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The Effect of Hurricane Katrina on Guarantors' Capital Positions Appears Manageable

Situation is unlikely to affect ratings, but uncertainty remains

Summary Opinion

- Beyond the human tragedy, Katrina, a category 4 hurricane, caused extensive property damage and flooding in the states of Louisiana, Mississippi and Alabama and disrupted the economy of the region.
- Financial guaranty insurance companies have billions of dollars of exposure to the affected areas and will face credit deterioration, actual claims payments and possible ultimate losses from their insurance portfolio through:
 - their direct exposure to issuers in the area (primarily public finance, investor owned utilities (IOUs), oil and gas related deals),
 - structured finance transactions (housing and student loans, primarily), and
 - the effect of the hurricane on the national economy (i.e. energy costs).
- The guarantors have ample liquidity to meet any near term claims as a result of the events, due to the basic structure of their insurance policies, which cover the scheduled principal and interest payments and can only be accelerated at the guarantor's option.
- Moody's has evaluated some high stress case scenarios that suggest that, while ultimate losses from this event could be significant, they appear unlikely to jeopardize financial guaranty insurers' current ratings, given capital positions and earnings profiles. Even under the most extreme of Moody's stress scenarios, guarantor losses do not result in capital depletion to levels inconsistent with their ratings. However, under such severe scenarios some guarantors would have to take corrective actions to adjust their capital position to avoid stress on their rating.
- Less than five percent of the exposure affected by Katrina was reinsured by the guarantors, as opposed to an average of 15% for the overall portfolio. This leaves most reinsurers relatively unaffected and should facilitate possible increases in cedings by the primaries.
- While the near term financial consequences of this catastrophe to financial guarantors is uncertain, such losses as may be incurred would likely be mitigated in the longer term by enhanced demand for their product, causing prices to firm and perhaps even a broadening of the insurers' penetration of the municipal market.
- Moody's will continue to monitor the situation as it unfolds and will update its views as necessary.

Overall consequences of Katrina are still unknown

The states of Louisiana and Mississippi suffered severe physical damage and extensive economic disruption as a result of Hurricane Katrina. Alabama was also affected by Katrina but the extent of the damage appears to be much smaller than in the two other states. At this point, many questions remain unanswered and it will take time to get a good sense of the extent and duration of the economic disruption. Similarly, given the magnitude of the damage in some areas, the pace of rebuilding and recovery could be protracted, creating long-term credit risks in some cases.

Katrina's damage to the Gulf Coast was particularly devastating to coast-front municipalities. The most affected municipalities include the City of New Orleans and nearby localities. Alabama did not fare as badly as Louisiana and Mississippi, and we expect the recovery and rebuilding efforts there to be underway quickly, financed by private insurance and federal aid. For the affected Gulf Coast states, extraordinary federal legislation is likely to be enacted to respond to the unprecedented damage sustained by New Orleans, Biloxi, Gulfport and other Gulf Coast towns. At this time, the extent of federal rebuilding assistance has not been determined. Additionally, the extent of state support for local municipal issuers is unclear at present although state officials have said that there may be a need for outside support but that they may not be in a position to help. They may seek federal assistance for debt service obligations coming due in aid bills being proposed in Congress.

Federal aid typically flows quickly in response to a major catastrophe to finance emergency response, feeding and sheltering programs. Federal aid also pays much of the cost of rebuilding public infrastructure that is damaged or destroyed, but the pace of rebuilding will vary. Private insurance should cover a large portion of the property damage suffered by issuers insured by the guarantors.

The long-term impact of Katrina in Louisiana and the New Orleans region will be determined by various factors, including the pace of clean-up and recovery efforts, the level and speed with which federal dollars are disbursed, and whether New Orleans evacuees permanently relocate. The evacuation of New Orleans means that a substantial portion of the state's economic engine has been disabled indefinitely, as the New Orleans metropolitan area accounted for almost a third of the state's employment in 2004.

The largest guarantors have significant exposure to credits affected by Katrina

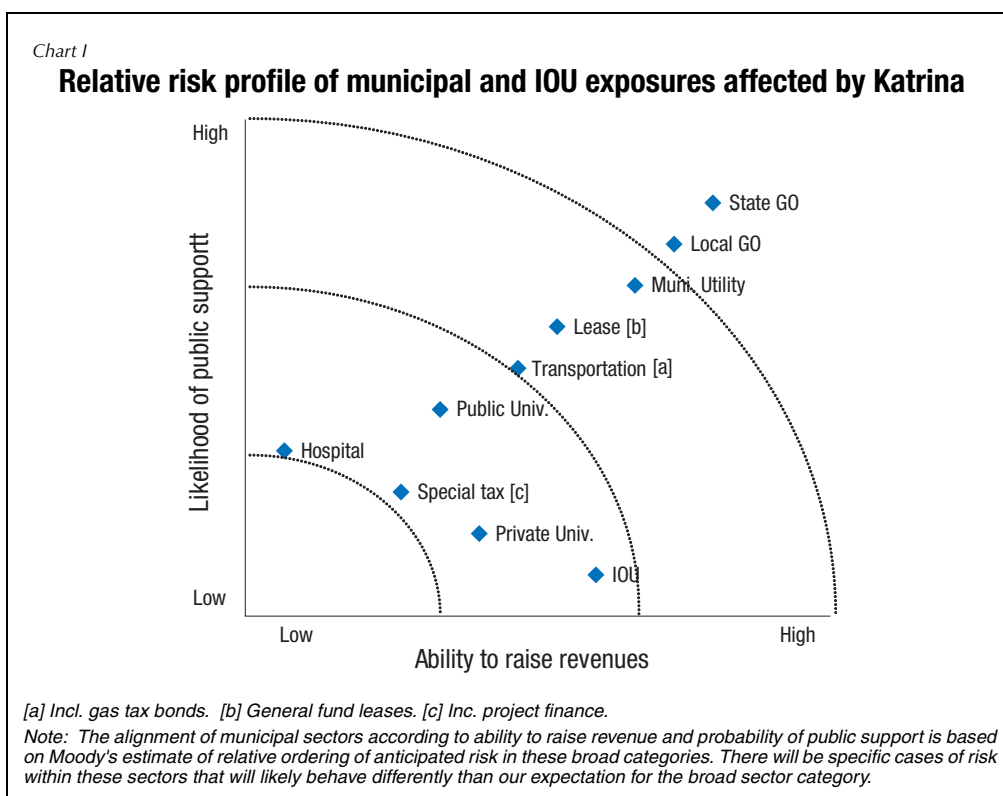
Guarantors, as opposed to other insurers, are particularly exposed to the effect of Katrina given their historical focus on municipal credit enhancement; municipal credits represent approximately 50% of the guarantors' par in force. Below is a summary of the guarantors' reported exposure to issuers in the FEMA designated counties within the three states most affected by the hurricane. (Note that the guarantors may not have reported their exposure consistently, making direct comparison across companies difficult. While an apples to apples comparison would lead to slightly different exposure numbers, we do not believe that the differences in reporting are significant enough to affect our basic conclusions.)

(\$ million)	Ambac	MBIA	FSA	FGIC	XLCA/FA*	CIFG	AGC	Radian	Total Exposure
Local Government Obligations	1,547	1,252	1,313	998	54		10	115	6,242
Lease Revenue & Other Tax Backed	1,400	515	314	851	16		41	91	3,818
Municipal Utilities	251	398	483	412	29	5	11	44	1,680
Transportation	233	149	88	30			3	1	529
Higher Education	644	622	15	190	22		5	8	1,582
Healthcare	217	324	281	86			9	135	1,559
Other Municipal	46		43	27			0.5	16	143
Municipal Exposure	4,339	3,260	2,537	2,594	120	5	80	410	15,553
Investor Owned Utilities	440	29	13	75	90				647
Total Exposure	4,779	3,289	2,550	2,669	210	5	80	410	16,200

* Direct exposure only.

It is still too early to get a strong sense for the actual effect of the hurricane on the various exposures enhanced by the guarantors, as the structural and economic damages to the area have not yet been properly estimated. There is also uncertainty over the funding and ultimate success of future reconstruction efforts. Nevertheless, some comfort can be gained from comments at the state and federal level about commitments to the rebuilding effort. A central credit factor to all exposures, however, will be their sensitivity to the general level of economic activity from which they derive their revenues. The greatest differentiating factors among the various issuers are the extent to which they have control over their revenues and expenses (by raising prices, cutting costs or through increased taxation), and the extent to which such issuers will benefit from significant third party support, most likely from the state or federal government or from private insurance.

This relationship is illustrated in Chart I, which graphs the various public finance exposure types wrapped by the guarantors along these two axes. The greater an issuer's ability to adjust its revenue base and the greater the likelihood of support, the lower the risk of default. Following this logic, State general obligation bonds (state GO) are generally considered to have the lowest risk content among municipal sectors, as they are explicitly supported by the full faith and credit and taxing authority of the issuing state. Local government GOs are next on the list as it is likely that the state and federal authorities will assist local municipalities in their rebuilding efforts. The default frequency on these securities has been minimal since the Great Depression, and the expected loss severity is also extremely low. Even in the aftermath of Hurricane Katrina, our current expectation is that there will not be any payment disruptions for Louisiana, Mississippi or Alabama state GO bonds. The credit ratings of Louisiana and Mississippi have been placed on review for possible downgrade by Moody's reflecting credit stress but a still very low likelihood of default. At the other extreme are healthcare exposures, which have the highest default experience within public finance. Tax-exempt healthcare securities can experience loss severities similar to corporate securities upon default. The weaker hospitals in the hurricane-affected areas are likely to be in a difficult situation following Katrina, which could lead to claims and ultimate losses for the guarantors. (For a more complete description of the public finance credits that are likely to be impacted, please see Moody's Special Comment entitled "[Hurricane Katrina – Credit Implications For State, Local And Enterprise Credits in The Southeast U.S.](#)" published September 8, 2005.)



OTHER SECTOR EXPOSURES

The risk to the guarantors from structured transactions (for the most part, MBS, manufactured housing and student loans) is relatively modest as such transactions tend to be geographically diversified, benefit from some form of structural credit enhancement, and the collateral is generally insured against property damage, or in the case of student loans government insured.

Some guarantors also have substantial exposure to the oil and gas industry in the region. We expect meaningful deterioration of some of these exposures as a result of property damage of production disruption but, at this time, losses to the guarantors are not expected.

Possible claims from Katrina do not present a liquidity risk to the guarantors

The chaos created by the hurricane in the affected areas is such that some payment disruption over the short term seems highly likely as certain issuers will not be able to re-establish treasury operations by the next debt service date and/or may face significant temporary shortfalls in cash receipts. Some guarantors have already been informed of a limited number of small claims due to bond default. The states, however, are actively working with the various municipalities to avoid payment disruptions by facilitating processing through trustees and paying agents but without any direct financial support. Furthermore, debt service reserves and other cash reserves should help most issuers meet their coming debt service payments.

Even in worst case scenarios, the guarantors have ample liquidity to meet any claims coming out of the affected areas. The financial guaranty insurance policies are designed to cover scheduled principal and interest payments and can only accelerate at the guarantor's option, making required short-term claims payments by the guarantors a fraction of the total exposure. A worst case estimate of debt service due on the exposure in counties affected by the Hurricane over the next 12 months, assuming wholesale defaults, shows manageable debt service exposures relative to readily available liquidity for all guarantors.

The capital impact of Katrina remains unknown but should be manageable

It is still too early to predict the combined effect of possible losses and underlying rating downgrades on the guarantors' risk-adjusted capital adequacy levels, although the potential for deterioration clearly exists given the meaningful size of the exposure and the extent of destruction and economic disruption within the area. Uncertainty as to the ultimate impact on various wrapped credits within the affected region prevents us from deriving an accurate estimate of the long term capital consequences for the guarantors, although a significant number of defaults is expected, reflecting the high level of disruption caused by Katrina.

Moody's principal methodology for determining the capital adequacy of the financial guarantors is an analysis of the risk profile of their insurance portfolios relative to their financial resources. Moody's uses a simulation model to estimate the probability distribution of losses that could come out of their insurance portfolio and compares the losses at a confidence level consistent with their rating with the firm's actual capital resources (see Appendix I).

Because accurate loss estimates are not currently available, we have performed a sensitivity analysis of the guarantors' capital positions to various stresses¹. We ran four specific stressed default and loss scenarios on the guarantors' exposures to the areas affected by the hurricane. (In our analysis, we assume that the states' general obligation bonds do not default given the very low likelihood of such an event.)

Our first scenario assumes that 50% of all exposures in the affected areas (excluding state GOs) default and experience the average loss severities used in our capital model for each exposure type. The second and more stressful scenario assumes that 100% of the affected exposures default (a highly unlikely assumption) and experience these same average loss severities by sector. Our third stress-test scenario also assumes that 100% of the exposures default but experience loss severities equal to two-times the average (capped at 100%). The last, and most severe scenario, is based on the previous one but uses even higher severities for certain exposures to New Orleans given the unique nature of the event and uncertainty around the extent of the rebuilding and economic prospects of the city. (See Table 2 for more information on our loss severity assumptions.)

Local Government Obligations	5%–20%
Lease Revenue & Other Tax Backed	5%–50%
Municipal Utilities	10%–50%
Transportation	10%–100%
Higher Education	10%–100%
Healthcare	60%–100%
Investor Owned Utilities	10%–80%

1. The current analysis focuses on the hard capital ratio of the guarantors. An analysis of the total capital ratio would have yield broadly similar results.

Table 3

Stress Capital Adequacy Analysis - Affected Municipal Exposures & Utilities

(\$ million)	Ambac	MBIA	FSA	FGIC	XLCA/FA*	CIFG	AGC	Radian
Hard Capital (YE 2004)	9,819	11,175	4,378	3,188	1,462	891	1,234	2,133
Stressed Hard Capital Ratio								
Scenario 1	1.4x-1.49x	1.30x-1.39x	1.5x-1.59x	1.4x-1.49x	1.2x-1.29x	2.5x-2.59x	1.6x-1.69x	1.8x-1.89x
Scenario 2	1.3x-1.39x	1.2x-1.29x	1.5x-1.59x	1.4x-1.49x	1.2x-1.29x	2.5x-2.59x	1.6x-1.69x	1.8x-1.89x
Scenario 3	1.2x-1.29x	1.2x-1.29x	1.4x-1.49x	1.2x-1.29x	1.2x-1.29x	2.5x-2.59x	1.6x-1.69x	1.7x-1.79x
Scenario 4	1.2x-1.29x	1.2x-1.29x	1.3x-1.39x	1.2x-1.29x	1.2x-1.29x	2.5x-2.59x	1.6x-1.69x	1.7x-1.79x
Range of potential losses in the stress scenarios	331-1423	261-1054	167-608	149-652	7-27	0-1	6-27	53-180
* Direct exposure only.								
Scenario 1: 50% of affected areas' exposures (excluding state GO) default at average severity.								
Scenario 2: 100% of affected areas' exposures (excluding state GO) default at average severity.								
Scenario 3: 100% of affected areas' exposures (excluding state GO) default at twice the average severity.								
Scenario 4: scenario 3 plus some additional stress for selected New Orleans credits.								

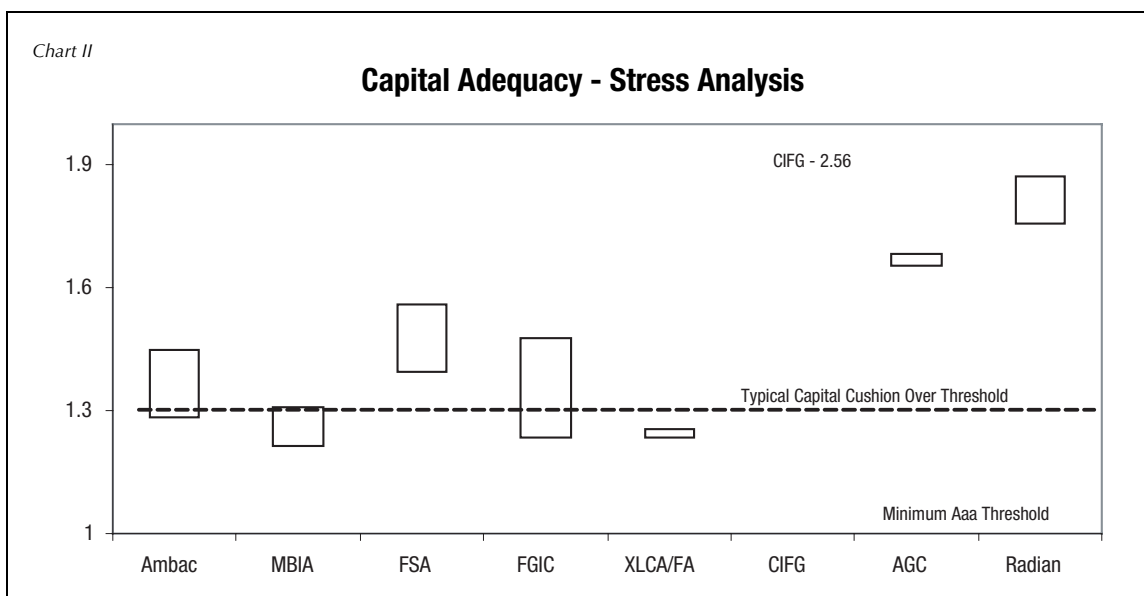


Table 3 and chart II illustrate that, even in our most stressful and highly-unlikely case, all of the guarantors would still have enough hard capital to cover losses at a 99.9% confidence level, which is a key metric in our rating analysis. Having said that, the stress-level portfolio deterioration experienced by some guarantors would have a meaningful impact on their capital positions, reducing the cushion that we expect them to normally maintain above 1x loss coverage at the 99.9th percentile. Such capital cushion is designed to absorb potential worst case losses while still leaving the guarantors with financial resources consistent with their Aaa rating, and therefore somewhat insulating their ratings from event risk. As a result, while a capital ratio between 1.0x and 1.3x does not present an immediate threat to the rating of a guarantor, it leaves the firm exposed to subsequent capital stresses and, consequently, is not seen as a sustainable capital position over an extended period of time. This means that if actual credit events caused some guarantors' capital ratios to fall below 1.3 times coverage, we would expect them to take corrective action to adjust their capital position within six months in order to avoid stress on their rating. Failure to do so would likely have negative rating consequences. The guarantors have very strong incentives to maintain a healthy capital position and, given the contained size of the worst case estimates, they would most likely be able to take necessary steps to enhance their capital position. Some of the actions that guarantors would likely consider under such severe scenarios may involve slower growth, suspension of stock buybacks, increasing their usage of reinsurance, and possibly accessing the capital markets.

MBIA and XLCA/FA are two companies that show a range of stressed hard capital ratios essentially below the typical capital cushion required over the Aaa threshold. However, such estimates of stressed capital ratios do not take into consideration some company specific mitigating factors. The starting hard capital ratio for XL is conservative as it

does not capture the benefits of an excess of loss reinsurance with its parent. MBIA's hard capital ratio at year-end 2004 was slightly in excess of 1.3 times, reflecting deterioration in its insurance portfolio (i.e. Eurotunnel and manufactured housing) and recent special dividends. However, the pre-Katrina capital resources of MBIA have improved since then, due to the absence of additional dividends and the relatively modest growth of the firm's insurance in force.

Financial guaranty reinsurers likely to fare relatively better

Guarantors have retained more of their exposure to the credits affected by Katrina than is typical for their overall book as many of these transactions were perceived as relatively low risk and did not typically present single risk exposure concerns. As a result, reinsurers will likely be less affected than the primaries by possible Katrina-related credit deterioration and should have ample capacity to meet possible reinsurance needs of the guarantors. While this means that primary financial guarantors will see less reinsurance benefit than they would ordinarily expect, it also limits their own credit exposure and ensures that ample reinsurance capacity will be available in the near term in the event that primary insurers choose to operate with more modest capital leverage for some period of time.

Losses could enhance demand function for insurance in municipal marketplace

The financial guaranty market is quite competitive, with pricing currently pressured by persistently thin credit spreads and the very modest historical loss experience of both the guarantors and the uninsured sector of the market. Penetration of the municipal market by financial guaranty insurers has historically been high and is currently above 50%. Pricing, however, has somewhat tightened over the last few years, reflecting increasing competition and tighter credit spreads. If the market begins to see greater risk in the municipal sector due to higher losses and/or wholesale downgrades, pricing and possibly insurer penetration could rise, at least temporarily, as investors become re-sensitized to credit risk. Moreover, stress within the portfolios of the financial guarantors will lead to greater pricing discipline among these firms, as increased apparent value in the product provides market support for firmer pricing.

Related Research

Special Comments:

[Hurricane Katrina - A Costly Storm for the P&C Insurance Industry, But Widespread Rating Actions Are Not Expected, August 2005 \(# 94132\)](#)

[Property and Casualty Insurance: Hurricane Katrina's Distinctive Characteristics Will Impede Insured Loss Estimation, September 2005 \(# 94151\)](#)

[Stable Outlook for Mortgage Insurers in Wake of Hurricane Katrina, September 2005 \(# 94175\)](#)

[Hurricane Katrina - Credit Implications For State, Local And Enterprise Credits In The Southeast U.S., September 2005 \(# 94210\)](#)

[The Impact of Hurricane Katrina on Non-Financial Industries, September 2005 \(# 94161\)](#)

[Hurricane Katrina: No Rating Impact to Rated REITs, Mortgage Banks & GSEs, September 2005 \(# 94218\)](#)

[The Impact of Hurricane Katrina on US Finance Companies, September 2005 \(# 94222\)](#)

[Moody's Comments on Hurricane Katrina's Impact on U.S. Life and Health Insurance Industries, September 2005 \(# 94230\)](#)

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Appendix I

How We Measure an Insurer’s Capital Adequacy and Claims Paying Ability

Moody’s takes a portfolio risk approach to analyzing the insurers’ portfolios and measuring potential credit losses. The financial guarantor team has developed a portfolio risk model which measures, among other things, the probability distribution of credit losses for an insurer’s insured portfolio on a present value basis. The financial strength rating of a particular company is driven both by the output of our portfolio risk model and by a number of other more fundamental factors such as management quality, the robustness of the earnings stream, financial flexibility, liquidity, underwriting and risk management practices, competitive dynamics, the regulatory environment, the ownership structure and franchise value. The benchmark for the output of the model is not the margin of capital over potential credit losses in low probability scenarios but rather the adequacy of the companies’ capital resources to cover losses at different confidence intervals. For instance, the default probability for a Aaa rated guarantor is consistent with the 99.99th confidence interval so any guarantor rated Aaa by Moody’s must have sufficient total capital to cover losses at that confidence interval and enough hard capital to cover losses at the 99.9th confidence interval (expressed as, for example, a Hard Capital Ratio in excess of 1.0x). That is not to say, however, that any guarantor with sufficient capital to cover this level of losses will be rated Aaa. Also, how much capital a guarantor must have beyond one times the credit losses at the target confidence interval will be driven by a number of other factors including the composition of the guarantor’s earning stream, the company’s exposure to large single risks or correlated risks, the transition risk associated with the guarantor’s insured portfolio and its financial flexibility. Nonetheless, every guarantor must have sufficient claims paying resources to cover losses at the confidence interval consistent with the default probability associated with the rating assigned to that company.

One of the key inputs into Moody’s portfolio risk model for the financial guarantors is the default probability, in the expected case, for each of the insured exposures. The default probability is derived from the rating assigned to each exposure. Another key input is the expected loss severity. For each insured sector, Moody’s has derived an expected loss severity based upon historic experience. For each exposure the product of the default probability and the loss severity is the expected loss for that exposure. The aggregate expected loss for the insured portfolio — or, more simply, the sum of the expected loss of each insured exposure — is a primary driver of portfolio risk in the tail of the distribution. To the extent that the underlying ratings of a large number of the insured exposures are under pressure and, subsequently, a large number of downgrades takes place, that could change the aggregate expected loss of the insured portfolios and increase the tail risk and the credit losses associated with different confidence intervals. Additionally, given the unprecedented nature of recent events, the expected loss severity for any particular sector may prove to be too low and larger scale losses could occur. This will also impact the expected loss of the insured portfolios and the corresponding tail risk.

Moody’s key capital ratio metrics are calculated as follows:

Hard Capital Ratio	<p>Formula: Hard Capital ÷ 99.9 Percentile Losses</p> <p>Concept: Hard capital relative to the maximum amount of credit losses (present value) with 99.9% confidence. Measures the ability of a guarantor to meet stress-level losses with hard capital (i.e., qualified statutory capital, unearned premium reserves, & 85% of PV installment premiums.)</p> <p><i>Note: The 99.9% loss level is used as the benchmark for Aaa-rated guarantors. For Aa-rated guarantors, a 99.5% confidence interval is applied.</i></p>
Total Capital Ratio	<p>Formula: Total Capital ÷ 99.99 Percentile Losses</p> <p>Concept: Total capital relative to the maximum amount of credit losses (present value) with 99.99% confidence. Measures the ability of a guarantor to meet stress-level losses at a higher confidence interval with total capital (i.e., hard capital plus the discounted value of soft capital facilities.)</p> <p><i>Note: The 99.99% loss level is used as the benchmark for Aaa-rated guarantors. For Aa-rated guarantors, a 99.9% confidence interval is applied.</i></p>

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