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Moody's Portfolio Risk Model Results Update

Overview Of Moody's Portfolio Risk Model

Moody's introduced in 2000 a new portfolio risk model for evaluating financial guarantors.¹ In contrast to some existing measures of portfolio risk that focus on a single depression scenario, Moody's model is designed to produce more accurate estimates of the amount of capital needed to withstand a wide variety of stress scenarios. The model also improves portfolio risk measurement by estimating the benefits of diversification and costs of risk concentrations as measured by the magnitude of aggregate exposures to single names, single ABS seller/servicers, highly volatile sectors, and emerging market economies. In combination, these attributes allow us to estimate the entire potential loss distribution associated with a guarantor's existing insured exposure.

Throughout the risk distribution, the losses reflect the portfolio's credit quality, maturity structure and distribution across bond market sectors. However, the amount of loss in distress scenarios – i.e., the right-hand tail of the distribution – also depends critically on the guarantor's risk concentrations, as well as systematic macroeconomic risk. The capital available to support the “tail risk” is an important indicator of a company's claims-paying capability under extraordinarily adverse circumstances and is, therefore, a useful indicator of financial strength. However, other factors are important as well, including the potential credit losses that are likely to occur under more normal circumstances, the diversification of the portfolio, the capital structure and capital raising ability of the firm, and the profitability of business booked. Consequently, in Moody's view, there is no single ratio that encapsulates a guarantor's risk of default or rating transition risk. Instead, individual ratios must be viewed in a broader context to assess a guarantor's true financial strength.

Although Moody's does not have rigid minimum capital ratios for each rating level, we generally feel that both hard and total capital coverage ratios should be maintained at levels above 1.3 times, providing cushion to absorb the potential for deterioration within the insured portfolio, as well as risks that may not be captured by this model.

1. For more information, please see Moody's Special Comment entitled “Moody's Portfolio Risk Model for Financial Guarantors” dated July 2000.

Current Model Results Comparison

The following table summarizes several key portfolio risk ratios for the guarantors' insured portfolios as of June 30, 2003 and year-end 2002, reflecting underlying ratings as of Dec. 31, 2003 and June 30, 2003 respectively.

Key Portfolio Risk Ratios ^{2&3}											
	Credit Quality Ratio (lower is better)		Tail Risk Ratio (lower is better)		Dispersion Ratio (lower is better)		Hard Capital Ratio (higher is better)		Total Capital Ratio (higher is better)		
	6/30/2003	12/31/2002	6/30/2003	12/31/2002	6/30/2003	12/31/2002	6/30/2003	12/31/2002	6/30/2003	12/31/2002	
Ambac	39 bps	38 bps	128 bps	124 bps	3.29x	3.24x	1.37x	1.40x	1.34x	1.38x	
FGIC	17 bps	16 bps	70 bps	67 bps	4.12x	4.10x	2.04x	2.07x	1.89x	1.93x	
FSA	23 bps	22 bps	78 bps	80 bps	3.43x	3.62x	1.62x	1.54x	1.55x	1.37x	
MBIA	39 bps	41 bps	124 bps	126 bps	3.19x	3.10x	1.47x	1.42x	1.42x	1.36x	
SJFG	26 bps	27 bps	123 bps	154 bps	4.80x	5.75x	2.12x	2.01x	2.04x	1.87x	
XLCA/XLFA	39 bps	39 bps	179 bps	179 bps	4.60x	4.56x	1.51x	1.57x	1.26x	1.45x	
CIFG	21 bps	13 bps	208 bps	248 bps	9.94x	19.78x	4.12x	8.57x	3.21x	6.36x	
Assured Guaranty	35 bps	32 bps	116 bps	112 bps	3.30x	3.45x	1.40x	1.26x	1.43x	1.29x	
Radian Re	44 bps	39 bps	152 bps	148 bps	3.46x	3.78x	1.31x	1.39x	1.19x	1.27x	
RAM Re	41 bps	41 bps	141 bps	137 bps	3.47x	3.37x	1.51x	1.15x	1.47x	1.14x	
Industry	33 bps	33 bps	112 bps	111 bps	3.39x	3.36x	1.51x	1.49x	1.44x	1.42x	
Definition of Terms											
Credit Quality Ratio	Formula: Expected Losses ÷ Adjusted Net Par Outstanding Concept: Expected present value of losses imbedded in the insured portfolio relative to net par outstanding, adjusted for the benefit received from reinsurance (i.e., the average expected loss rate on the portfolio). This ratio indicates a portfolio's average credit quality, which depends upon its distribution across sectors, rating categories and tenors.										
Tail Risk Ratio ⁴	Formula: 99.9 Percentile Losses ÷ Adjusted Net Par Outstanding Concept: The maximum amount of (present value) credit losses with 99.9% confidence relative to net par outstanding, adjusted for the benefit received from reinsurance. Measures a portfolio's stress-level losses relative to par, which depends upon its average credit quality, risk concentrations and correlations among credits.										
Dispersion Ratio (Previously called Diversity Ratio) ⁵	Formula: 99.9 Percentile Losses ÷ Expected Losses Concept: The maximum amount of (present value) credit losses with 99.9% confidence relative to the expected losses embedded in the insured portfolio. Measures the impact of large single risks & risk concentrations on portfolio risk for a given expected loss level.										
Hard Capital Ratio	Formula: Hard Capital ÷ 99.9 Percentile Losses 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.) 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.										
Total Capital Ratio	Formula: Total Capital ÷ 99.99 Percentile Losses 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.) 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.										

- 2 It is important to note that many factors play important roles in Moody's analysis of the financial guarantors. The existing insured portfolio represents only a snapshot and thus provides limited information about the risk content of the portfolio that will be insured in the future. Given the long-term nature of the financial strength ratings, anticipated future business activity is almost as important a risk factor as the existing insured book of business. Moreover, companies differ with respect to the ability to mitigate risk, the quality of the investment portfolio, liquidity, operating risk, the quality of management and corporate governance, the quality and level of earnings growth, access to capital, and holding company financial leverage. As a result, the level of capital support required for a specific insurance financial strength rating depends on many factors beyond simply the amount of potential credit losses measured by the portfolio risk model at various risk percentiles.
- 3 For the Aa rated companies - SJFG, Assured Guaranty, Radian and RAM Re, the capital ratios are presented at the Aaa level for comparison purposes. Measured at the Aa level, the hard and total capital ratios for these companies are as follows:

Capital Coverage Ratios Measured at Aa level:				
	Hard Capital Ratio (higher is better)		Total Capital Ratio (higher is better)	
	6/30/2003	12/31/2002	6/30/2003	12/31/2002
Assured Guaranty	1.58x	1.43x	1.62x	1.49x
SJFG	2.57x	2.54x	2.48x	2.45x
Radian Re	1.51x	1.62x	1.38x	1.47x
RAM Re	1.70x	1.30x	1.65x	1.31x

- 4 This is a new ratio created in 2003 which compares maximum loss relative to par with 99.9 percent confidence. A Tail Risk Ratio of 100 basis points means that, on average, there is a 99.9% chance that the losses will be less than 100 basis points per dollar of net par outstanding.
- 5 The Dispersion Ratio, formerly called the Diversity Ratio, measures the dispersion around mean losses. A direct comparison of this ratio across companies is not very meaningful because the mean losses are different.

Primary Guarantors

The average credit quality ratios for the primary companies remain close to those of the prior period, signaling that the negative impact on the guarantors' insured portfolios from the record high corporate default frequency and bankruptcy filing experience of the past three years might be leveling off. The capital ratios for the four long-established companies also remain steady, with FSA and MBIA actually showing some improvement.

- MBIA's improved credit quality ratio partially reflects the upgrades of a few large exposures including those of Pacific Gas & Electric, a bankrupt investor-owned utility company and AESOP, a structured transaction backed by rental fleet receivables.
- At FSA, capital generation through retained earnings outpaced the growth in its insured portfolio, and management added a contingent soft capital facility placed through the capital markets, which receives higher credit under Moody's methodology, to its traditional bank depression-line of credit.
- Ambac's slightly lower capital ratios were primarily impacted by a larger capital charge on the company's growing financial services businesses consisting primarily of investment agreements, and interest rate and currency swaps.
- FGIC continued to have the strongest credit quality and highest capital ratios amongst the established companies. However these ratios are expected to change over time. The company was sold by GE Capital in December 2003 to a buyer group consisting of The PMI Group, Inc., The Blackstone Group, The Cypress Group, and CIVC Partners L.P. With the completion of this transaction, FGIC is pursuing business strategies similar to the other guarantors, expanding its underwriting capabilities beyond the U.S. municipal and mortgage-backed markets into other structured and international sectors in order to diversify its portfolio and boost its equity returns⁶.

For the newer financial guarantors – notably CIFG and SJFG – period over period model results show that the firms achieved better diversification as indicated by their significantly lower dispersion ratios, brought about by the growth in their insured portfolios. When compared to the established guarantors, the capital ratios for these companies are relatively high, indicating that they are still in a ramp-up stage. Other company-specific factors worth mentioning are as follows:

- XL's total capital ratio fell significantly from the previous period, reflecting portfolio growth, coupled with the elimination of a soft capital facility from a company that had been rated Aaa. Note, however, that a \$100 million capital infusion from XLCA's parent in December 2003, as well as several intercompany capital support agreements that benefit XL's financial guaranty operations, are not reflected in these model results.
- SJFG's primary writings were relatively modest during this period, although its portfolio diversification was significantly enhanced by reinsurance business, resulting in a positive impact on the guarantor's dispersion ratio.
- CIFG's insured portfolio remains quite small reflecting the company's slow ramp-up due to licensing limitations, although in many states these issues have since been resolved, which should help future growth.

Hybrids and Reinsurers

Portfolio quality ratios for the reinsurers on average deteriorated during the period, although their capital ratios improved. As discussed in previous Moody's research publications, financial guaranty reinsurers have assumed significant amounts of business on a facultative basis, resulting in slightly less favorable portfolio characteristics vis-à-vis the primaries. As a result, the reinsurers have been more negatively affected by the recent economic downturn, as some portions of their portfolios experienced downward rating pressure without the offsetting benefit from the growth in highly-rated CDO/CDS business that many of the primaries have written. For the Moody's-rated financial guaranty reinsurers in aggregate, expected and tail level losses increased by a larger percentage than did net par outstanding as downgrades exceeded upgrades in the model period, resulting in weaker credit quality and tail risk ratios.

The results of individual companies are diverging somewhat as they pursue different strategies.

- Assured Guaranty Corp. (AGC), formerly ACE Guaranty Corp. and Assured Guaranty Re International Ltd. (AGR) are undergoing significant strategic changes and are respectively focusing on primary financial guaranty and financial guaranty reinsurance. Moody's revised AGC's IFSR rating to Aa1 from Aa2 and AGR's IFSR to Aa2 from Aa3 in May 2004 to reflect the strong capital base and conservative financial profile and strategy of the recently formed Assured Guaranty group as well as the existing earnings stream coming from its established financial guaranty businesses.⁷ AGC's credit quality ratio deteriorated slightly

⁶ For more information, please refer to Moody's press release confirming FGIC's Aaa IFSR upon the completion of the acquisition on Dec. 18, 2003.

⁷ For more information, please refer to Moody's press release about Assured Guaranty Group on May 6, 2004.

as growth in its primary Aaa/Aa rated CDO/CDS business partially compensated for the impact of downgrades in its existing portfolio.

- Radian Re has also undergone significant changes recently.⁸ The reinsurer's Aa2 IFSR was placed under review for downgrade in December 2003 and was downgraded to Aa3 in May 2004, reflecting its recent loss of a large reinsurance relationship and Moody's view of the risks of Radian Group's financial guaranty business given its distinct and relatively untested Aa primary financial guaranty strategy. On June 1, 2004, Radian Re was merged into its affiliate Radian Asset Assurance which pursues primary financial guaranty business in niche market sectors, with Radian Asset being the surviving entity. Radian Re had the weakest credit quality and tail risk ratios as of 6/30/03, attributable in part to large concentrations in certain correlated sectors such as healthcare. These ratios would have been materially improved if the block of quota-share reinsurance business that was taken back by MBIA at the beginning of 2004 were excluded.
- For RAM Re, capital coverage ratios improved significantly as the company added \$92 million of new capital in April 2003, while the credit quality ratio remained stable.

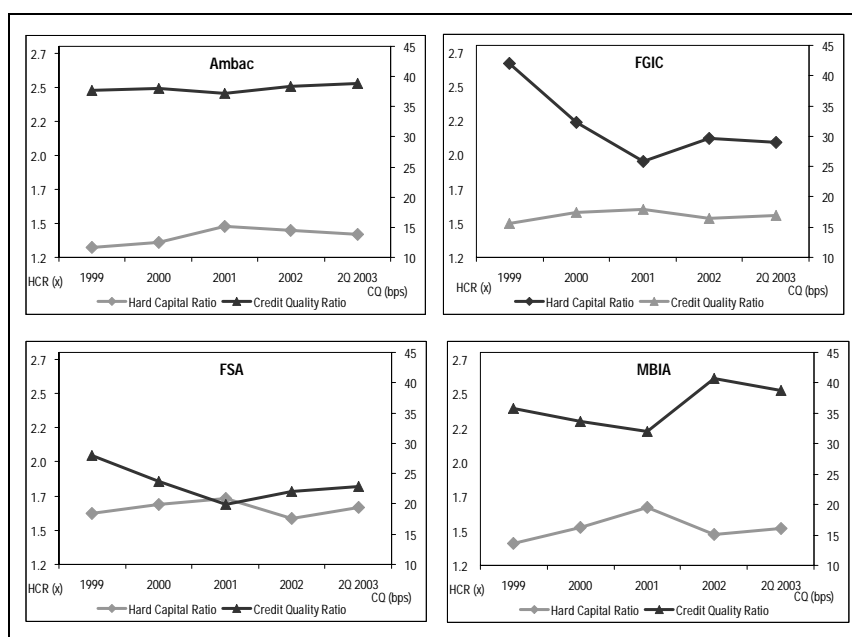
Trend Analysis

A review of selected model ratios since Moody's first introduced its portfolio risk model yields some interesting trends as described below.⁹

Primary Guarantors¹⁰

Consistent with their Aaa insurance financial strength ratings, the model ratios for the primary guarantors exhibit remarkable stability despite turmoil in the marketplace over the period examined, reflecting the high quality and diversification of their insured portfolios supported by strong capitalization. The results, however, also reveal some differences in the companies' insured portfolios and business strategies.

Selected Historical Model Ratios (Aaa Primaries)



Ambac's ratios have been the most stable over the period, with the credit quality ratio remaining in the 37-39 basis point range. Although the hard capital ratio has been the lowest amongst the established companies, it has remained over 1.3 times throughout the period, reflecting strong capital adequacy. Ambac's lower capital ratios reflect the com-

⁸ For more information, please refer to Moody's press release about Radian Asset Assurance on May 25, 2004.

⁹ Moody's had made some minor modifications to the portfolio risk model since it was introduced in 1999. The results for 2001-2003 are stated using a consistent platform and the results prior to 2001 have been adjusted to be comparable to the results of the subsequent periods. While the adjustment may not be precise the error margin should not be meaningful.

¹⁰ This special comment does not include historical model ratios for XL, SJFG and CIFG as these companies are still at a relatively early stage of development and ratio trends are not very meaningful.

pany's relatively more aggressive financial management and capital utilization - higher debt leverage and risk adjusted operating leverage leading to higher returns vis-à-vis its competitors.

FGIC's credit quality ratio has held steady within a narrow 15-18 basis point range and is the strongest in the industry, reflecting its historical low-risk municipal focus. The company's hard capital ratio, which despite declining significantly from 1999 to 2001 as FGIC up-streamed about \$600 million in dividends to its former parent GE Capital, still remained the highest among the established companies. Going forward, FGIC's capital ratios are expected to move more in line with its peers as the company expands its underwriting focus under its new ownership structure to include structured and non-US financial guaranty business.

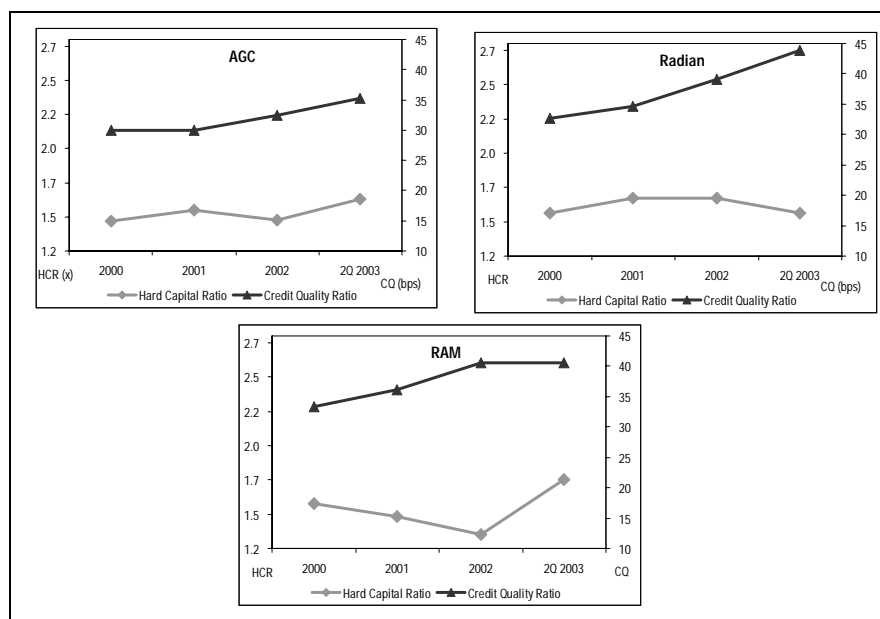
FSA's credit quality ratio has consistently been stronger than the industry average, reflecting its underwriting focus on high quality structured transactions including super senior or senior tranches of pooled credit default swaps, in addition to its use of layered loss reinsurance which tends to improve significantly the credit quality of the retained portfolio. FSA's credit quality ratio improved from 1999 to 2001 as it underwrote more highly rated business including synthetic CDOs, but worsened in 2002 and 2003, reflecting downgrades in the high yield CDO sector and a reduction in Aaa origination from the extraordinarily high levels in 2001. The company's hard capital ratio has been consistently above 1.5 times.

MBIA's credit quality deteriorated sharply in 2002 due to a higher proportion of below investment grade exposures, resulting from downward rating migration within the existing portfolio. Some transactions in the IOU, credit card ABS, airline EETC and infrastructure project finance sectors deteriorated in the aftermath of the 2001 terrorist attack and as the economy weakened, although the company's credit quality has since improved modestly. MBIA's hard capital ratio has mirrored the overall trends in the company's credit quality ratio.

Hybrids and Reinsurers:

Since 2000, the reinsurers' credit quality ratios have been weaker than those of the primaries, reflecting the trend among the primary companies to shape their portfolios by ceding higher-risk transactions while retaining the bulk of their highly rated CDO/CDS business. Credit quality ratios for the reinsurers declined during this period as downgrade trends in certain sectors were not offset by the growth in high quality CDO and structured business as experienced by the primaries. For AGC, however, the company's focus on insuring high quality CDS transactions in the primary market helped it to partially offset downgrades within its existing reinsurance portfolio, resulting in a less rapid increase in its credit quality ratio relative to its peers. AGC's hard capital ratio has remained in the 1.4x to 1.6x range. For Radian Re, its hard capital ratio improved modestly from 2000 to 2002 despite deteriorating portfolio quality as the company's insured portfolio grew more slowly than its capital. RAM Re's hard capital ratio declined from 2000 to 2002, reflecting worsening credit quality within the existing portfolio coupled with strong portfolio growth, but has improved since then due to an infusion of new capital.

Selected Historical Model Ratios (Aa Hybrids and Reinsurers)
(Hard Capital Ratio measured at 99.5% Confidence Level)



Outlook For The Guarantors' Insured Portfolios And Model Ratios

The financial guaranty industry has experienced healthy growth in the past few years, benefiting from investors' sensitivity to credit quality and the low interest rates that created a tremendous supply of new issues. To date, the guarantors have successfully weathered the impact of economic recession and the ongoing changes in the reinsurance industry. Going forward, improvements in the credit environment and increased competition could potentially put pressure on the industry's underwriting growth, portfolio credit quality and/or profitability. However, given the insurers' track record of prudent underwriting and risk management, we expect to see relatively consistent portfolio model results, particularly for the established companies with stable business strategies such as Ambac, FSA, MBIA, and RAM Re. Among these firms, MBIA's capital ratios should benefit from higher reinsurance cessions to Channel Re, a newly established Bermuda-based Aaa-rated reinsurer 17.4% owned by MBIA. RAM Re's capital ratios, on the other hand, may fall from the current levels as a result of the company's increased participation in a number of its treaty shares. Among the other Moody's-rated financial guarantors, FGIC, Radian and AGC are all undergoing significant changes in business strategies that may increase the likelihood for somewhat more volatile model results going forward. Relatively large changes in portfolio composition are also possible for newer primary companies such as XL, CIFG and SJFG, which are at various stages of development. These companies' portfolio characteristics and capital positions will likely continue to experience more noticeable changes as their portfolios move toward those typical for the more established companies.

Related Research

Rating Methodology:

[Moody's Rating Methodology for Financial Guaranty Insurance Companies, December 2003 \(80806\)](#)

Special Comment:

[Moody's Portfolio Risk Model for Financial Guarantors, July 2000 \(58299\)](#)

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.

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