

Bond Insurance Criteria: Industry Overview And Analytical Focus

(Editor's note: The following replaces the criteria published in the 2007 Public Finance Criteria Book)

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

Primary Credit Analysts:

Dick P Smith
New York
(1) 212-438-2095
dick_smith@
standardandpoors.com

Secondary Credit Analysts:

David Veno
New York
(1) 212-438-2108
david_veno@
standardandpoors.com

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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 or other contracted amounts in a timely fashion if required 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 and other contracted amounts. 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. 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 typically is not 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 generally 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 preferred ownership profile of a newer, less-established insurer would consist of large institutional investors of high credit quality with a firm commitment to the industry. The preferred capital structure for a holding company is 100% equity. 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 generally should not contain more than 15% 'BB' rated issues, and 'A' rated insurers can have 'BB' rated issues comprising 40%-50% of the municipal segment and up to 25% of the structured segment of the portfolio. Standard & Poor's assigns a capital charge to each transaction wrapped by an insurer and 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 contracts 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 rating; 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.

Table 1

Reinsurance Credit For Business Ceded To A Monoline Reinsurer				
	<i>—Monoline reinsurer rating—</i>			
<i>(%)</i>	<i>AAA</i>	<i>AA</i>	<i>A</i>	<i>BBB</i>
<i>Ceding Company Rating</i>				
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				
	<i>—Multiline reinsurer rating—</i>			
<i>(%)</i>	<i>AAA</i>	<i>AA</i>	<i>A</i>	<i>BBB</i>
<i>Ceding Company Rating</i>				
AAA	95	65	45	N/A
AA	95	70	65	45
A	95	75	70	65

N/A—Not applicable.

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 in a timely fashion. 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. In most cases, 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 most often 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 should 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-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 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. 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 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 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 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 more than 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 as contingent preferred stock trusts.

Bond Insurance Capital Adequacy Model							
	—Growth Years—			—Depression Years—			
	1	2	3	4	5	6	7
New Business Activity	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.						
Premiums Written	Plan	Greater of plan or growth assumptions		No new business written; collect installment premiums on existing business			
Net Income	Net Income = Premiums earned - operating expenses - losses+investment income+gains/(losses) on asset sales - taxes						
Premiums Earned	Premium earnings pattern based on scheduled maturity of issues; no refundings or early calls assumed beyond year 1						
Operating Expenses	Plan	Growth consistent with premium growth		Decline to 93% of year 3 level	Decline to 89% of year 3 level	Decline to 70% of year 3 level	Decline to 48% of year 3 level
Losses (Net of Reinsurance and Soft Capital)	Discrete losses		Discrete losses plus debt service reserve losses	Discrete losses plus debt service reserve losses plus assumed defaults	Discrete losses plus assumed defaults		
	Reinsurance credit determined by ratings of reinsurance provider. Soft capital credit determined by rating of provider or structure						
Investment Income	Existing investment yields based on embedded rates; new investment yields based on assumed rates			Investment income discounted for assumed defaults in investment portfolio			
Asset Sales	None assumed			Sale prices reflect discount for reduced liquidity and high interest-rate environment		Sale prices reflect discount for reduced liquidity	
Policyholders' Surplus	Policyholders' surplus = prior year's ending surplus+net income+/- changes in contingency reserve+benefit of tax and loss bonds - dividends						
Contingency Reserve	Annual additions based on regulatory requirements; reserve may be released if loss ratios exceed a specific amount in any year						
Asset Carrying Value	No adjustment			Carrying value adjusted to reflect market value declines due to default			
Dividends to Holding Company	Dividends paid to cover dividends to holding company stockholders plus debt service requirements			Dividends paid to cover holding company debt service requirements			

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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 factor. 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 par written 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 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.

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

Single-Risk 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

Structured Finance Capital Charge Formula

The revised formula for structured finance capital charges is:

$$\frac{('AAA' - 'BBB-' \text{ Credit Gap})}{4} \times \left[1 - \left(\frac{\text{Investment-Grade Loss Coverage Provided}}{'AAA' - 'BBB-' \text{ Credit Gap}} \right)^{0.7} \right]$$

'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%

$$\frac{('AAA' - 'BBB-' \text{ Credit Gap})}{4} \times \left[1 - \left(\frac{\text{Investment-Grade Loss Coverage Provided}}{'AAA' - 'BBB-' \text{ Credit Gap}} \right)^{0.7} \right]$$

$$= (20.00 - 7.33)/4 \times (1 - [(11.00-7.33)/(20.00 - 7.33)]^{0.7})$$

$$= 12.67 / 4 \times [1 - (3.67/12.67)^{0.7}]$$

$$= 3.17 \times (1 - 0.42)$$

$$= 1.84\% \text{ of assets in collateral pool}$$

Example 2 — Typical Multiclass Transaction—Junior Class Insured

Assumptions:

'BBB-' loss coverage level	7.33%
'AAA' loss coverage level	20.00%
'A' class; loss coverage level	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.

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, appropriate reserves should be established. 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 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/A1+), 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.

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 suggest appropriate 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 guidelines for maximum single-risk exposure are 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—single-risk guidelines are 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 guidelines 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.

Table 5

Maximum Principal Exposure To A Single Issuer		
<i>Category (worst-case loss, % of par)</i>	<i>Unseasoned monoline % of surplus*</i>	<i>Seasoned monoline multiple of loss tolerance (x)</i>
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.

Table 6

U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories								
<i>—Underlying rating category—</i>								
<i>Sector</i> [¶]	<i>CCC</i>	<i>B</i>	<i>BB</i>	<i>BBB</i>	<i>A</i>	<i>AA</i>	<i>AAA</i>	<i>Single-risk category</i> [§]
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

Table 6

U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories (cont. 'd)

<i>Sector</i>	—Underlying rating category—							<i>Single-risk category</i>
	<i>CCC</i>	<i>B</i>	<i>BB</i>	<i>BBB</i>	<i>A</i>	<i>AA</i>	<i>AAA</i>	
<i>Tax-Supported Debt</i>								
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
<i>Health Care</i>								
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
<i>Utilities</i>								
Public power agencies and utilities with special project risk (1)	400	280	200	52	28	20	16	6
Public power agencies and utilities with high dependence on nuclear (2)	300	210	150	39	21	15	12	5
Public power agencies and utilities with no special project risk and little nuclear dependence (3)	150	105	75	20	11	8	6	2
Water, sewer, electric, and gas utilities (revenue-secured) (4)	120	84	60	16	8	6	5	1
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
<i>Special Revenue</i>								
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

Table 6

U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories (cont. 'd)

<i>Sector</i>	—Underlying rating category—							<i>Single-risk category</i>
	<i>CCC</i>	<i>B</i>	<i>BB</i>	<i>BBB</i>	<i>A</i>	<i>AA</i>	<i>AAA</i>	
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
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**¶¶	6.0	4.2	3.0	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	40.0	33.3	27.7	7.4	3.5	2.9	2.1	5

Table 6

U.S. Municipal And Corporate Rating Sensitive Capital Charges (%)* And Single-Risk Categories (cont. 'd)

<i>Sector</i>	—Underlying rating category—							<i>Single-risk category</i>
	<i>CCC</i>	<i>B</i>	<i>BB</i>	<i>BBB</i>	<i>A</i>	<i>AA</i>	<i>AAA</i>	
Life and property/casualty insurance holding companies	80.0	66.9	55.4	14.8	7.1	5.9	4.2	6
Bank operating companies	40.0	33.3	27.7	7.4	3.5	2.9	2.1	5
Bank holding companies	80.0	66.9	55.4	14.8	7.1	5.9	4.2	6
Corporare and corporate-like entities	60.0	49.9	41.6	11.1	5.3	4.4	3.2	6
Subordinated debt	80.0	66.9	55.4	14.8	7.1	5.9	4.2	6

*Expressed as a percent of average annual debt service. ¶Moral obligationNS: a constant adjustment factor of 200% will be used. Lease obligationNS: 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. (4) For use with water, sewer, and/or gas utilities, and when combined with electric utilities.

Table 7

International Rating Sensitive Capital Charges (%)* And Single-Risk Categories

<i>Country and Sector</i>	—Underlying rating category—				<i>Single-risk category</i> ¶
	<i>BB</i>	<i>BBB</i>	<i>A</i>	<i>AA</i>	
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

Table 7

International Rating Sensitive Capital Charges (%)* And Single-Risk Categories (cont.'d)					
Country and Sector	—Underlying rating category—				Single-risk category†
	BB	BBB	A	AA	
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 capital base. *Expressed as a percent of average annual debt service. †See Table 5.

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