgage servicer retained by the construction trustee solely for approving disbursements and monitoring the completion of construction of the project on time and on budget; and
- Right to suspend or halt disbursements when the trustee, acting in consultation with the independent project engineer, concludes that construction progress is materially at risk because of outside events, such as reversals or revocations of necessary regulatory approvals, or changes in law or cost outside the levels anticipated by the budget and schedule or failure to perform by contractors; and the authority to approve all change orders;
- And the authority to approve all change orders.

In order for the trustee to fund construction draws out of the construction fund, the following should be in place:

- An application and certification for payment (AIA Document G702) must should been completed and received by trustee certifying that construction is in accordance with the plans for the project.
- The loan must be in balance—an amount necessary to complete project should be on hand or available-remaining uses must equal sources.
- There should be no events of default under indenture, mortgage, ground lease or any other operating agreements.
- The owner and trustee should receive lien waivers from the contractor and major subcontractors prior to funding draws.
- The trustee should receive title insurance bring-downs (i.e. there should be no mechanic's liens on the project) prior to funding draws.
- Any credit enhancements relied upon in the initial rating should continue to be in place (e.g. LOC or rated completion guarantee).
- The construction consultant and/or mortgage servicer, if used, should approve the construction draws.
- The trustee should withhold an applicable amount of retainage (between 5-10% as decided in beginning of transaction).
- The trustee should receive certificate of occupancy and certification as to completion of project and satisfaction of punch list items prior to final release of funds from project fund.

Construction Schedule And Budget

Standard & Poor's assessment of construction risk includes a determination of whether the contractor can achieve the proposed construction schedule and budget without costly delays or quality problems. Standard & Poor's expects that the independent engineer will have reviewed detailed budgets and construction schedules and will have opined as to their feasibility. Reports without defensible conclusions about schedules and budgets can raise concerns. Higher-rated projects will have contractors and equipment vendors who have consistently provided services on time. Budgets should include contingencies to cover unexpected construction events (not merely uncosted items) during construction.

In addition, Standard & Poor's assesses the extent to which engineering and design are complete, with equipment procured when construction begins; investment-grade projects tend to have completed these tasks earlier than noninvestment-grade projects.

Standard & Poor's analyzes the independent engineer's conclusions on the adequacy of contingencies for schedule and budget, and related assumptions. Standard & Poor's also evaluates performance requirements and incentives for project contractors along with the financial and technical capacity of the contractors. Projects that require construction monitoring by an expert third party, such as an independent engineer, enhance construction surveillance with this oversight mechanism.

Cash Flow Considerations And Capitalized Interest Calculations

For financings that are cash-flow dependent, such as mortgage revenue bonds for multifamily finance, sufficient funds must be available to pay debt service during the construction period. Project capitalization should demonstrate sufficient amounts of capitalized interest to ensure bondholders will be paid in full and on time during construction. These considerations vary according to bond structure and use of credit enhancements, among other things. In situations where bond proceeds are used to fund construction and there is no construction period credit enhancement, Standard & Poor's will analyze the following:

- Earnings during the construction period. Like other transactions, in which funds are held in escrow during development, Standard & Poor's will stress the effect of investment earnings on coverage levels. Standard & Poor's analysis involves a comparison of construction fund investment earnings and the mortgage note interest rate. If the construction fund investment rate is lower than the mortgage interest rate, then cash flows should assume that all monies should remain in the construction fund account until the latest date they can be drawn under the bond documents (late draw). If the mortgage rate is lower than the construction fund rate, then it should be assumed that all funds are drawn day one and the mortgagor is making mortgage payments. On a case-by-case basis, income may be shown during the construction period,
- Length of construction period. Standard & Poor's will assume a delay in reaching construction completion, as well as lease-up and stabilization. Delays will vary depending on Standard & Poor's analysis of construction risk, including the opinion of an independent construction consultant in some instances. For low risk projects, a six-month delay might be sufficient, whereas for moderate risk projects, one year might be in order. High-risk construction may call for delays of 18 months or longer.
- Rental income. Standard & Poor's will examine case-by-case whether rental income exists during construction. An example of where rental income could be shown would be in low risk construction situations, such as military housing transactions, where units are on line at the outset of the transaction and demand is extremely deep. In any event, Standard & Poor's will assume maximum occupancy of 95%. Occupancy assumptions could be lower if the market analysis cannot substantiate 95%.
- Trending of income and expenses. If rental income is present in a particular transaction, no trending of income and expenses will be taken into account, except on a case-by-case basis.
- Debt service coverage. Coverage of debt should always be at least 1x for investment grade ratings. Standard & Poor's will determine case by case what the coverage level should be depending on analysis of construction risk and the rating on the bonds.

Shortfalls in bond cash flows can be covered by equity contributions or other paid-in cash at closing, letters of credit (LOCs), available funds under an HFA parity program and other rated credit enhancements.

Covering Construction Risk With Credit Enhancements

When construction risk is moderate to high, credit enhancement during the construction and lease-up phase may be needed for investment grade ratings. This is often the practice in single-asset affordable housing transactions. Credit enhancements are typically in the form of a LOC from a bank rated as high as the bonds, or Freddie Mac, Fannie Mae, GNMA, FHA insurance or guarantees.

LOCs

The LOC should remain in place until the project achieves stabilization at full occupancy at a predetermined debt service coverage ratio for at least one year. Once the project achieves stabilization, the LOC may be released. The rating during the credit enhancement period will be limited by the rating of the credit enhancer. The LOC amount should cover bond principal amount and interest to a specified completion date. The trust indenture should have a mandatory draw on the LOC and a corresponding mandatory redemption of the bonds from LOC proceeds in the event that the project does not reach

completion and lease-up at specified debt service coverage by the specified completion date. Please see, "Public Finance Criteria: LOC-Backed Municipal Debt" for a full description of Standard & Poor's criteria relating to letters of credit.

Freddie Mac, Fannie Mae, GNMA guarantees/FHA insurance

Please see, "Public Finance Criteria: Ginnie Mae, Fannie Mae And Freddie Mac Multifamily Securities," and "Public Finance Criteria: FHA Insured Mortgages" for a full description of rating criteria. Construction risk is typically fully mitigated by the insurance and guarantees; however, transaction documents must accurately reflect the mechanics of the program, cash flow considerations and capitalized interest calculations must be incorporated into the analysis, and Standard & Poor's assumes a "worst case" receipt of guarantee and insurance proceeds.

Turnkey Contracts As Credit Enhancements

Sponsors often use "turnkey" ("soup-to-nuts") contracts on major projects as a means of shifting construction risk away from equity and lenders. In a turnkey contract, the builder promises to deliver the project complete on a certain day, and takes all responsibility for design, engineering, procurement, construction, and testing. All the project owner has to do is pay the contract costs, and "get the keys" to a fully functioning project at the end of the process. In appropriate circumstances, turnkey contracts can shift risk to the extent that they may be viewed as an indirect type of credit enhancement by providing for timely and full completion on pain of damage or penalty payments, on which the project might be able to rely for debt service. Nevertheless, prompt payment of liquidated damages is more a desideratum than a reality.

Turnkey or other construction contracts cannot eliminate all risk. Some risk generally remains, such as force majeure and change-of-law events, which by definition, cannot be controlled by the vendor and contractor. ■

Pension Fund Credit Enhancement And Related Guarantee Programs

Standard & Poor's Ratings Services, upon request, will assign ratings to issues secured by public pension fund credit enhancement programs.

Even though some enhancement programs are relatively short-term in nature, or signify a fraction of a pension fund's accumulated assets, Standard & Poor's analytical approach for public pension fund credit enhancement program issue ratings focuses on the long-term credit quality of the fund's sponsor, along with the pension fund's independence, management, and operating performance. In other words, a pension fund's credit enhancement program is not viewed in a vacuum: extraordinary asset and cash flow coverage of credit enhancement program obligations does not automatically translate into superior credit quality. Nonetheless, credit enhancement programs remain an important credit consideration and will be analyzed in the context of how the program fits within the pension fund's overall management and operating profile.

Pension Fund Guarantees

Credit enhancement programs and related guarantees pertain to the extension of a pension fund's creditworthiness to debt instruments of other entities through letters of credit (LOCs), guarantee agreements, liquidity agreements for commercial paper (CP) or other short-term instruments, or liquidity agreements to honor optional "put" provisions on variable-rate debt.

In one respect, the extension of pension fund guarantees is similar to the investment risk undertaken by a pension fund in its normal course of business, in that pension fund assets are placed at a level of risk in return for current or future compensation for undertaking the risk of lending or promising to advance assets. However, it is important to note that the extension of pension guarantees leverages existing assets, in addition to the normal investment risk associated with the direct ownership of financial securities.

In the extreme case of a securities market price decline, losses on owned investments by a pension fund could be aggravated by requirements to honor guarantees or other financial commitments extended by the pension fund, increasing the potential for losses of fund assets and reducing the ability of the pension fund to honor its standing obligations for benefit payments to retirees.

Rating Analysis

In order to rate a credit enhancement program issue, the pension fund itself is first assigned a public issuer credit rating. For credit enhancement programs, areas of analysis include a review of:

- Legal authorization for the extension of pension guarantees (statutory, constitutional, or via permitted investment guidelines);
- Legal priority of pension fund guarantees relative to the fund's obligation to pay pension benefits;
- Enforceability of pension fund guarantees;
- Legally permissible guarantees or extension of fund credit, including direct debt guarantees, CP, LOCs, liquidity agreements, and guaranteed investment contracts;
- Maximum permitted program exposure amount relative to the pension fund's: percentage of total invested assets; percentage of normal annual net cash flow (income and contributions minus required annual pension benefit payments); and percentage of annual pension benefit payments;
- Types of guarantees that may be undertaken or incurred by a pension fund, by generic industry credit risk (e.g., municipal debt guarantees, corporate debt guarantees, small business loans, currency risk or interest-rate risk, etc.);
- Risk concentration limits or guidelines, as they relate to industry or single-issuer guarantee risk;
- Maturity or liquidity risk to the pension fund, depending on the nature and proposed types of instruments to be guaranteed;
- The legally available highly liquid asset portfolio and its composition in terms of credit quality, volatility, and weighted average maturity; and
- The management, monitoring, and oversight procedures for the legally available highly liquid assets.

Asset liquidation plan

For pension fund credit enhancement programs that require immediate access to liquid assets, a detailed asset liquidation plan will be reviewed (see Standard & Poor's self liquidity criteria). The ability of a fund's asset management team to liquidate assets on a same day basis (if necessary) is a key factor in the evaluation of a pension fund credit enhancement program.

Very specific written liquidation procedures are required and should detail:

- Persons responsible (including alternates) for executing the asset liquidation;
- The sequence of steps that must be undertaken by all parties to effect liquidation; and
- The timing of notifications to the appropriate parties to ensure that sufficient funds are available to pay program obligations on a same-day basis, if necessary.

Assessing Creditworthiness

The strengths associated with any specific extension of a public pension fund's creditworthiness will be a function of the specific terms included in the guarantee or LOC agreement. As with any debt instrument that may contain credit enhancement from an outside party, the credit rating value of a guarantee may be weakened or rendered unratable if there are conditions or provisions that would allow the guarantee to be terminated, unenforceable, or dishonored.

An analysis of the pension fund's financial risk management and operating principles will be undertaken to check that execution of the credit enhancement program will ensure policy compliance. In general, laws, statutes, or formal policies limiting the extension of pension fund creditworthiness reduce the potential risk to pension assets and required sponsor fund contributions to maintain the solvency of the pension fund for the short-and long-term. The absence of formal plans to manage, monitor, and limit or control the extension of pension fund credit will impact the assessment of the pension fund.

Finally, in addition to limits on the extension of pension fund credit, the risks associated with the projects or debts to be guaranteed will be analyzed for their impact on the safety of pension fund assets. In situations where the parameters for the extension of pension fund credit are very broad, concerns over potential increased risk could translate into lower pension fund ratings, and, under certain circumstances, into added credit stress for the sponsor governments. ■

Public Pension Funds

Standard & Poor's Ratings Services has enhanced its public pension fund rating criteria to incorporate an evaluation of a public pension fund's issuer credit rating, including reviewing the underlying characteristics that comprise the fund's sponsor credit quality, independence, management controls, and operating and financial performance. An additional, though separate, credit consideration includes the pension fund's credit enhancement or related guarantee program. (See Public Finance Criteria: Pension Fund Credit Enhancement And Related Guarantee Programs)

Background

Public pension funds are vehicles for accumulating financial assets to advance-fund employee retirement defined benefits that have been earned by, and promised to public employees as part of their compensation. Employee retirement defined benefit obligations represent the long-term liabilities promised by the pension fund's sponsor. Generally, both the sponsor and the employee, through regular contributions, share pension benefit funding. Typical employee defined pension benefits include monthly stipends based on a formula, including years of service and final salary.

Public pension fund asset management mainly focuses on increasing accumulated assets through investment income and appreciation. However, pension funds may also engage in alternative means of revenue generation, such as credit enhancement programs, which generate fee income through the extension of the fund's guarantee of debt instruments of other entities. Standard & Poor's views public pension funds as entities that are intrinsically linked to their respective government sponsor in terms of contribution support and benefit obligation modifications. Standard & Poor's criteria does not de-link pension fund rating factors from those of its sponsor.

Rating Methodology

Specifically, under Standard & Poor's enhanced public pension fund criteria, the creditworthiness of a public pension fund is a function of performance in the following basic analytical areas:

- Sponsor credit quality;
- Pension fund independence;
- Pension fund management; and
- Pension fund operating and financial performance.

Sponsor Credit Quality

Although public pension funds are generally legally separate financial entities, their strength and solvency are a function of the willingness and ability of sponsor governments to ensure that the defined benefits are provided through the timely payment of required contributions, and the maintenance of an adequate funding level. Moreover, public pension fund employee benefit liabilities are tied to, and are negotiated and determined by the government sponsor. One of the items evaluated in the context of a pension fund rating is whether a government views pension benefits as a means to achieve labor settlement, since those costs may have no substantial immediate effect on the sponsor's annual budgets or taxes.

Standard & Poor's views well-funded public pension funds as having the ability to withstand a short-to mid-term disruption in sponsor contributions, or enhancements of employee benefits due to the long-term nature of employee retirement benefit obligation accruals and disbursements, as well as the large share of income derived by returns on existing investments. Yet, even though a well-funded pension fund can likely continue to make benefit payments in the short-to mid-term, a prolonged reduction or absence of sponsor contribution payments and/or enhanced benefit liabilities will affect the fund's long-term operating and financial performance.

Due to these fundamental relationships between sponsor and fund, including the ability of government sponsors to recover from periods of financial weakness, Standard & Poor's analytical approach to public pension fund ratings limits the upward rating spread between the sponsor and pension fund to one full rating category (three notches). In other words, if a government sponsor's general credit rating were 'A', then the highest potential rating that the corresponding pension fund could earn would be 'AA'. Conversely, it is possible that a pension fund may be viewed as less creditworthy than its sponsor if Standard & Poor's considers the fund's remaining basic analytical areas to be deficient.

Analytical evaluation

Standard & Poor's analytical approach to public pension fund ratings begins with determining the government sponsor's general creditworthiness, which includes examining the sponsor's pension contribution history. In evaluating the sponsor's creditworthiness, that is, its ability to continue to make pension contributions in the context of its other financial obligations and commitments, consideration will be given to the strength and priority of required contributions relative to other financial obligations of the government sponsor. Standard & Poor's will determine if the sponsor's pension contributions are discretionary or constitutionally protected, or, if there is a legal priority for pension contributions relative to other financial commitments. Standard & Poor's will also examine the sponsor's funding objectives, along with the sponsor's willingness and ability to cure funding deficits. Moreover, Standard & Poor's will calculate how significant the pension funding requirements and liabilities are relative to the sponsor's operating budget.

Public pension funds are typically single-employer defined benefit plans, or multiple-employer (agent or cost-sharing) defined benefit plans sponsored by state or local governments. In multiple-employer plans, the pension fund receives contributions from a number of governments and their employees. A government that is the sole sponsor for the public pension fund may provide several separate plans for different classes or types of employees. Funding levels and requirements may vary, so it would not be accurate to assume one plan's creditworthiness could serve as a proxy for another plan funded by the same sponsor.

Multiple-employer pension plans may or may not include state funding participation. To assess the creditworthiness of the government sponsor where there is no state participation, a portfolio analysis of the credit characteristics of the local government participants is necessary. Where a multiple-employer plan includes both state and local government employees and funding requirements, such as a cost-sharing plan, the state's credit rating will be significantly weighted—under a multiple-employer cost-sharing program, the state is typically the largest employer and contributor, therefore making the plan substantially dependent on the state's creditworthiness for its ongoing solvency.

For multiple-employer teachers' retirement systems, with or without state-required funding of contributions, the state's general credit rating may still be viewed as a proxy for the underlying creditworthiness of the governmental sponsors, since states traditionally provide substantial funding resources to local school districts for educational expenses, and teachers' salaries and other compensation are usually the largest component of school district spending.

The ability of the public pension fund to exceed the sponsor's general credit rating by up to one full rating category will hinge on the strength of the fund's three remaining basic analytical areas.

Pension Fund Independence

Standard & Poor's considers independence as being an essential factor in deciding whether the pension fund's credit rating can exceed that of its sponsor. The assessment of independence is largely qualitative in nature and includes a thorough documentation analysis and a meeting with fund officials. Issues to consider include:

- Are pension board directors appointed independently, with staggered terms, or do they serve at the pleasure of the government sponsor?
- Are operating and/or investment decisions vested solely in the management of the pension fund, or are they influenced or determined by the government sponsor's representatives?
- Are contribution rates determined independently, based on actuarial needs, or are they merely a function of the sponsor's annual budget process, subject to the sponsor's financial condition on a year-to-year basis?
- Can pension assets be reclaimed or diverted by, and to, the government sponsor for other uses?
- How can actuarial assumptions used to determine pension-funding levels be influenced or revised?

Despite the inherent connection between pension fund and sponsor, the degree to which a pension fund can demonstrate that its managerial structure and operations are independent of sponsor control and influence is a credit factor. Although the sponsor typically sets the retirement benefits promised to employees, many pension funds are designed to retain significant autonomy in direct management and operating areas.

In general, credit strength will be accorded to a pension fund where it can be verified that the fund can operate independently of its sponsor in the following areas:

- Legal authority: the basis for the establishment, organization, and operation of the pension fund;
- Management: the basis for election or appointment of those charged with responsibility for pension fund administration;
- Policy making authority: investment guidelines, asset allocation, and risk management, and, overall control of asset portfolio;

- Operating and financial performance: the basis for establishing funding objectives, performance goals, and financial targets; and
- Determination of funding requirements and actuarial assumptions.

Pension Fund Management

A key factor of Standard & Poor's public pension fund rating process is assessing the execution of the fund's management in the context of the fund's independence, and operating and financial performance. An assessment of fund management is derived from understanding managerial techniques; funding objectives, investment objectives, and risk aversion strategies, document analysis comprises the balance. Although management has little control over the ability of the sponsor to make contributions or employee retirement benefit modifications, managing its operations and finances in a prudent manner are factors over which the fund can exert significant influence. It is important to note that the assessments of pension fund management and independence go hand in hand.

Standard & Poor's public pension fund management assessment guidelines borrow heavily from its existing life insurance and fund rating criteria, and seek to determine whether a pension fund is maintaining transparent and thoroughly planned managerial and risk acceptance policies, while simultaneously generating sufficient returns to fund its current and future benefit obligations.

Areas of focus for a review of management includes the pension fund's:

- Organization;
- Operational effectiveness; and
- Financial risk management.

Organization

Standard & Poor's considers strong organization as being essential to effectively managing a public pension fund, and the fund's management experience must support the operational strategy to produce the desired results of maximizing asset growth and income, within the specified risk tolerance. When analyzing organization, Standard & Poor's will, for instance, determine whether the fund maintains transparent operating principles and controls, as well, as a sound organizational structure. Issues to consider include:

- How old is the fund and how is the fund organized?
- What are management's goals and how are strategies developed?
- How large is the pension fund in terms of staff and function, and what is the role of the board of directors and government sponsor(s)?
- How involved is the board of directors in the management of the pension fund, including a discussion of committees such as audit and finances committees;
- Are written policies and procedures communicated to fund staff and signed by staff annually (i.e. a Code of Ethics)?
- Do investment managers possess a proven track record, what is that track record, and how closely are they monitored?
- What type of internal audit controls does the fund adhere to?

Operational effectiveness

Operational effectiveness involves assessing a pension fund's ability to execute chosen funding and operating objectives and follow through with actual performance. Standard & Poor's also evaluates management's expertise and understanding in terms of operating the fund and managing investments. An assessment of the adequacy of audit and control systems is essential. Standard & Poor's must evaluate whether the strategies and objectives management has chosen are consistent with the fund's capabilities and principles. Furthermore, public pension funds often employ private financial firms to assist with investments and operations, and a review of the policies and strategies governing these relationships is imperative. Issues to consider include:

- What are the fund's specific operating and financial goals or targets, and how has the fund performed compared with these goals?
- Does management maintain any form of operating and/or strategic forecasts that are tied to future retiree benefit payments or other anticipated liabilities?
- Does management maintain any form of contingency planning?

Financial risk management

A major component of the review of a pension fund's financial risk management is the investment decision-making process, as asset quality and investment performance are integral to a fund's operations and solvency. Numerous investment decisions are made frequently for invested funds, and Standard & Poor's examines how these decisions are made and who is responsible for executing them. Evaluating financial risk acceptance allows Standard & Poor's to understand management's views on financial goals, asset structure, and board oversight.

Standard & Poor's analysis begins with a comprehensive review of the pension fund's permitted investment guidelines, asset allocation strategy, and risk management policies. The ultimate responsibility

for any pension fund typically lies with its board of directors or trustees, and board members are usually elected and/or appointed to oversee the fund's investments and management. Boards entrust staff and investment managers with handling the fund's day-to-day affairs, and policies are typically established that delineate management's tolerance for risk. Boards must establish effective procedures for reviewing and enforcing these policies.

Standard & Poor's expects public pension funds to maintain detailed policies documenting the amount, type, and quality of information used in making investment, asset allocation, and risk management decisions. This includes the size, breadth of understanding, and capabilities of the credit and risk research staff, as well as access to current economic data and analysis. Once investment and risk management strategies are understood, Standard & Poor's reviews the pension fund's allocation of assets among investments such as fixed income, domestic and international equities, real estate, and other invested assets. The assets are evaluated for credit quality and diversification. Asset concentrations by type and maturity, credit quality, industry, geographic location, and within single issuers are evaluated.

The pension fund's asset allocation is also examined to determine liquidity in relation to its liabilities. Standard & Poor's reviews the portfolio's liquidity because the fund may need to liquidate assets quickly to pay liabilities such as capital calls, guarantees, or credit enhancement programs. Issues to consider include:

- Is there a defined risk management process in place to ensure that assets are managed within their objectives and established risk parameters?
- Does the fund have predetermined limits for acceptable levels of risk, and are these guidelines detailed or general?
- What policies are in place for investments or trading by investment managers and how are they monitored?

Pension Fund Operating And Financial Considerations

Obligations and expenditures

Pension fund liabilities are derived from the retiree benefits incurred as a result of sponsor government

Public Pension Fund Evaluation: Fund Management

Strong	Adequate	Weak
Management maintains a clear and comprehensive set of operating and funding principles, objectives, and strategies.	Management generally follows a basic set of principles, objectives, and strategies.	Management does not maintain or follow a basic set of principles, objectives, and strategies.
Board is independent, highly qualified, and willing to exercise proactive judgment.	Board is independent.	Board is not independent and/or is not involved.
Organizational structure fits principles, objectives, and strategies.	Organizational structure does not fully foster principles, objectives, and strategies.	Organizational structure impedes implementation of principles, objectives, and strategies.
Audit and control systems are extensive and transparent.	Audit and control systems are average.	Audit and control systems are weak and/or are ignored.
Management has considerable expertise, depth, and breadth, and is engaged in, and has demonstrated an ability to exercise strong control over its operations.	Management lacks expertise, depth, and breadth, but maintains good control over its operations.	Management lacks ability to understand and control its operations.
Strategies and objectives chosen are consistent with the fund's capabilities and principles.	Strategies and objectives include some contradictions with the fund's capabilities and principles. Achievement of some objectives appears unlikely.	Strategies and objectives include many contradictions with the fund's capabilities and principles, and many goals appear unattainable.
Maintains very conservative operating and financial targets.	Has no commitment to maintaining conservative operating and financial targets.	Disregards any reasonable standards for operating and financial targets.
A set of comprehensive investment, asset allocation, and risk acceptance standards in place. policies and standards are formally in place.	A set of comprehensive investment, asset allocation, and risk acceptance policies and standards are formally in place.	Has no defined set of investment, asset allocation, and risk acceptance policies and in place.
Investment, asset allocation, and risk acceptance policies are often, but not always, adhered to.	Investment, asset allocation, and risk acceptance policies are not adhered to.	Investment, asset allocation, and risk acceptance policies are not adhered to.
Fund consistently performs well against objectives/strategies/targets.	Fund usually performs well against objectives/strategies/targets.	Fund often misses objectives/strategies/targets.

compensation agreements with employees and plan structure obligations. Among these are:

- Monthly stipends based on plan formula;
- Disability entitlements; and
- Death benefits.

An important focus of this area will be on the process of how benefits are revised and whether there are built-in factors that could cause future pension benefits to increase substantially. Examples are pension benefit increases or accelerations that could increase or accelerate payments of pension benefits, such as early retirement legislation, or changes in the method of calculation of eligible compensation as the basis for pension payments. In addition, Standard & Poor's will need to assess the history of retiree benefit enhancements or other changes, and how any modifications were compensated for in terms of funding.

Other areas to be reviewed are the vesting rights of employees, as well as obligations for termination payments by the plan when an employee withdraws from the plan or government employment.

Pension Fund Unfunded Actuarial Accrued Liability And Funded Ratio

A pension fund's unfunded actuarial accrued liability (UAAL) and funded ratio are tied to the fund's actuarial value of assets (AVA) and actuarial accrued liability (AAL). The UAAL is established by subtracting the fund's AVA from the fund's AAL. When the difference is a positive number, it means that the AVA is not sufficient to cover the AAL. Conversely, when the difference is a negative number, it means that the AVA exceeds the AAL. The funded ratio is derived by dividing the fund's AVA by the AAL, and is important in quantifying the adequacy of the pension fund's accumulated assets.

Assessing Pension Fund Operating And Financial Performance

In addition to the UAAL and funded ratio, Standard & Poor's employs a variety of quantifiable metrics in order to gauge a pension fund's operating and financial performance. These metrics include:

- Actuarial discount rate assumptions.
- Return on investments, return on assets (change in net assets divided by total assets), and return on net assets (change in net assets divided by net assets).
- Total margin (change in net assets divided by total revenue).
- Pension benefit expense service delivery efficiency
- Annual pension expense (employer contributions) as a percentage of the sponsor's budget.
- UAAL as a percentage of the sponsor's budget.
- UAAL per capita (for the sponsor's population).
- UAAL as a percentage of the sponsor's per capita income.
- Historical pension fund balance sheet and liquidity trends.
- Historical pension fund income statement trends.

Furthermore, Standard & Poor's will closely examine the pension fund's actuarial assumptions, including funding method, asset valuation smoothing assumptions, mortality, and inflation. Analytical questions include:

- Is participation optional, allowing for competing plans and possible withdrawal of participants' and sponsors' contributions and shares of assets into other pension plans?
- Under what conditions can employee termination withdrawals occur and what has been the historical experience?
- If non-vested, do employees have rights to their contributions alone, or are they also entitled to benefits with respect of employer contributions made on their behalf?
- If termination payments are made to the employees, do sponsor contributions remain in the plan or revert to the sponsor?
- Has there been a change in actuaries and/or have any significant actuarial assumptions been altered?

Operating and financial performance measurements

Standard & Poor's employs trend analysis to assess public pension fund operating and financial performance. Depending on the metric, the trend analysis timeframe can range from three to ten years, and the analysis will determine the underlying factors behind positive or negative changes. Standard & Poor's will conduct its trend analysis in the context of the pension fund's various management factors, which include funding objectives and financial risk acceptance.

Standard & Poor's begins its operating and financial performance trend assessment by analyzing the pension fund's funding ratios. Specifically, Standard & Poor's will look at the pension fund's unfunded actuarial accrued liability (UAAL) and the funded ratio.

Overall, the higher the funded ratio, the more likely that accumulated assets will be able to support annual benefit obligations. Generally, Standard & Poor's will favorably view a pension fund with a funded ratio trend that is stable or increasing. Although funded ratios that are 100% or higher are viewed most favorably, Standard & Poor's understands that keeping a pension system at or near full funding is a very difficult balancing act and may not be desirable.

For example, very strong funding levels can result in greater pressure to increase benefit levels. Further, in actuarially funded pension systems, full funding results in downward pressure on the contribution rate and, in some cases, outright contribution holidays. Benefit enhancements and/or contribution holidays have the potential to pressure the

pension fund's operations and funding status in the event of an adverse investment environment. Standard & Poor's will consider the fund to be of weaker quality when there is consistently below average funded ratios or where the pension system is closer to pay-as-you-go status (no accumulated assets, with benefits funded as an annual expense).

Standard & Poor's analyzes the pension fund's current and historical investment returns compared with benchmark return targets that have been imputed into actuarial assumptions. Accordingly, a thorough evaluation of the assumed discount rate, including the discount rate's level of conservativeness and actual rate of return, will be conducted. Investment losses can result in the substantial weakening of the fund's asset portfolio, potentially resulting in decreased liquidity, reduced flexibility in terms of covering pension payments, and increased dependence on the government sponsor for higher contributions. In analyzing investment income and performance, focus will be placed on how much investment income derives from actual cash payments (such as interest, dividends, and rental income) as opposed to investment income generated from capital appreciation.

Standard & Poor's evaluates various performance metrics in order to assess operating efficiency and asset maximization. Standard & Poor's employs performance ratios such as return on assets, return on net assets, and total margin. These metrics are useful in providing insight as to how effectively the pension fund is able to augment its operating income and leverage its asset base. Standard & Poor's also uses a service delivery efficiency ratio that looks at what percentage of total annual pension fund expenses are specifically for retirement benefits. Consistently maintaining a very high service delivery ratio (one that approaches 100%) over time is a credit strength. Conversely, in cases where administrative or other expenses consistently comprise a larger share of operating expenses, or where there is tremendous fluctuation in service delivery requirements, suggest credit weakness.

Standard & Poor's conducts a historical analysis of the makeup of the fund's balance sheet and income statement. Specifically, Standard & Poor's will seek to understand and annually compare the composition and movement of the fund's assets and liabilities in relation to their respective total bases.

Finally, Standard & Poor's assesses the pension fund in relation to the government sponsor in order to determine how material the pension fund's operations and liabilities are to the sponsor. Standard & Poor's will look at the sponsor's annual pension contribution relative to its own budget, which will reveal the level of financial resources needed to regularly support the pension fund, and is analogous to a debt service carrying charge calculation regularly conducted for general debt credit analysis. A calculation of the UAAL relative to the sponsor's operating budget will be an important indicator as to the significance and rate of change of the unfunded liability. Similarly, the unfunded pension liability will be analyzed in terms of UAAL per capita (using the government sponsor's population) and UAAL as a share of per capita income (using the per capita income of the government sponsor's population). Although pension fund liabilities are not generally considered to be "hard" debt, they are considered to be debt-like in nature, and it is useful to make pension fund burden comparisons that are similar in nature to general credit debt burden ratios. ■

Pension Fund Rating Documentation

- The statute or constitutional provisions that establish the organization and operation of the pension fund.
- Five years of audited financial reports for the pension fund sponsor(s).
- Five years of audited financial reports for the pension fund.
- Current pension fund actuarial report with detailed actuarial assumptions.
- Statutory or constitutional requirements for annual sponsor funding contributions, and, the terms for employee vesting of plan benefits and employee contributions and refunds.
- The pension fund's operating and funding principles, objectives, and strategies.
- Description of current pension fund board and management.
- Statutory and/or formal regulations or guidelines that control allowable investments, asset allocation, and risk management.
- Ten-year history of pension fund accumulated assets, as well as pension fund UAAL, funded ratios, sponsor contributions, employee contributions, and investment performance.
- Five-year trend of investment allocation.
- Description of pension plan benefits and changes (if any) over the past five years, plus statutes governing benefit changes.
- Authorizing legislation permitting the extension of guarantees by the pension fund, including any limit on the types or amounts of permissible guarantees.
- Specific terms and documentation of the credit enhancement program (or related guarantee) and capital call requirements, if any.
- Description of the priority of debt guarantees vis-à-vis pension benefit obligations.
- Legal opinions on validity and enforceability of pension fund guarantees.
- List of current obligations guaranteed by pension fund and a description of proposed and/or future debt obligations that may be considered for future guarantees.
- Current and historical, legally available liquid asset balances that are dedicated to the existing or proposed credit enhancement program, as well as monitoring procedures.
- Detailed credit enhancement program asset liquidation plan.
- Monthly cash flow statements.