Rating Methodology

Moody's Global Insurance

July 2008

# Moody's Global Rating Methodology for Property and Casualty Insurers

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## Summary


Globally, Moody's rates just over 400 property and casualty insurance companies, with approximately $100 billion of rated securities and over $500 billion of insurance reserve liabilities as of December 31, 2005. These ratings reflect Moody's opinions of these institutions' creditworthiness, which considers both business and financial fundamentals for each rated company. The primary purpose of this rating methodology is to enhance the transparency of Moody's rating process by identifying and discussing the key factors that explain our ratings of property and casualty insurers globally and how those key factors are used.

Because the methodology applies globally, it is necessarily general in some respects and not intended to be an exhaustive discussion of all factors that Moody's analysts consider in every property and casualty insurer's rating. Regulatory, accounting, and product characteristics can vary widely from country to country and Moody's rating approach takes account of such differences, including the financial metrics that correspond to particular rating categories. This methodology contains several sections that summarize the key differences in Moody's rating approach by region. It will be supplemented, over time, by additional clarifying methodologies focusing on local analytic factors (e.g. regulatory and accounting), as appropriate, including the top ratios used to rate companies within particular regions.


*Note: This rating methodology was originally published in September 2006 and has been updated only to reflect the addition of an appendix providing rating level guidelines and key metrics for firms active in both insurance and reinsurance. The appendix should also be read in conjunction with Moody's global rating methodology for reinsurers.*

Moody's Investors Service

# Moody's Global Rating Methodology for Property and Casualty Insurers

Moody's approach to rating the various obligations of property and casualty insurance organizations is rooted in an assessment of the financial strength of the main operating units within that organization. This methodology is, therefore, intended primarily to explain Moody's approach to assigning insurance financial strength ratings to operating insurers. Specifically, the methodology assists in developing a financial strength rating for a stand-alone entity before consideration of parental support. The methodology is also applicable to the property & casualty insurance business of composite insurers, which engage in other insurance operations in addition to property and casualty underwriting. Other ratings that may be assigned within the group (e.g., on senior unsecured debt issued by the insurer or its parent company) are typically determined with reference to the insurance financial strength ratings of the group's main subsidiaries.

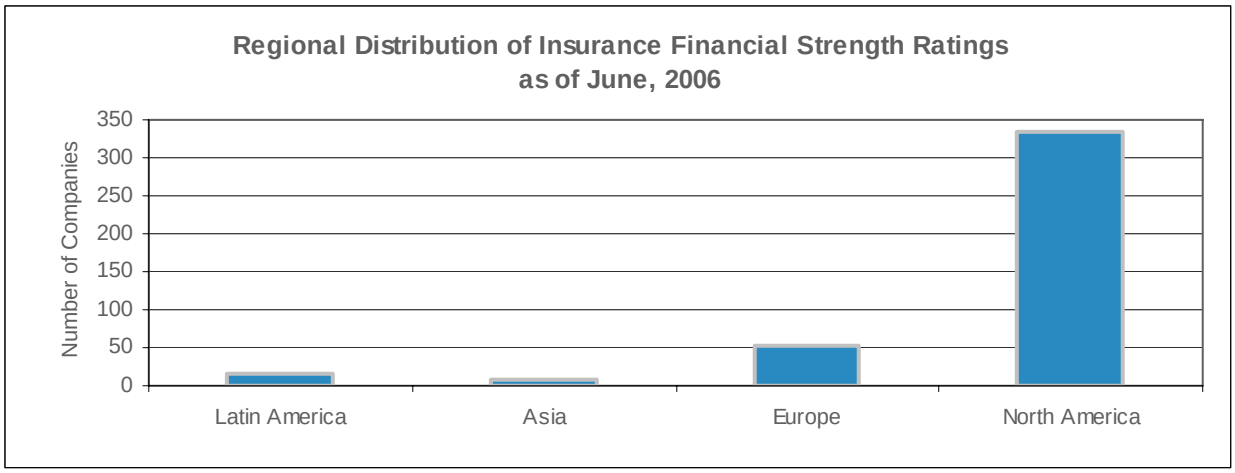
In rating property and casualty insurers on a stand-alone basis, Moody's focuses on both qualitative and quantitative characteristics in the following areas:

| Business Profile | Financial Profile |
|---|---|
| Factor 1: Market Position, Brand and Distribution | Factor 3: Asset Quality |
| Factor 2: Product Risk and Diversification | Factor 4: Capital Adequacy |
| | Factor 5: Profitability |
| | Factor 6: Reserve Adequacy |
| | Factor 7: Financial Flexibility |

## Moody's P&C Insurance Rated Universe

Globally, Moody's has assigned Insurance Financial Strength (IFS) ratings to 412 P&C insurance companies. The IFS ratings are assigned to P&C insurance operating companies and are Moody's opinions of the ability of insurance companies to repay punctually senior policyholder claims and obligations. Of the issuers in our P&C insurance portfolio, 333 (81%) are domiciled in North America, 43 (13%) in Europe, 9 (2%) in Asia, and 17 (4%) in Latin America.

P&C insurance is a highly ratings sensitive industry, and the distribution of ratings is strongly clustered in the higher investment grade rating range. The average IFS rating globally is A2. Only 15% of the total IFS ratings are rated below A and fewer than 9% are rated below Baa.



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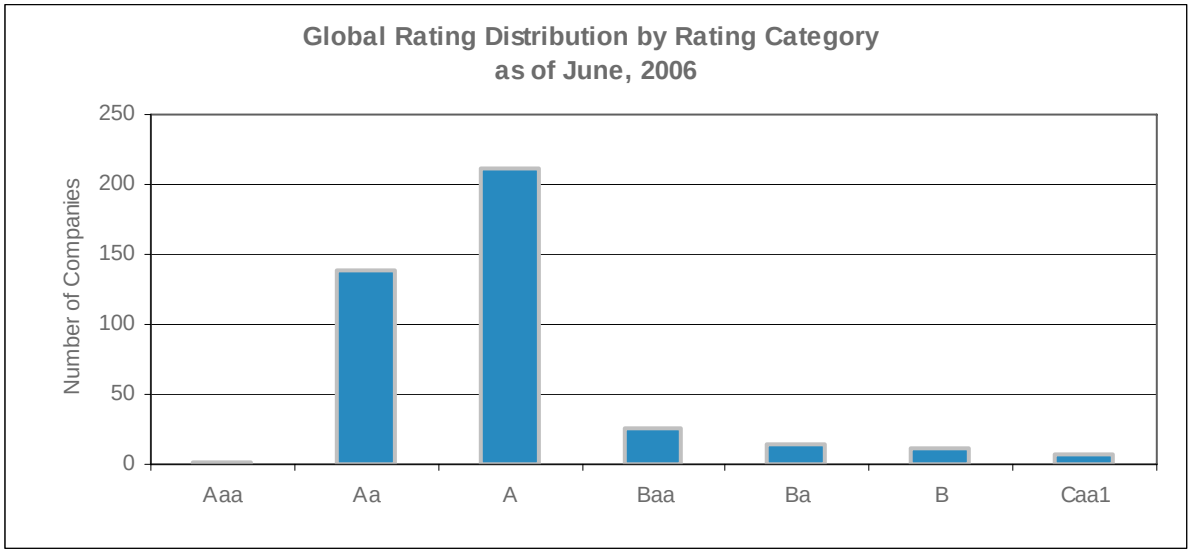


## Framework for Rating Property and Casualty Insurers

Moody's property and casualty insurance ratings reflect our opinion of long-term relative risk and are, of necessity, forward-looking in nature because they apply to liabilities that may pay out over long periods of time. Because historical experience has shown that looking only at the current financial condition of the company is not always an accurate predictor of the company's future financial performance and financial strength, Moody's analytical approach includes significant qualitative analysis in addition to quantitative analysis, and incorporates the opinions and judgments of experienced analysts.

In the following sections, we will review the seven key rating factors underlying an insurer's business and financial profile, discuss why each factor is important to our stand-alone ratings, what the relevant financial metrics are in analyzing these factors and how we interpret those metrics. Some of the factors that we consider important are clearly quantifiable, while others involve qualitative assessment. In addition, we recognize some of the quantifiable metrics are rather basic in order to facilitate accumulating and comparing the data on a global basis. In this regard, the analyst's interpretation of such metrics, as well as the consideration of regional/supplemental metrics, may also provide further insight and analysis.

For each of these factors, this methodology will outline Moody's views and expectations about how an insurer's profile would typically correspond with a given insurance financial strength rating level--Aaa through Ba. For going-concern insurers rated Ba and lower for insurance financial strength, overall country risk typically plays a dominant role in Moody's rating analysis. Analysts consider these rating level guidelines, as well as other factors such as management and governance, accounting policy and disclosure, and sovereign and regulatory considerations, when assigning ratings to insurers.

Although this methodology outlines the global framework used to rate insurance companies [1], every company's rating may not be consistent with the rating level guidelines for every rating factor. In addition, given the inherent cyclicality of the property & casualty industry, we would expect a company's financial profile to be somewhat better than the indicated rating level guidelines during cycle peaks and somewhat lower during cycle troughs (i.e. - an single A-rated insurer might be expected to perform like a low Aa-rated company at a cyclical peak and a high Baa-rated company in the trough)

However, to the extent, that an insurer is a frequent outlier for its rating category on the factors described below, then a) there is likely pressure on its rating (up or down), b) some element (or elements) of its business or financial profile is sufficiently compelling that it dominates the analysis, or c) the unique characteristics of

[1] The methodology is best applied at the analytic unit level. An analytic unit is generally all the operating companies with common analytic and credit characteristics operating in a single country or geographic region. An analytic unit could include a group of companies operating outside of a single geographic region if significant intercompany arrangements exist or there is a high degree of integration in the management, systems, distribution, etc.

the insurer's accounting, regulatory or market environment limit the comparability of certain key factors and metrics. The interpretation of how well a particular insurer fits within its rating category can be found in Moody's published research about that insurer.

The quantitative metrics used in the methodology are expected to use a consistent basis of accounting depending upon the region (Generally Accepted Accounting Principles, International Financial Reporting Standards, etc). We recognize that different accounting conventions do not necessarily always produce the same financial results, but believe that the differences, for the most part, are minimal relative to the rating ranges established. To the extent that other accounting conventions are used by a company, we may also use that accounting convention as a proxy for GAAP, with appropriate interpretation of the results.

## Rating Summary Profile

As part of the rating committee process, analysts complete a ***Rating Summary Profile*** which incorporates the analyst's opinion and judgment on each of the broad factors within the rating methodology, which may include the use of proprietary, non-public data. In general, business profile factors represent about one-third of the overall rating determination while financial profile factors represent the remaining two-thirds [2].

Analysts then complete an assessment of management, governance, and risk management; accounting policy and disclosure; sovereign and economic environment; and explicit/implicit support in order to explain the overall stand-alone and final public rating recommendation for the analytic unit. An example of a ***Rating Summary Profile*** can be found below.

[2] For a more detailed outline of the relative importance of the various factors, please refer to a review of Moody's Rating Scorecard in Appendix 1.

Moody's Global Rating Methodology for Property and Casualty Insurers

# P&C Insurance Rating Methodology
# Rating Summary Profile

Entity Name: _____

| Key Factor | Aaa | Aa | A | Baa | < Baa |
|---|---|---|---|---|---|
| Market Position, Brand and Distribution | ○ | ○ | ○ | ○ | ○ |
| Product Focus and Diversification | ○ | ○ | ○ | ○ | ○ |
| Asset Quality | ○ | ○ | ○ | ○ | ○ |
| Capital Adequacy | ○ | ○ | ○ | ○ | ○ |
| Profitability | ○ | ○ | ○ | ○ | ○ |
| Reserve Adequacy | ○ | ○ | ○ | ○ | ○ |
| Financial Flexibility | ○ | ○ | ○ | ○ | ○ |

Methodology-Implied Rating: _____

Other Considerations:

Management, Governance, and Risk Management: _____

_____

_____

Accounting Policy & Disclosure: _____

_____

_____

Sovereign & Regulatory Environment: _____

_____

_____

_____

Stand-Alone Rating Recommendation: _____

Nature and Terms of Explicit Support: _____

_____

_____

Nature and Terms of Implicit Support: _____

_____

_____

Final Rating Recommendation: _____

# Key Rating Factors - Business Profile

## Factor 1: Market Position, Brand and Distribution

### Why It Matters - Market Position and Brand:

Market position, brand, and franchise strength are key rating factors that represent a company's ability to develop and sustain competitive advantages in its chosen markets. Market position incorporates the firm's sustainable advantages in its key lines of business and considers market share; barriers to entry; scale advantages and their translation to expenses; control over pricing; and control of distribution. Additionally, a firm's brand encompasses a company's image and reputation in the market, brand recognition and perception by distributors and end-consumers, and customer loyalty as demonstrated by retention rates, distribution costs, and customer purchases of multiple products.

A company's sustainable competitive advantages--the strength of its competitive position and its prospects for internal growth--can have a direct bearing on its future profitability and ability to generate capital internally. In addition, an insurer with a strong market position, brand, and competitive advantage should be well positioned to withstand prolonged difficult market conditions and be better able to capitalize on new, potentially profitable opportunities that may develop in the future. We believe such companies are more likely to meet their obligations through varied economic periods, thus suggesting higher ratings. Conversely, a weak business franchise can indicate financial stress for a company if it generates low or erratic core profitability, and may tempt management to enter unfamiliar businesses, take on new and unfamiliar risks, or leverage the company to a greater extent.

### Relevant Financial Metrics - Market Position and Brand:

***Market share ratio (net premiums written as a % of the industry's net premiums written by country)[3]***

***Relative market share ratio (net premiums written relative to the average net premium written by country)[4]***

### Interpreting the Financial Metrics - Market Position and Brand:

We believe that an insurer's absolute and relative size within a given insurance market is highly correlated with its market position and brand. The largest companies in terms of assets, premiums, and capital within a given local region tend to be the highest rated companies. Conversely, smaller companies tend to be lower rated. Moody's notes net premiums written are highly correlated with ratings as companies with greater premium volume tend to have greater pricing power.

That said, the value of absolute size may differ based upon the lines of business a company writes. Absolute size/market share is important for companies focused on products with vast pools of similar customers, low individual exposure limits and where economies of scale are most advantageous such as personal automobile in the U.S. Offsetting the absolute size issue, is a company's ability to exercise underwriting discipline and effectively navigate the underwriting cycle on an opportunistic basis. Growth during favorable market cycles can be a positive while growth during a soft market may be a negative. Further, significant market share within a smaller niche segment may be a positive depending upon a company's approach to the business. Relative measures such as retention rates and product cross selling are also considerations.

### Why It Matters - Distribution:

The methods and mechanisms by which an insurance company delivers its products are another fundamental aspect of the company's business and credit profile. A company's access to distribution channels and its ability to control those channels and its relationship with its producers relates directly to a company's ability to grow revenues, to retain business, to align its distribution with specific product/customer segments, and to control its costs.

[3] If a single analytic unit operates in multiple countries, the ratio is a weighted average of the result by country including only those countries in which the analytic unit does a material amount of its overall business.

[4] The average net premium written is determined by dividing 90% of the industry's net premium written by the number of companies which represent 90% of industry's net premium written.

### Relevant Financial Metrics - Distribution:

***Underwriting Expenses as a % of Net Premiums Written***

### Interpreting the Financial Metrics - Distribution:

In general, efficient cost structures indicate overall management discipline. A below peer expense ratio is likely to reflect tight control over underwriting discipline, a high level of management focus, and may reflect superior technology systems that allow for greater automation. Nevertheless, this metric can be highly influenced by the insurer's chosen lines of business and we believe a relative comparison to peers is also appropriate. Highly-rated companies tend to have more opportunities to take advantage of economies of scale to differentiate them from smaller competitors.

Beyond the financial metrics, we consider the diversity in a company's distribution channels which can mitigate its dependence on specific channels and its vulnerability to sales disruption. The evaluation of a company's distribution effectiveness examines the various distribution types and assesses the suitability of each distribution channel to the kinds of products being sold in specific customer segments. The costs involved in developing and maintaining a specific distribution channel, as well as the retention and productivity of distributors, and - by extension - its ultimate customers, are key considerations in the evaluation of the channel's success.

In addition, the exclusive or non-exclusive nature of various distribution relationships may pose specific opportunities or challenges for an individual company. In some regions and for certain product lines, distribution may actually be controlled by third-party insurance brokers, which could limit an insurers' ability to conduct business on its own terms. For other insurers, particularly those using exclusive agents, the distribution system may be the group's defining competitive advantage. For still others, their distribution strategy may provide flexibility in terms of cost and business volume management.

***Summary of Relevant Financial Metrics --Market Position, Brand and Distribution***

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| Market Share Ratio | >10% | 5%-10% | 2%-5% | 1%-2% | <1% |
| Relative Market Share Ratio | >3x average | 1.5x-3x average | .5x-1.5x average | .25x-.5x average | <.25x average |
| Underwriting expenses as % of net premiums written | < 20% | 20% - 24% | 24% - 28% | 28% - 34% | > 34% |

## Factor 2: Product Risk and Diversification

### Why It Matters

A company's chosen lines of business are a major influence on its creditworthiness because individual product segments and classes of business exhibit different volatility and competitive attributes [5]. In addition, diversification in earnings, product and geography is a positive credit characteristic because it can reduce the volatility of a firm's earnings, capital, and cash flow, promoting more efficient use of capital resources. That said, if a company enters a new line of business without the appropriate underwriting expertise, diversification would be viewed as a credit negative. During a soft market, some companies "diversify," only to subsequently shed those lines of business as poor results become apparent over time. Diversification outside of P&C insurance, assuming appropriately managed, can further this benefit by countering the historically cyclical nature of P&C operating performance.

[5] Moody's recognizes that the definition of a line of business is generally subjective and varies by company and country. For purposes of this rating methodology, we have grouped various lines together and determined that, in general, only a limited number of lines of business exist. Those lines are distinct by region.

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## What We Evaluate:

### *Inherent Product Risk in the Company's Particular Business Mix*

A key objective here is to analyze the risk inherent in the company's particular business mix. Moody's considers the type of business written and notes that certain lines exhibit lower volatility than others. A concentration in more volatile lines of business would be viewed as a risk to policyholders/creditors, irrespective of the overall quality of the firm's underwriting and risk management function. Volatility is generally associated with longer tail business (e.g. casualty) than with short tail business (e.g. private passenger auto), excluding catastrophe-exposed business.

## Relevant Financial Metrics:

### *Product Diversification - absolute number of material distinct product lines*

### *Geographic diversification - absolute number of individual regulated regions without meaningful concentrations in which the analytic unit transacts business*

## Interpreting the Financial Metrics:

The evaluation of market diversity considers the breadth and depth of markets and products the company targets. The evaluation of product/market diversity (within a geographic region [6] or across different geographic regions or industries) includes an assessment of the concentration and competition in the product/market; correlation of revenues and earnings of different markets and products; and whether the product is viewed as a commodity or a value-added offering. Analysts' judgment is particularly important in assessing diversification within product lines given that the types of product offerings can vary significantly across the globe.

Regulatory diversification tries to capture the extent of regulatory risk faced by a company. Diversification of revenues in and of itself is not a positive factor if profits are also not diversified or if geographic diversification comes in regions which are overly restrictive in terms of pricing controls or capital measures. Moody's separately considers the underwriting risk associated with geographic concentrations in the evaluation of risk management.

Beyond the financial metrics, we also consider a company's underwriting controls, pricing sophistication, staff, and technology in the context of the company's chosen lines of business. We also consider whether the analytic unit has operations outside of property & casualty insurance which may enhance diversification. As such, we also consider the quality of diversification; the company's ability to manage diverse businesses unrelated to the core; the synergies or lack thereof among diversified businesses; and the degree to which diversified businesses detract from a focus on the core or add value to the enterprise as a whole.

[6] For purposes of the methodology, a geographic region is generally considered to be any market with a single regulator.

Moody's Global Rating Methodology for Property and Casualty Insurers

***Summary of Relevant Financial Metrics -Product Focus and Diversification***

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| **Product Risk** | Very granular exposures; short-tail lines; very low risk of estimating ultimate claim costs | Granular exposures; short- and medium-tailed lines represent more than 2/3rd of premiums; generally moderate risk of estimating ultimate claim costs, but may have manageable property catastrophe risk | Policies may have high gross limits relative to equity; risk of estimating ultimate claim costs is meaningful; longer-tailed lines may represent more than 1/3rd of premiums; manageable catastrophe risk may be present in either casualty or property exposures | Longer-tailed lines are majority of premiums and/or policies have high gross limits relative to equity; risk of estimating ultimate claim cost may be significant; significant catastrophe risk may be present in either casualty or property exposures | Combination of size of in-force portfolio and size of individual policies limits application of "law of large numbers"; claim cost estimation risk is high; catastrophe risk is substantial |
| **Product Diversification** | 5 or more distinct lines of business each produce at least 10% of total net P&C premiums written | 4 distinct lines of business each produce at least 10% of total net P&C premiums written | 3 distinct lines of business each produce at least 10% of total net P&C premiums written | 2 distinct lines of business each produce at least 10% of total net P&C premiums written | 1 distinct line of business produces more than 90% of total net P&C premiums written |
| **Regulatory Diversification** | No single regulated region generates more than 10% of total net P&C premiums written | No single regulated region generates more than 20% of total net P&C premiums written | No single regulated region generates more than 30% of total net P&C premiums written | No single regulated region generates more than 40% of total net P&C premiums written | One regulated region generates more than 40% of total net P&C premiums written |

# Key Rating Factors - Financial Profile

## Factor 3: Asset Risk

### Why It Matters-High Risk Assets:

P&C insurance companies' core assets are typically concentrated in high quality liquid assets in recognition of the uncertainty of their liability payout stream, both as to timing and amount. In many cases, however, companies will allocate a portion of their investment portfolios to higher risk assets. It is important to monitor risky asset exposures on an ongoing basis, because changes in the market environment, especially during periods of stress, can depress asset values, earnings, and ultimately, the company's capital base.

### Relevant Financial Metric-High Risk Assets:

***High risk assets as % of total invested assets***

### Interpreting the Financial Metric-High Risk Assets:

High-risk assets include below-investment-grade bonds/loans, common stock equities (broadly defined to include "alternative investments"), and real estate assets. High-risk assets carry a combination of increased risks including default, liquidity, and price volatility.

Higher-rated companies generally have lower exposure to high-risk assets. However, companies that have strong and stable operational performance will be able to tolerate a higher proportion of these assets in their investment portfolios. For such companies to maintain high ratings, it would be expected that they have solid

capital positions and a stable earnings profile, as well as strong track records and proven expertise in managing more risky asset classes.

Beyond this single metric, we also consider matters such as investment concentration risk. Excessive concentrations in a single name or sector raise questions about market and credit risk, liquidity, and the sustainability of historical investment returns. We also consider the liquidity and volatility of the investment portfolio and the strategy employed by the company.

### Why It Matters--Reinsurance Recoverables:

A significant asset of uncertain value on the balance sheet of P&C insurers is recoverables/receivables from reinsurers. The extent to which P&C insurers use reinsurance and are dependent on it varies significantly by region and by line of business. Some insurers are "gross line" underwriters, placing little reliance on reinsurance parties; while others manage their risk exposure through the extensive use of reinsurance. The analysis of the amount of a company's reinsurance recoverables, its concentrated reliance on a few reinsurers, and the credit quality of the individual reinsurers is important because write-offs of the recoverables as uncollectible could impact the insurer's income and capital, and because the loss of reinsurance capacity could require the insurer to modify its market/product focus.

### Relevant Financial Metric-Reinsurance Recoverables:

***Reinsurance recoverables as % of shareholders' equity***

### Interpreting the Financial Metric- Reinsurance Recoverables:

Higher-rated companies tend to have lower amounts due from reinsurers, although the company's market/product focus significantly influences a company's use of reinsurance. For example, due to different exposure profiles, personal lines carriers generally use significantly less reinsurance (except for their catastrophe covers) than do commercial lines carriers. In addition to evaluating a company's reinsurance exposure ratio, Moody's also reviews a company's reinsurance program including coverage placed, terms and conditions, and the credit quality and collateral of its reinsurance counterparties. Our analysis focuses on the most significant reinsurance collectibles as well as to those reinsurers where significant future exposure may arise. Moody's evaluates the creditworthiness of reinsurers by: 1) considering their insurance financial strength ratings; 2) evaluating the ceding company's reinsurance surveillance practices, 3) considering prior payment experience, and 4) evaluating offsets, letters of credit, trust funds, and other features that improve the ceding insurer's position.

### Why It Matters-Goodwill:

Another potentially significant asset of uncertain value on the balance sheet of insurers is the goodwill associated with acquisitions. Within the property and casualty markets, acquisitions of commercial insurance and reinsurance firms have generally met with limited success. In the late 1990s, a number of companies acquired businesses only to find out later that balance sheet capital was overstated, as reserves were typically understated - often by substantial amounts. Goodwill is an asset whose economic value is often highly uncertain and not readily realizable.

### Relevant Financial Metric-Goodwill:

***Goodwill as % of shareholders' equity***

### Interpreting the Financial Metric -Goodwill:

This measure provides an indication of the strength and quality of a company's equity capital base. Higher rated companies tend to have lower amounts of goodwill relative to their equity base compared to lower rated companies. Extensive growth through acquisitions usually elevates the credit risk of a group because of the integration challenges and the uncertainty about the ultimate costs and benefits, as well as incremental earnings, to be realized from the acquisition in the context of the purchase price and financing.

We assess acquisitions for strategic fit and consider implications to the company's market position and overall diversification. However, in the property and casualty sector, acquisitions have often been problematic for

issuers, and we tend to have a negative view given that a number of failures have been caused by acquisitions.

### *Summary of Relevant Financial Metric--Asset Quality*

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| High Risk Assets as % of Invested Assets | < 10% | 10% - 20% | 20% - 30% | 30% - 40% | > 40% |
| Reinsurance Recoverables as % of Equity | < 35% | 35% - 70% | 70% - 100% | 100% - 150% | > 150% |
| Goodwill as % of Equity | <15% | 15% - 25% | 25% - 35% | 35% - 50% | > 50% |

## Factor 4: Capital Adequacy

### Why It Matters:

At the heart of Moody's assessment of an insurer's creditworthiness is an opinion about the company's economic capital and its capital adequacy (e.g. solvency) or operational leverage. Economic capital is the cushion available to the insurer to absorb unfavorable deviations in its results. Capital adequacy measures a company's leverage in terms of business volume generated and its risks relative to the company's capital. Capital adequacy is critically important for an insurer because insurance regulators require minimum capital levels or ratios in order for the company to continue to operate. Capital constraints can also negatively impact a company's ability to grow its business and impact its strategy.

### Relevant Financial Metrics:

***Global - Gross Underwriting Leverage-gross written premiums plus gross reserves divided by shareholders' equity***

***Regional - Moody's internally-developed capital model or reported (or adjusted) capital measure developed by regional regulator***

### Interpreting the Financial Metrics:

In general, the higher a company's gross underwriting leverage, the more risk it is assuming and the greater the impact on its capital position from variations in actual performance. The concept of gross underwriting leverage is sufficiently broad to allow Moody's to evaluate an insurer's use of reinsurance to determine the degree to which the company relies on it for leverage. Higher rated insurers tend to have lower gross underwriting leverage than lower rated companies.

With advances in economic capital models, gross underwriting leverage is a rather blunt measure which necessitates further analysis of a company's mix of business and rate driven volume changes; as a result, it is most useful when comparing companies that have a similar business mix. Other meaningful influences on gross underwriting leverage include the duration of liabilities and an assessment on a company's payout patterns.

In several regions, additional capital metrics are also included to supplement gross underwriting leverage. These metrics may be developed internally by Moody's or are calculated under existing regulatory models. See Appendix 2 for a discussion of regional capital measures.

### *Summary of Relevant Financial Metrics--Capital Adequacy*

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| Gross Underwriting Leverage | <2x | 2x - 3x | 3x - 5x | 5x - 7x | >7x |

## Factor 5: Profitability

### Why It Matters:

An insurer's earnings capacity--quality and sustainability--is a critical component of its creditworthiness because earnings are a primary determinant of the insurer's ability to meet its policy and financial obligations, the primary source of internal capital generation to assure capital adequacy, and a key determinant of access to the capital markets on favorable terms. Diversification across multiple product lines and markets can result in more stable levels of earnings, increasing the predictability of internal capital growth and strengthening claims/debt paying ability.

### Relevant Financial Metrics:

***Return on Equity (ROE)-Net income as a % of average shareholders' equity (5 year average)***

***Sharpe Ratio of Growth in Net income-Absolute value of the mean of the company's growth in annual net income divided by the standard deviation of growth in net income (5 year period)***[7]

### Interpreting the Financial Metrics:

In general, higher rated companies tend to have higher profitability as measured by ROE and have less earnings volatility than lower rated companies.

The ROE ratio is a good measure of how well the insurer is utilizing its capital funds. Although creditors rank ahead of shareholders in insolvency, one cannot ignore the impact of shareholder pressure on management to generate sufficient returns on invested capital. This is especially the case as the forces of return and capital adequacy sometimes compete against each other such as when capital cushions that support high ratings may suppress the return on equity. Therefore, ROE must be viewed in concert with both a company's financial leverage and organizational/legal structure. The relationship to financial leverage is important because companies utilizing higher amounts of leverage may exhibit more favorable ROE, as a smaller equity base tends to improve this measure, all else being equal. Also the type of organization may influence expected ROE as mutual insurers tend to have different return objectives than stock companies.

Management's response to shareholder pressures to improve ROE could be to lower the "E" rather than increase the "R". For these reasons, Return on Revenue (ROR) can be another useful comparative measure of profitability, as it is less influenced by a company's financial leverage policy or its capital adequacy. The ROR metric over time is generally a good indicator of an insurer's underwriting skill and pricing discipline relative to its peers while also capturing investment performance.

We also consider that net income can be meaningfully influenced by non-recurring favorable items, most notably realized gains. For analytic units with meaningful investment-related gains, we also consider these ratios excluding such gains.

The Sharpe Ratio of growth in net income gauges the inherent volatility in a company's earnings and helps us to formulate an opinion about the predictability and sustainability of a company's earnings. The ratio considers net income since a company's internal capital generation is driven by its net income but we recognize that some capital gains/losses and taxes can at times be somewhat volatile and unpredictable or at other times used to reduce underlying operational volatility. This ratio's analytic value has little meaning on its own but is most useful in comparing companies' earnings volatility to each other and in identifying trends relative to business mix.

We use five years worth of data in these ratios to attempt to "see through" the natural cycles of the business.

[7] If an analytic unit has reported a net loss in any of the past six calendar years, the ratio is not calculated and the analytic unit is automatically placed in the Ba rating category.

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***Summary of Relevant Financial Metrics--Profitability***

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| Return on Equity | >15% | 10% - 15% | 5% - 10% | 0% - 5% | <0% |
| Sharpe Ratio of Growth in Net Income | >100% | 100% - 67% | 67% - 33% | 33% - 0% | <0% |

## Factor 6--Reserve Adequacy

### Why It Matters:

Inadequate loss reserves have been a contributing, if not the primary, cause of most P&C insurance company failures over the past decade. Given the broad accounting latitude endemic to the insurance business, the importance of credible loss reserves can not be over-emphasized. The evaluation of redundancy or deficiency in an insurer's loss and loss adjustment reserves impacts the analysis of its reported earnings as well as the assessment of capital adequacy. When P&C insurers' loss reserves develop unfavorably, the impact on the company's financial profile and flexibility can be material as seen by the decrease in capital, the increased operating and financial leverage ratios, and reduced dividend-paying capacity to the holding company.

### Relevant Financial Metrics:

***Loss Reserve Development-1-year loss reserve development as % of reserves (5 year average)***

***A&E Funding Ratio- Asbestos and environmental net reserves as a multiple of the average payments for the last 5 years***

### Interpreting the Financial Metrics:

Given that insurers do not know the cost of their product until after it has been sold - often long after it has been sold - strong underwriting skills and a stable track record is a significant differentiator between highly-rated and lower-rated companies. Consequently, the premium rate monitoring, underwriting, and claims handling processes are critical areas to be reviewed and evaluated. Moody's evaluates these areas, first, by reviewing past underwriting results (usually in connection with reserve adequacy analysis) and, second, by reviewing current underwriting practices that will impact future profitability levels.

Many of the reserve analysis techniques used by Moody's are necessarily complex and at times involve our own actuarial analysis, review of third-party reserve analysis, and consideration of disclosures regarding carried reserves within an actuarially determined range of reasonable estimates. However, we also find that a simple review of prior year reserve development--defined as the past year's loss reserve development as a percentage of prior year reserves, shareholders' equity or premiums--usually provides broad corroboration of the more detailed analysis. Highly-rated companies tend to have less adverse reserve development than lower-rated companies. That said, we also consider the cause of adverse development and attempt to consider past development in light of our current assessment of reserve adequacy.

Where applicable, we also try to assess adequacy of core reserves separate from reserves associated with latent liabilities (primarily asbestos and environmental liabilities) which tend to not lend themselves to traditional actuarial analysis. While a variety of techniques are used to assess reserve adequacy in this area, Moody's considers a funding ratio to be a good measure to gauge the relative sufficiency of A&E reserves despite the fact that a company's claims practices, historic market share and product mix, and single large payments can distort this rather blunt measure.

### *Summary of Relevant Financial Metrics-Reserve Adequacy*

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| Loss Reserve Development as % of Reserves | < 0% | 0% - 2% | 2% - 5% | 5% - 7% | > 7% |
| A&E Funding Ratio[8] | >15x or not applicable | 12x - 15x | 10x - 12x | 8x - 10x | <8x |

## Factor 7: Financial Flexibility

### Why It Matters

It is important that a company is able not only to fund its business growth via internal capital generation, but also to demonstrate the ability to service its obligations without stress. Insurers benefit from having the capacity to raise capital externally for additional growth or acquisitions, and to meet unexpected financial demands whether those come from an unusually negative credit/market environment, earnings volatility, or other planned or unplanned capital needs. Financial flexibility-as dictated by financial leverage/double leverage, earnings coverage, dividend coverage, and access to capital markets -is a key determinant of the insurer's credit profile.

### Relevant Financial Metrics[9] :

***Financial Leverage: Adjusted debt divided by (adjusted debt + adjusted equity)***

***Earnings Coverage: Adjusted Earnings before interest and taxes divided by interest expense and preferred dividends (5 year average)***

***Cash Flow Coverage: Dividend capacity from subsidiaries divided by interest expense and preferred dividends (5 year average).***

### Interpreting the Financial Metrics:

Financial leverage measures the amount of a company's capital base that is financed through borrowed money, typically short and long-term debt and hybrid capital securities, which can be issued at an operating company or holding company. The calculation considers all forms of debt (including surplus notes and hybrid securities--adjusted for Moody's Debt/Equity Continuum--plus unfunded pension obligations and operating leases) used to fund the company's operations as leverage. In general, higher-rated insurers tend to have lower levels of financial leverage than their lower-rated peers.

In addition to Moody's standard adjustments to financial leverage and earnings coverage, additional adjustments to these metrics are sometimes necessary for individual companies. For example, an adjustment may include adding back as debt an off-balance sheet obligation because we believe the company will support the debt obligation, if necessary, because of reputation or economic incentives. In contrast, match-funded or self-liquidating debt appearing on a company's balance sheet is likely to be excluded from financial leverage and earnings/cash flow coverage metrics because the debt is analytically viewed as operating debt instead of financial debt.

Other considerations incorporated into our opinions around financial leverage include--where applicable--a company's double leverage (ie - investments in subsidiaries funded by parent company debt or a stacked ownership structure), historic trends, management's target level for leverage relative to current position, and maturity profile, as well as the complexity of the capital structure itself.

The debt capacity of an insurer is also defined by its earnings capacity and dividend capacity relative to interest expense and preferred dividends, although there can be substantial variability in these figures from

[8] Calculated when A&E reserves or exposures are material.

[9] Unlike most of the other financial metrics discussed in the methodology which are calculated at the analytic unit level, the leverage and coverage ratios have been calculated at the ultimate parent level, which may differ from the analytic unit being evaluated. Moody's believes that many companies consider their capital to be fungible and therefore assumes that the financial leverage profile of the parent would be consistent with that of the analytic unit.

year to year. Higher-rated insurers tend to have better earnings and cash flow coverage metrics than lower-rated companies.

The earnings coverage ratio is calculated on a consolidated basis (US GAAP, IFRS, or equivalent) and considers consolidated earnings (pre-tax, pre-interest expense and preferred dividend coverage of consolidated interest expense and preferred dividends). The focus is on coverage of interest expense and preferred dividends although the numerator and denominator is also adjusted for pensions and leases. Because there can be regulatory restrictions on dividend capacity from an operating company to its holding company, the earnings coverage ratio must be evaluated in the context of the insurer's actual flexibility in terms of cash available to be sent up to the holding company.

The cash flow coverage ratio--which can not be calculated in all jurisdictions due to varying disclosures--looks specifically at the flexibility of the parent holding company, which frequently is the issuer of debt and/or hybrid securities.[10] The ratio relates the recurring sources of cash to the holding company to its uses of cash. For cash sources, we include the maximum allowable dividend (unrestricted) from regulated subsidiaries (subject to the condition that capital adequacy is maintained at the operating company). For cash uses, we include interest expense and preferred dividends at the holding company.

When analyzing the coverage ratios, we generally consider any differences that may exist between interest expense and the cash payments associated with interest. We also assess the interrelationship between cash flow coverage and earnings coverage by considering whether material earnings are generated in regions where dividend extraction is more difficult, if the parent has meaningful and consistent sources of cash flow from unregulated entities, and the relative levels of dividend capacity compared to earning capacity. In instances where dividend capacity significantly exceeds earnings capacity, this may indicate dividend capacity is unlikely to be replenished should a significant dividend be made.

We also recognize that it is important for a company to maintain capital market confidence. It has been frequently observed that ready-access to the capital markets is necessary for many insurers in the case of needing to raise capital after a severe unexpected event, to fund an acquisition, or simply to expand internal growth plans. The inability to access the capital markets at all, or on attractive terms, can significantly impair a company's financial flexibility in the event of a liquidity crisis or the need to rebuild its capital base. As a result, Moody's views P&C insurers' access to the capital markets - which can be limited by outsized financial leverage or poor coverage - as important given the inherent volatility of the business.

We additionally consider a company's back up facilities and letter of credit arrangements and the conservatism of covenants embedded in all borrowing arrangements. Strong back-up facilities with limited restrictive covenants are considered to enhance financial flexibility for a company, particularly in times of stress.

### *Summary of Relevant Financial Metrics-Financial Flexibility*

| | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| Financial Leverage | < 20% | 20% - 30% | 30% - 40% | 40% - 50% | > 50% |
| Cash Flow Coverage-- Dividend capacity/interest + pref div | > 7x | 5x - 7x | 3x - 5x | 1.5x - 3x | < 1.5x |
| Earnings Coverage--EBIT/ int exp + pref div | > 12x | 8x - 12x | 4x - 8x | 2x - 4x | < 2x |

[10] See "Relationship between Insurance Financial Strength and Other Ratings" beginning on page 20 for more information.

# Other Considerations in Determining Stand-Alone Rating

## Management, Governance, and Risk Management

### Management Characteristics:

Management quality underpins corporate success or failure, and is a major factor in determining ratings. We assess management's credibility, experience, and reliability. Management's ability to develop a strategic vision and its ability to execute that vision are critical factors for a company's success in a competitive industry where the status quo is changing rapidly. A review of the insurer's strategy includes the firm's long-term vision, risk-return appetite, attitude towards financial and operating leverage, strategies for raising capital, and view of shareholder value creation. Growth strategies--acquisitions/divestitures, joint ventures/strategic alliances, etc.--can also impact its risk profile.

The overall risk culture that management has built will strongly affect the company's appetite for and management of risk and leverage. As a result, management's strength, its discipline in financial planning and risk management, and its ability to execute are vital elements in our evaluation of credit risk.

Assessing management quality involves examining the experience, track record, and success of management, demonstrated by its ability to sustain a company's franchise, earnings, and capital position, by the absence of one time financial events, by the avoidance of frequent changes in strategy, and by the organization's financial and business flexibility. We consider its management depth as well as its financial track record in such areas as reserves, investments, profitability, and risk management. Management's strategy, as measured by overall growth or new business development, also plays an important role in our opinion of an insurer's credit profile. Throughout the rating process, Moody's forms an opinion of a management team's likely response to challenges in the firm's economic, competitive and regulatory environment given their goals and motivations.

### Corporate Governance

Corporate governance as promoted by the board of directors, as the natural counterpart to management, is equally responsible for the financial health and credit profile of the company. Depth of corporate governance is evaluated by the corporate board's independence, expertise, and involvement, as well as its ability to align governance practices with proper oversight of the management team and corporate strategy. Independent review of the key financial reporting and risk management processes is important, as is oversight of compliance and regulatory issues. The board plays a central role in ensuring management sets the appropriate ethical tone within the company. Compensation schemes and the board's oversight of compensation practices are also considered for their potential impact on management's motivations. Plans that reward management and employees for building long-term value in the company tend to be viewed positively from a credit perspective.

Moody's also contemplates the interests, motivations, track-record, and resources of large shareholders in order to anticipate how they may be expected to behave and respond with regards to their investment, both in the normal course of events and in times of stress. The often conflicting interests of shareholders and policyholders are also taken into account when considering an insurer's governance, in terms of how the board and management team balances these demands.

In this regard, Moody's believes that there is a natural and effective alignment between the interests of managers and directors with policyholders and creditors at a mutual insurer, compared to the case with a public-stock company, where shareholders can pressure the managers for payouts and shorter-term results. However, drawbacks associated with the mutual structure often include less management accountability and transparency. The latter concern becomes significant when the mutual has adopted an aggressive strategy that is more characteristic of a stock company.

### Risk Management

Management's and the board's ability to identify, monitor, manage, and mitigate its risks goes to the heart of a company's success in minimizing unexpected events and volatility and in protecting the interests of its policyholders and other stakeholders. Taking risks, whether in underwriting, investments, sales practices, acquisitions, or other areas, is a necessary activity for an insurance company. However, it is vitally important that management (and the board of directors) understand the risks assumed and engage in active measures to manage those risks in order for the company to maintain its financial performance and flexibility, reputation, market position, and confidence in the capital markets. The risk management discipline at an insurer is an essential part of its overall governance and management.

### What We Evaluate Related to Management, Governance, and Risk Management:

Given all the various inputs, the influence from management and governance on ratings is subjective. That said, Moody's has a general presumption that management is competent and governance and risk management protocol and procedures are appropriately designed and working. Moody's typically meets annually with members of management, and at times board members, in order to assess this important area. As noted in recently published research [11], corporate governance does not typically affect ratings, except in rare situations.

In the area of risk management, Moody's has long considered catastrophe risk management - both natural and man-made - to be the most significant and volatile risk to capital over the short term. Our analysis assesses a company's risk appetite and its ability to monitor and manage its risk exposures and also considers its reliance on reinsurance as a risk management tool. We evaluate catastrophe risk, both gross and net, relative to earnings and capitalization. We incorporate the views of the company's third-party vendor models, internal surveys, relative market share analysis, and stress case scenarios.

## Accounting Policy & Disclosure

Relevant and timely financial information is a critical part of any financial analysis. Many insurers prepare financial information under generally accepted accounting principles either developed by their home country or based on international standards. Financial information is also generally prepared on a regulatory basis of accounting which may differ from generally accepted accounting principles. The presence of a strong government/independent body for financial standards is considered a positive factor when evaluating an accounting regime.

Disclosure of financial information varies widely on a global basis and within regions. In certain locations, regulatory bodies provide access to financial information, although the depth of that information also varies. Some companies have chosen to provide easy access to there own financial data which Moody's view favorably.

The consistent application of financial information is a fundamental presumption of financial analysis. When evaluating accounting principles, we consider how well financial reporting mirrors economic reality. Where we believe the economics of a transaction are not consistent with financial reporting, we may adjust financial statements to facilitate our analysis.

## Sovereign and Regulatory Environment

The local jurisdiction's economic and political stability and the degree of government support/interference can have a strong impact--either positive or negative--on the credit profile of an insurance company. The presence of a well-developed local capital market may determine a company's ability to raise sufficient capital efficiently to grow or cushion itself against adverse financial conditions.

[11] See Moody's Special Comment: Assessing Corporate Governance As A Ratings Driver For North American Financial Institutions, April, 2006 (#97279) for further information.

The insurer's credit profile is influenced by the regulatory rules and practices within its market, as well as potential changes in regulations or taxation of its products that could affect an insurer's competitive position, or could lead to a restructuring of segments of the industry. The failure-resolution mechanism and practices of the regulatory authorities can also impact an insurer's default rate and loss given default.

Measurement of a company's sovereign and regulatory environment incorporates the use of Moody's Foreign Currency Country Ceiling as well as Moody's Local Currency Guideline. The local currency guideline reflects our view of the country's political, economic and regulatory stability. We focus on Moody's Local Currency Guideline for the insurer's primary market as this guideline generally sets the ceiling for the most financial secure company in a given region.

## Moving From Stand-Alone Rating to Public Rating-Evaluating Support

While the above factors are critical in order to determine the stand-alone rating of P&C insurers, the analytic consideration of support-explicit or implicit-from a parent company or affiliate is necessary to get to the public rating, which is usually higher than the company's stand-alone rating.

### Support from a Parent Company or Affiliate

The credit rating of an insurer can ultimately be affected by its relationship to its parent, to a subsidiary, or to affiliate companies through either explicit or implicit support [12]. Support, once determined, is then generally "added to" the rating by narrowing the spread between the stand-alone credit rating of the entity/security and the rating of the entity providing the support.

Ultimately, the extent to which the affiliation benefits the rating is a matter of judgment, not convention, owing to the large number of variables that must be considered. Our assessment of this support may vary depending on our view of how important that entity is to the overall enterprise business model, its integration with the rest of the organization from a branding, management, distribution, and operating perspective, as well as our view of the company's ability and willingness to support that entity. Support is evaluated in terms of past actions of the supporter as well as current public statements of support.

In all cases, Moody's judgment about how the prospective supporting entity is likely to behave in the future is strongly influenced by our assessment of its prospective economic motivations. Accordingly, strong public statements of support would not be persuasive in raising the rating of a weaker subsidiary if a sound economic rationale for doing so was missing. Although support may raise a company's rating, it may not necessarily raise it to the same level as that of the supporting entity.

While, in most instances, support is incrementally positive, there are instances where group affiliation may constrain the public rating of an entity/security relative to its stand-alone rating level. For example, if the insurer is affiliated with weak or highly-leveraged entities, such weaknesses usually, in turn, weaken the insurer. History has shown that capital often flows from stronger to weaker companies within a controlled group, and frequently before regulatory action can occur.

Explicit support is usually intended to transfer the credit of the supporting entity to the supported affiliate or obligation. Explicit support is generally in the form of a capital maintenance agreement, minimum net worth agreement, or some type of direct guarantee. It can also take the form of management contracts, marketing arrangements, reinsurance agreements, or tax-sharing agreements. Specific to property and casualty insurers are pooling arrangements whereby several members of the group share in the combined results of each individual company on a preset basis. In general, Moody's rates the members of a property and casualty pooling arrangement at the same rating level.

In analyzing this type of explicit support, we examine the specific legal nature and enforceability of the support, as well as its possible termination. Explicit support, properly structured, can achieve credit transference and

[12] For additional discussion of Moody's rating policy related to support, please see Rating Non-Guaranteed Subsidiaries: Credit Considerations in Assigning Subsidiary Ratings In the Absence of Legally Binding Parental Support, December, 2003. In addition, affiliate companies generally refer to companies outside of the analytic unit being rated.

bring the affiliate's rating up to that of the supporting entity. However, it is also necessary to make an assessment as to whether the extension of this support (as well as with implicit support) will weaken the credit profile of the parent or affiliate and result in a downgrade of the supporting entity.

### Factoring in Support from Other Than Related Entities

Moody's does not ascribe a meaningful level of implicit support to insurance companies from their governments. Indeed, past history has shown that insurers - even large ones - have been allowed by local and national governments to fail without intervention. If the insurer were directly owned by the government, however, support would be considered according to Moody's methodology on "The Application of Joint Default Analysis to Government Related Issuers (April 2005)".

Finally, if the insurer is part of a bancassurance group, and there is clear evidence that failure of the insurer will have negative implications on the creditworthiness of banking operations, the likelihood of support by the government may increase. However, we expect such support to be highly selective and focused on limiting any damage to the bank franchise.

## Regional Analytic Considerations

Moody's employs the same analytic approach to evaluating P&C insurance companies worldwide, incorporating the business and financial profile dimensions discussed in this methodology. However, each of the various regions has its own market nuances which reflect the local political, social and economic climates. These include the regulatory environment, governance and capital structures, taxation, accounting rules and public reporting requirements, and laws and the litigation environment. Moody's incorporates these regional factors into its rating process.

### North America

In the United States, property and casualty insurance companies are required to provide a substantial amount of detailed financial information to state regulators. This financial information is prepared under Statutory Accounting Principles (SAP), which are the accounting practices and procedures developed by the National Association of Insurance Commissioners (NAIC) and adopted by each state through its legislative or rule-making process.

Financial information is also prepared under general accepted accounting principles (GAAP) for publicly-traded companies and by some mutuals. Based upon both statutory and GAAP financial information, Moody's annually publishes its "Top Ten Ratios" by rating category for U.S. primary insurance companies[13] .

For U.S.-rated companies, Moody's also evaluates a separate capital adequacy model, Moody's Risk Adjusted Capital (MRAC) Model. For additional information, please refer to "Moody's Risk Adjusted Capital Model" published in September, 2004 and Appendix 2.
Lastly, for the past several years in North America, Moody's analytical teams have produced reports that discuss both U.S. financial reporting and corporate governance [14]. These research pieces provide additional insight into our rating process.

### Europe

Unlike in the U.S., many European insurance groups are composites, i.e. writing both life and P&C business. While in virtually all European countries, life business can only be written out of a distinct legal entity solely dedicated to that purpose, there is no such restriction on P&C business (the P&C carriers only have to be licensed). As a result, it is not uncommon for the ultimate holding company to be the main P&C operating company but at the same time have smaller, usually international, P&C subsidiaries. These complicated ownership structures usually necessitate a higher degree of reliance on consolidated financial statements for credit analysis.

[13] For additional information, please refer to "North American P&C Insurance Top Ten Ratios 2004 Update" published in December 2005.
[14] Please refer to "No Assurance of Good Governance: Observations on Corporate Governance in the U.S. Insurance Sector" published in October 2005.

A distinctive feature of the European regulatory and reporting environment is its significant variability by jurisdiction.

As far as insurance supervision is concerned, there are two major factors to consider: (1) quality of supervision and (2) adequacy of regulatory capital requirements. Quality of supervision varies greatly, with the UK, the Netherlands and Nordic countries ranking highest in Moody's view and southern and eastern European countries lowest. Absence of a credible regulator is viewed by Moody's as a negative rating factor.

Currently, regulatory capital requirements across Europe are calculated on a deterministic, or formulaic basis (known as EU Solvency). Although the resulting capital requirement is consistent, it is not always meaningful, since the underlying formula does not capture well the full range of insurance risks. Some territories (such as the UK, the Netherlands and, to some extent, Switzerland) are in the process of implementing stochastic capital requirements, which may lead to higher required capital levels for P&C insurers in the future. However, the implementation of new requirements (frequently referred to as Solvency II) is likely to be implemented simultaneously by all EU members no earlier than 2010.

Availability and comparability of financial information in Europe presents another analytical challenge. While most (but not all) publicly-traded insurers in Europe now present their financial statements under IFRS, operating companies still report under local GAAP accounting, rendering their financial metrics less useful in cross-regional comparisons.

## Latin America

As in Europe, statutory financial information for Latin American insurers is usually presented on a national GAAP accounting basis, rather than according to a separate regime for insurance accounting and can vary from country to country. Key financial metrics, however, tend to exclude holding company consolidated financial information because of the scarcity of publicly-held concerns and limited debt issuance.

One very significant risk consideration in Latin America is the low average sovereign credit profile in that region (among the major Latin American economics, only Mexico and Chile currently maintain investment-grade sovereign ratings). That results in the high concentration of non-investment-grade holdings (particularly national debt obligations) in insurers' investment portfolios. In some cases - such as Argentina in recent years - these bonds may be in or near default, or may have restructured terms, thereby greatly influencing the insurer's credit profile, regardless of its perceived franchise strength in other respects.

Finally, because of the preponderance of bank-owned insurers in countries such as Brazil and Mexico, Moody's considers the credit profile of the insurer in the context of its implied support and strategic fit within its overall organization, as well as the bank's own credit profile, as an indicator of commitment to financial responsibility and potential capital needs at the insurer.

## Asia

The Asian insurance markets are at varying stages of development, as measured in terms of composition and structure, type and complexity of products, the extent of liberalization and competition. Most Asian markets prepare timely financial statements based on local GAAP requirements as well as statutory insurance accounting regimes. However, these are not readily accessible in the public domain. These markets generally strive to align their local GAAP to international accounting standards as closely as possible and practicable.

Several more-developed markets, such as Australia, Japan, Singapore and Taiwan, have already introduced or are in the process of adopting risk-based capital regulatory regimes, which relate the minimum capital requirement of an insurer to its type of business and risk profile. On the other hand, simple solvency regimes are typically in place for less-developed insurance markets, but we expect these markets to make continued progress towards more robust risk-based capital regimes.

Moody's also notes several distinct characteristics within the Asian markets that play an important part in shaping the way insurers manage their investments and capital. First, there is generally a lack of depth in the local bond markets in most Asian countries, which has implications for the asset liability matching of individual

companies. Secondly, there is a limited level of debt issuance by Asian insurers. This may give insurers relatively more financial flexibility given the lack of committed debt-related interest payments/obligations.

Finally, there is an increasing trend in several more-developed markets such as Taiwan and Australia for insurers to operate as part of a diversified financial services group, comprising banking, insurance, and fund management operations. Moody's considers the credit profile of the insurer in the context of its strategic fit within the overall organization, as well as potential capital demands on the insurer or support to the insurer from the group.

# Relationship Between Insurance Financial Strength and Other Ratings

## Insurance Financial Strength and Debt Ratings

Moody's insurance financial strength or claims paying ability ratings are opinions of the ability of insurance and reinsurance companies to punctually repay senior policyholder obligations and claims. These ratings apply to companies engaged in the business of providing insurance and taking direct insurance risk, typically known as insurance operating companies. While many insurance groups manage their operations by business unit, Moody's insurance financial strength ratings are always assigned to legal entities.

In contrast, Moody's long-term debt ratings are assigned to specific securities issued by either a holding or operating company. The relationship between the insurance financial strength and debt ratings is dependent upon the legal and regulatory framework in a particular jurisdiction and the relative standing of policyholders and debt holders in the event of insolvency, bankruptcy, reorganization, or liquidation of the entity.

The relationship between the ratings for these different classes of creditors is discussed in the sections below, with guidance about the typical degree of difference (expressed in number of rating "notches") that can be expected in these ratings. These are not to be taken as absolute rules, but rather as guidelines in interpreting the relationship between financial strength ratings and debt ratings. It is important to note that a well capitalized, profitable insurance operating company with a highly leveraged parent or a weak affiliate will often have a lower financial strength rating than it would have were it a free-standing company because of the pressure those factors can place on its earnings and capital. Conversely, an IFS rating of a particular entity can be raised by implicit support associated with ownership by a financially strong group.

### *Priority of Claim Notching Between Operating Company IFS and Other Ratings*

IFS ratings are typically the highest credit ratings within an enterprise. From an analytic perspective, the IFS rating is also the starting point for the development of all the other ratings of securities issued by insurance operating companies, their related holding companies, financing affiliates, etc. We generally consider the IFS rating as the anchor rating and the rating differential between the IFS and other ratings, referred to as priority of claim notching, as a derivative of the IFS assessment, based upon the specifics of the instrument and convention.

At the insurance operating company level, regulators generally accord policyholder obligations a preferred status in liquidation, above that of financial creditors including debt and preferred stock obligations. As a result, Moody's will usually notch down (i.e. assign a lower rating to) other rated obligations of the operating company. In certain jurisdictions, policyholder claims (or reinsurance claims) are pari pasu with senior financial obligations and our IFS rating and senior debt rating for the operating company will be the same. However, in this case, it is likely that there will be wider notching (e.g., two notches instead of one) to the subordinated debt rating at the operating company entity because of the greater expected loss for that creditor class compared to the policyholder and senior creditor classes. Exceptions to this practice include cases where the operating insurer maintains unusually high double leverage and where the insurer's financial strength approaches the secure/vulnerable cutoff (i.e., Baa/Ba).

### *Priority of Claim Notching Between IFS and Holding Company Ratings*

The IFS rating at the operating company will also usually be higher than the insurance holding company's senior debt rating, reflecting the favorable influence of regulation on the operating insurer, as well as the typically subordinated position of a holding company. Although the default probability of an insurance operating company and its holding company are highly correlated, the loss severity (given default) for holding company creditors will be significantly greater given their structural subordination to both policyholder claims and operating company financial obligations-e.g. holding company creditor claims usually do not benefit from the regulatory oversight and typically represent simply an equity investment in the regulated company which will be paid after all obligations of the operating company are met.

Typical notching between the IFS rating at an operating company and the senior debt rating at the holding company (in the case of a simple organizational structure with one primary operating company in a jurisdiction of strong regulatory oversight) is three notches. Similar to the examples discussed above, in cases of unusually high double leverage and of an operating insurer's rating approaching the Baa/Ba cutoff, the notching would typically widen.

### *Taking Account of Differences in Regulatory Jurisdiction*

In jurisdictions where the regulatory regime and oversight is regarded as being more lenient (e.g. modest minimum capital requirements) and the dividend capacity available to the holding company from its operating company relatively substantial, then there is a rationale for narrower notching than typical for an operating company/holding company relationship. A Bermuda domicile, at least for simple holding company structures, would typically provide such an advantage, and here we would expect to maintain two notches between IFS rating at an operating company and senior debt at holding company for a Bermudian insurer.

### *Taking Account of the Impact of Holding Company Diversification and Liquidity*

Whereas the typical notching between the IFS rating at the operating company and the senior debt rating at its holding company is three notches, there can be narrower notching if the holding company benefits from multiple sources of sizable, uncorrelated earnings and dividend cash flows (e.g. significant banking, life and P&C operations and earnings). Similarly, if a holding company benefits from significant sources of dividends from unregulated subsidiaries (which are not highly correlated with the regulated subsidiaries), notching would be compressed. The reduction in notching will vary depending on the breadth and depth of the holding company's diverse sources of subsidiary cash flows.

In certain cases, a holding company may consistently maintain significant amounts of high-quality liquid assets, which it could use in a time of financial stress to repay a substantial portion of its outstanding debt obligations. The difference between the operating company IFS and the holding company senior debt rating would ordinarily be reduced by one notch in these cases as well, to reflect lower default risk.

## Global and National Scale Ratings

With the extension of credit ratings from highly-developed capital markets to newer emerging markets, Moody's rating scales have evolved to provide comparability on both a globally consistent and nationally comparable basis. This development has become necessary for a number of reasons which include the development of local-currency-based capital markets in a number of countries and an increased demand on the part of investors and intermediaries in lower-rated countries for a higher degree of credit differentiation among firms within a given national market, regardless of the sovereign's credit profile. In order to address these issues, Moody's has developed two rating scale conventions, namely Global Foreign & Local Currency Ratings (GFC & GLC Ratings) and National Scale Ratings (NSRs).

### *Global Ratings*

Moody's Global ratings, encompassing both Foreign and Local currency designations, are intended to be globally comparablerelative rankings of credit risk.

## Moody's Global Rating Methodology for Property and Casualty Insurers

GLC ratings reflect Moody's opinion about risk of loss and default, for obligations denominated in local currency. GFC ratings, in contrast, address the risk of obligations denominated in a foreign currency. Thus, GLC and GFC ratings are identical except that GFC ratings must incorporate the additional sovereign risk - that a payment default could result from the imposition of convertibility restrictions or some other sovereign-imposed payment moratorium. In such a case, the individual issuer might have the capacity to pay obligations in full and on time in its own local currency, but is denied access to the currency of payment, resulting in a default. The foreign currency country ceiling represents the risk that a country might impose a moratorium on foreign currency payments in the event the government defaults on its own foreign currency debt. However, if an issuer's GLC debt rating is above the ceiling, then its GFC debt rating might still "pierce" the ceiling if the debt obligation is sold under foreign law and Moody's believes that the issuer might escape such a moratorium. On the other hand, foreign currency IFSRs cannot pierce the ceiling.[15]

### *National Scale Ratings*

In contrast to Moody's global ratings, National Scale Ratings (NSRs) are relative measures of creditworthiness within a single domestic market, and across industry sectors. Unlike GLC ratings, NSRs do have modifiers that indicate to which country they refer (e.g. A2.xx, with 'xx' designating the respective country; mx = Mexico, br = Brazil, etc.). In many countries, NSRs are required either by insurance or securities regulation, or by convention. Because NSR scales are different for each country and are relative measures of credit quality in that country, they are not comparable from one country to another (e.g. A2.mx is not comparable with a A2.br). That said, they are useful tools for assessing relative credit strength within a national market.

### *Local Currency Guidelines and Their Effect on Moody's Ratings*

Moody's Local Currency Guideline summarizes the general country level risks (excluding foreign currency transfer risk) that should be taken into account in assigning local currency ratings to locally-domiciled obligors. In many countries the local currency guideline is higher than the sovereign's own local currency debt ratings. The guideline indicates the rating level that will generally be assigned to the financially strongest obligation in the country. Accordingly, the Local Currency Guideline will usually be a constraint on the GLC rating for any company or obligation. The GLC rating generally and the Local Currency IFS rating in particular, is always the starting point for Moody's insurance rating analysis and is related to other Moody's ratings in the following ways.

The *Global Foreign Currency IFS rating* is the same as the Local Currency IFS rating, except where the LC IFS rating is above the Country Ceiling, in which case the FC IFS rating will be the same as the Country Ceiling. By convention, references to an insurer's financial strength rating are understood to refer to the Foreign Currency IFS rating, unless otherwise specified.

*Global Local Currency Debt Ratings* are determined from the Local Currency IFS rating based on holding company analysis and the notching conventions previously described.

*Global Foreign Currency Debt Ratings* are determined from the Local Currency Debt Rating, as constrained by the Country Ceiling, as discussed above.

*The National Scale IFS rating* is determined based on the Local Currency IFS rating and a national scale rating matrix that is distinct for each country and applied to all global local currency ratings within that country.

*National Scale Debt Ratings* are determined based on the Local or Foreign Currency Debt Rating, using the same national scale rating matrix as above.

[15] For additional information, please refer to "Rating Methodology: Piercing the Country Ceiling: An Update" January, 2005

# Appendix 1: Using the Methodology as a Rating Scorecard

As a complement to detailed fundamental analysis necessary to develop insurance financial strength ratings, Moody's has utilized the backbone of the rating methodology presented herein to develop a ***Rating Scorecard*** which can be useful as a guide to estimating the likely range into which an insurer's rating may fall, based on reference to the various rating level guidelines outlined with this methodology.

For example, under Financial Flexibility, a company with financial leverage of 22% would fall within the Aa range for that metric, and a company with financial leverage of 34% would fall within the A range. The metrics are primarily calculated based upon public information. Non-public financial data or public financial data modified due to accounting and reporting formats in other than US GAAP or IFRS may be also be used, but will not be reported publicly.

Ratings levels from Aaa to Ba are mapped to numerical values of 1 through 12 as follows: Aaa -1; Aa - 3; A - 6; Baa - 9; and Ba - 12. A numerical value is established for each financial metric, and weightings are applied to determine an overall numerical value and rating for each major factor. We then apply weightings to each factor per the accompanying table to obtain an aggregate numerical value and rating for all factors for which a rating matrix exists. The weightings shown below are a subjective assessment of the relative importance of the factors and sub-factors in our assignment of ratings to P&C insurers.

| Factors for P&C Insurers | Weightings | Sub-factor Weightings |
|---|---|---|
| 1 - Market Position and Brand | 25% | |
| Market Share Ratio | | 25% |
| Relative Market Presence Ratio | | 50% |
| Distribution Efficiency | | 25% |
| 2 - Product Risk and Diversification | 10% | |
| Product Risk | | 40% |
| PC Product Diversification | | 40% |
| Regulatory Diversification | | 20% |
| 3 - Asset Quality | 5% | |
| High Risk Assets % Invested Assets | | 20% |
| Reinsurance Recoverables % Equity | | 60% |
| Goodwill % Equity | | 20% |
| 4 - Capital Adequacy | 15% | |
| Gross Underwriting Leverage | | 100% |
| 5 - Profitability | 15% | |
| Return on Equity | | 50% |
| Sharpe Ratio of Growth in Net Income | | 50% |
| 6 - Reserve Adequacy | 10% | |
| Loss Reserve Development % Reserves | | 60% |
| A&E Funding Ratio | | 40% |
| 7 - Financial Flexibility | 20% | |
| Financial Leverage | | 40% |
| Earnings Coverage | | 30% |
| Cash Flow Coverage | | 30% |

## Moody's Global Rating Methodology for Property and Casualty Insurers

By way of example, if we look at the three metrics included in the Asset Quality factor, a company with high risk assets at 18% of invested assets would rate Aa (or 3) under this metric because the range for Aa is 10-20%. In addition, the same company with reinsurance recoverable at 100% of equity would rate A (or 6) on this metric. Lastly, the same company with goodwill at 40% of equity would rate Baa (or 9) on this metric. Based on the accompanying table, the weighted average value for the Asset Quality factor would be 6, which maps to a rating of A2 for this factor.

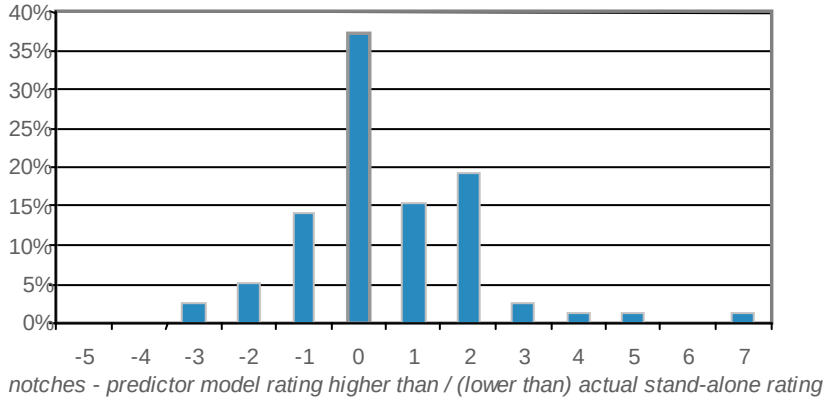
Each major factor is evaluated and then weighted according to its importance within Moody's rating approach for the industry. Using those weightings, a weighted average is calculated which is then mapped back to the Aaa through Ba rating scale. The mapping as shown in the accompanying table includes rating modifiers. The resulting rating is an objective, quantitatively-derived stand-alone financial strength rating in the global local currency before management and governance, accounting policy and disclosure, and regulatory/sovereign considerations are taken into account.

| Rating | Scale |
|---|---|
| Aaa | 1 |
| Aa1 | 2 |
| Aa2 | 3 |
| Aa3 | 4 |
| A1 | 5 |
| A2 | 6 |
| A3 | 7 |
| Baa1 | 8 |
| Baa2 | 9 |
| Baa3 | 10 |
| Ba1 | 11 |
| Ba2 | 12 |

We note that, when comparing results of this model to Moody's actual stand-alone ratings, the Rating Scorecard's accuracy to within one notch of the stand-alone rating is reasonably high at 65%. The Rating Scorecard's accuracy rate was calculated for those analytic units which were both rated above B1 and domiciled in countries for which the long-term country ceiling for foreign currency was Baa3 or higher. Differences between the model's rating and the actual stand-alone rating may exist due to analytic judgment regarding the weighting of the factors, the importance of the other analytic considerations, or other unique fundamentals of the company not appropriately captured or weighted by this model. We also will reiterate here that the model implied stand-alone rating may differ from the published rating due to parental support or sovereign guidelines. The Rating Scorecard, like market-implied ratings, is another input into the rating process and rating committee that offers an alternative perspective to the analyst's rating recommendation.

## Moody's Global Rating Methodology for Property and Casualty Insurers

**Rating Accuracy - Rating Predictor Model vs. Stand-Alone Ratings as of December, 2005**



# Appendix 2: Regional Capital Adequacy Measures

As previously highlighted, Moody's utilizes gross underwriting leverage in the global methodology and Rating Scorecard because of its ability to be calculated consistently for all P&C insurers globally. In order to supplement this rather basic and blunt ratio, in several regions, internally developed or existing regulatory model capital metrics are also used. The insurance regulators in most regions have developed more refined measures of capital adequacy/solvency by evaluating the available capital relative to the risk exposures of the company. The level of sophistication of the risk-based capital (RBC) regime, the scale on which it is measured, and its usefulness in the rating process varies considerably among regulatory jurisdictions.

In countries where such risk-based capital schemes yield reasonable results, Moody's uses the local RBC metrics to supplement other measures of capital strength. An example of an internally developed model is Moody's Risk-Adjusted Capital Model (MRAC) used for P&C insurers domiciled in the United States while local RBC metrics such as the Solvency Margin are used for insurers domiciled in Japan. Additional regional ratios will be introduced in the future.

Where applicable, Moody's also reviews a company's proprietary model for economic capital to assess capital adequacy. However, because assumptions made in one company's model may be quite different from assumptions used in another company's model, it is challenging to compare capital positions using companies' proprietary economic capital models within a peer group.

# Appendix 3: Analyzing Firms Active in Both Insurance and Reinsurance

This appendix identifies the key metrics and their indicated rating-level guidelines used when evaluating companies that have a diversified business model writing significant amounts of both insurance and reinsurance business within the same analytic unit[16]. While the key analytical factors remain the same in analyzing and rating these diversified groups, the framework discussed here reflects the specific business models for these insurers.

## *Rating Level Guidelines and Key Metrics*

While there are many insurers that write both direct insurance and reinsurance from the same legal entity, or from within a common analytic unit, there are few for whom both businesses are proportionally significant. This group includes a number of large specialty P&C insurers primarily domiciled in Bermuda[17].

While the key analytical factors remain the same, the scorecard metrics and rating level guidelines do differ for insurers and reinsurers[18]. Moody's has selected or combined factors from both methodologies that recognize the unique attributes of those companies with a diversified (i.e., both insurance and reinsurance) business model.

When compared to traditional P&C insurance companies, these entities share the characteristic that their insurance exposure tends to be more severity-driven than frequency-driven, and, therefore, they are generally more akin to reinsurers. In addition, these companies tend to write a large percentage of their primary insurance in excess and surplus lines; again, such exposures exhibit loss frequency and severity behaviors that are more common with reinsurance than with traditional P&C insurance.

Given these business characteristics, Moody's metrics and indicated rating-level guidelines for these firms tend to be aligned with those used in our reinsurance rating methodology. Consequently, Moody's rating scorecard for such diversified groups primarily reflects the reinsurers' rating scorecard, with some additional metrics relating to the companies' product risk and underwriting expense ratio. In the following table, we highlight the key rating factors, metrics,[19] and indicated rating-level guidelines that we apply for this group of insurers.

[16] Analytic units for which this appendix would apply typically have P&C insurance premiums and reinsurance premiums that individually represent more than 1/3rd of total premiums.

[17] This group includes firms such as Allied World Assurance Company Holdings, Ltd; Amlin PLC; Arch Capital Group Ltd.; Aspen Insurance Holdings Limited; Axis Capital Holdings Limited; Endurance Specialty Holdings Ltd.; Max Capital Group, Ltd.; and XL Capital Ltd.

[18] See Moody's Global Rating Methodology for Reinsurers, republished in July, 2008

[19] For those metrics defined only in the reinsurance rating methodology, the definitions are reiterated herein for informational purposes.

# Moody's Global Rating Methodology for Property and Casualty Insurers

## Summary of Key Rating Factors, Metrics, and Indicated Rating Level Guidelines

| Key Factors and Metrics (weights/sub-factor weights relative to factor weights) | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| **Business Profile** | | | | | |
| **Market Position, Brand and Distribution (20%)** | | | | | |
| Relative Market Share Ratio (75%) | >3x | 1.5x – 3x | 0.5x – 1.5x | 0.25x – 0.5x | <0.25x |
| Underwriting Expense Ratio % Net Premiums Written (25%) | <20% | 20% - 24% | 24% - 28% | 28% - 32% | >32% |
| **Business and Geographic Diversification (15%)** | | | | | |
| Product Risk (40%) | Very granular exposures; short-tail lines; very low risk of estimating ultimate claim costs | Granular exposures; short- and medium-tailed lines represent more than 2/3rd of premiums; generally moderate risk of estimating ultimate claim costs, but may have manageable property catastrophe risk | Policies may have high gross limits relative to equity; risk of estimating ultimate claim costs is meaningful; longer-tailed lines may represent more than 1/3rd of premiums; manageable catastrophe risk may be present in either casualty or property exposures | Longer-tailed lines are majority of premiums and/or policies have high gross limits relative to equity; risk of estimating ultimate claim cost may be significant; significant catastrophe risk may be present in either casualty or property exposures | Combination of size of in-force portfolio and size of individual policies limits application of "law of large numbers"; claim cost estimation risk is high; catastrophe risk is substantial |
| Business and Geographic Diversification[20] (60%) | 5 | 4 | 3 | 2 | 1 |
| **Financial Profile** | | | | | |
| **Asset Quality (10%)** | | | | | |
| High Risk Assets % Invested Assets (30%) | <10% | 10% - 20% | 20% - 30% | 30% - 40% | >40% |
| Reinsurance Recoverable and Goodwill % Equity (70%) | <50% | 50% - 95% | 95% - 135% | 135% - 200% | >200% |

[20] A score of 1 is given to each product and geographic category where the company generates 20% or more of its NPW. There are three product categories (property, casualty, life) and three geographic categories (North America, Europe, Rest of World). Hence, the minimum raw score is 2 (everyone has at least one product and one place to sell it) and the maximum is 6. We then subtract one to arrive at a diversification score.

## Moody's Global Rating Methodology for Property and Casualty Insurers

### Summary of Key Rating Factors, Metrics, and Indicated Rating Level Guidelines

| Key Factors and Metrics (weights/sub-factor weights relative to factor weights) | Aaa | Aa | A | Baa | Ba |
|---|---|---|---|---|---|
| **Capital Adequacy (20%)** | | | | | |
| Gross Underwriting Leverage (50%)[21] | <1.5x | 1.5x – 2.5x | 2.5x – 4.0x | 4.0x – 6.5x | >6.5x |
| Gross Natural Catastrophe Exposure at the 99.6% agg. PML % Equity (25%) | <12.5% | 12.5% - 31.25% | 31.25% - 62.5% | 62.5% - 150% | >150% |
| Net Natural Catastrophe Exposure at the 99.6% agg. PML % Equity (25%) | <10% | 10% - 25% | 25% - 50% | 50% - 100% | >100% |
| **Profitability (10%)** | | | | | |
| Return on Equity (5 yr. avg.) (50%) | >18% | 12% - 18% | 6% - 12% | 0% - 6% | <0% |
| Sharpe Ratio of Return on Revenue (5 yr.) (50%)[22] | >300% | 200% - 300% | 100% - 200% | 0% - 100% | <0% |
| **Reserve Adequacy (10%)** | | | | | |
| Adv/(Fav) Reserve Dev. % Beg. Reserves (5 yr. avg.) (60%) | <0% | 0% - 2% | 2% - 5% | 5% - 7% | >7% |
| A&E Net Funding Ratio (5 yr. avg.) (40%) | >15x or not applicable | 12x – 15x | 10x – 12x | 8x – 10x | <8x |
| **Financial Flexibility (15%)** | | | | | |
| Financial Leverage (50%) | <15% | 15% - 25% | 25% - 35% | 35% - 45% | >45% |
| Earnings Coverage (5 yr. avg.) (50%) | >14x | 9x – 14x | 5x – 9x | 2x – 5x | <2x |

[21] Gross Underwriting Leverage is equal to [gross written premiums (property & casualty) plus 0.25 x gross written premiums (life) plus gross reserves (property & casualty) plus 0.25 x gross reserves (life)] divided by shareholders' equity.

[22] Sharpe Ratio of Return on Revenue is equal to the mean of the company's annual return on revenue divided by the standard deviation of the return on revenue (5 year period).

# Moody's Global Rating Methodology for Property and Casualty Insurers

## *Scorecard for Insurers That Write Both Insurance and Reinsurance*

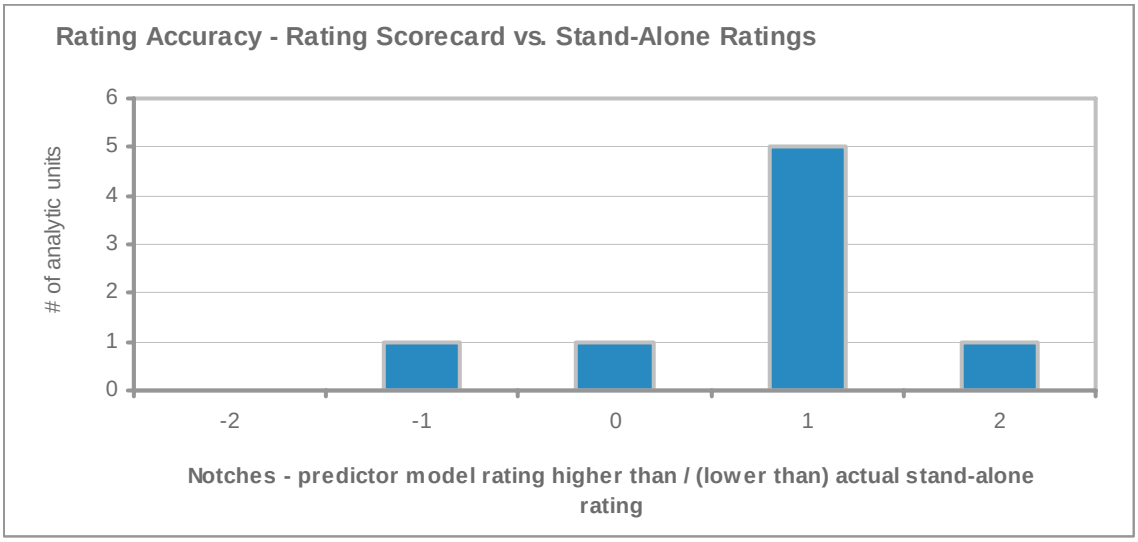
As discussed in appendix 1 and the reinsurance methodology, Moody's employs a scorecard to facilitate understanding of the key rating factors and to assist users in approximating the likely range into which an insurer's rating would fall.

We present below the results of the scorecard model[23], and compare it with the actual stand-alone ratings for the eight companies for which this appendix most currently applies. When applying results of this model to Moody's actual stand-alone ratings, the scorecard's accuracy (to within one notch of the stand-alone rating) is reasonably high -- 88%.

Differences between the model's rating and the actual stand-alone rating may be accounted for by the specific analytic judgment involving the weighting of factors, the importance of other analytic considerations, or other unique fundamentals of the company that are not appropriately captured or weighted by this model.

Many of the companies in the group began business (or grew rapidly) following September 11, 2001. The insurance pricing cycle has generally been very favorable during that time, so results are consistent with our expectation that a company's financial profile would be somewhat better than the indicated rating level guidelines during cycle peaks.

The interpretation of how well a particular diversified insurer fits within its rating category can be found in Moody's published research about that company.




[23] The scorecard model was completed uses financial data through December 31, 2006 and based on the continuous calculation method described in the Reinsurance Rating Methodology.

# Moody's Global Rating Methodology for Property and Casualty Insurers

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