Best's Credit Rating Methodology:
Global Life and Non-Life Insurance Edition

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I. Introduction

Introduction
The Introduction to Best's Credit Rating Methodology (BCRM) contains an explanation of the purpose of the BCRM document, a description of the rating process, information requirements, an overview of the credit rating evaluation, assumptions and macroeconomic factors, and key quantitative and qualitative rating factors

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Purpose of Document

Best's Credit Rating Methodology provides a comprehensive explanation of A.M. Best Co.'s rating process, including the specific rating criteria employed by A.M. Best in determining Best's Credit Ratings. These include Best's Financial Strength, Issuer Credit and Issue Ratings within the insurance industry. This document describes the rating process in detail, from the types of information typically gathered and reviewed to the key financial metrics and qualitative factors considered in the analytical process.

Given its extensive knowledge of the insurance industry, A.M. Best utilizes a broad and deep portfolio of both quantitative and qualitative measures to analyze rated organizations. These measures and the rating processes are reviewed regularly and enhanced through a formal criteria review process. The ongoing review and development of rating criteria is managed by A.M. Best's Corporate Rating Policy Committee (CRPC). The CRPC is responsible for ensuring that A.M. Best continuously uses credit rating methodology that is rigorous, systematic and, where possible, results in ratings that can be subject to some form of objective validation based on historical experience.

Best's Interactive Credit Rating Process

The foundation of A.M. Best's interactive credit rating process is an ongoing dialogue with the rated company's management, which is facilitated by A.M. Best's primary credit analysts. Each interactively rated entity is assigned to a primary analyst, who is supervised by a team leader. The primary analyst is charged with managing the ongoing relationship with company management and performing the fundamental credit analysis prescribed in A.M. Best's rating criteria. It is the primary analyst's responsibility to monitor the financial and nonfinancial results and significant developments for each rated entity in his/her portfolio. A rating evaluation can be considered any time A.M. Best becomes aware of a significant development, regardless of the annual review cycle.

This ongoing monitoring and dialogue with management occurs through formal annual rating meetings, as well as interim discussions on key trends and emerging issues as needed. Management meetings afford A.M. Best's analysts the opportunity to review with the company factors that may affect its rating, including strategic goals, financial objectives and management practices. It is during these interactive meetings that a company typically will share information that may be extremely sensitive or proprietary in nature.

The dialogue with management continues throughout the rating process, which is described in more detail below.

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1. Compile Information. The rating assessment begins with the compilation of detailed public and proprietary financial information, including annual and quarterly financial statements, regulatory filings, certified actuarial and loss-reserve reports, investment detail and guidelines, reinsurance transactions, annual business plans and Best's Supplemental Rating Questionnaire. The primary credit analyst uses this information to develop a tailored meeting agenda for the annual rating meeting. The annual meeting is a key source of quantitative and qualitative information.

2. Perform Analysis. A.M. Best's analytical process incorporates a host of quantitative and qualitative measures that evaluate various sources of risk to an organization's financial health, including underwriting, credit, interest rate, country and market risks, as well as economic and regulatory factors. The analysis includes comparisons with peers, industry standards and proprietary benchmarks, as well as assessments of operating plans, philosophy, management, risk appetite, and the implicit or explicit support of a parent or affiliate.

3. Determine Best's Rating. An initial rating recommendation is developed based on the analytical process outlined above. Each rating recommendation is reviewed and modified, as appropriate, through a rigorous committee process that involves A.M. Best's analysts and senior rating officers who possess relevant expertise. This committee approach ensures consistency of ratings across different business segments and maintains the integrity of the rating process and methodology. The final rating outcome is determined by one or more rating committees after a robust discussion of the pertinent rating issues and financial data.

Before public dissemination, the rating outcome is communicated to the company to which it is being assigned. If the company disagrees with the rating and believes that the information on which it was based was incomplete or misunderstood, then the rating can be appealed. If material new information is forthcoming in a timely manner, then the rating committee may reconsider the rating.

4. Disseminate Best's Rating. Best's Credit Ratings are disseminated as soon as practicable once the rating process is finalized. The ratings are made available to the public via A.M. Best's website and through a number of different data providers and news vendors.

5. Monitor Best's Rating. Once a Best's Credit Rating is published, A.M. Best monitors and updates the rating by regularly analyzing the company's creditworthiness. A.M. Best's analysts continually monitor current developments (e.g., financial statements, public documents, news events) to evaluate the potential impact on a company's rating. Significant developments can result in an interim rating evaluation, as well as modification of the rating or outlook. The primary analyst typically will initiate an evaluation of the rating upon becoming aware of any information that might reasonably be expected to result in a rating action.

Information Requirements

The primary source of information is each company's annual and quarterly (if available) financial statements, as filed with the regulatory agency of the state, province, territory or country in which the company is domiciled. Other sources of information include, but are not limited to: interim management reports on emerging issues; supplemental information requested by A.M. Best; information provided through the annual rating

meeting and other discussions with management; and information available in the public domain.

A.M. Best expects all information submitted by a company to be accurate and complete. Information provided by a company during a rating meeting, or other interim discussions, may be extremely sensitive and/or proprietary. A.M. Best analysts are held to the highest standards of ethical and professional conduct in handling such information. A.M. Best has established policies and procedures to prevent unauthorized disclosure of confidential information and ratings before their release. A.M. Best allows the use of confidential information only for purposes related to its rating activities or in accordance with any confidentiality agreements with the rated company.

Requested Data Items: Property/Casualty & Life/Health Insurance Companies

1. Annual Reports (Latest Five Years)
2. Audited Financial Statement(s) – Consolidated and Parent Only (Annually)
3. Actuarial Report(s), Both Internal and External, When Available (Annually)
4. Organizational Structure for Parent and Subsidiaries
5. Management Structure, Board of Directors and Key Executive Committees
6. Biographical Information on Principal Officers
7. Strategic Business Plans/Five-Year Projections (Assumptions)/Ownership/Capital Resources
8. Capital Management Strategies/Investor/Sponsor Strategy
9. Enterprise Risk Management Strategies
10. Competitive Advantages/Disadvantages
11. Completed Best's Supplemental Rating Questionnaire (SRQ) (Annually)
12. Reinsurance Contracts
13. Catastrophe Management Strategies (P/C Companies Only)
14. Key Distribution Partners
15. Company's Investment Guidelines
16. Any Other Information Believed to Be Relevant to the Rating Process

Advance notification, including background information, of significant transactions should be provided to the primary credit analyst. This gives the analyst, and A.M. Best's rating committees, an opportunity to evaluate the impact of the transaction on the company's operations, and to render a rating decision in a timely manner, if appropriate. All nonpublic information is considered proprietary, and A.M. Best will hold it in strictest confidence.

Overview of Best's Credit Rating Evaluation

The primary objective of Best's Credit Ratings within the insurance segment is to provide an opinion of the rated entity's ability to meet its senior financial obligations, which for an operating insurance company are its ongoing insurance policy and contract obligations. The assignment of a Best's Credit Rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile, as compared with A.M. Best's quantitative and qualitative standards.

In determining a company's ability to meet its current and ongoing obligations, the most important area to evaluate is its balance sheet strength, since it is the foundation for financial security. Balance sheet strength measures the exposure of a company's equity or surplus to volatility based on its operating and financial practices, and can reflect its capital-generation capabilities resulting from quality of earnings. One of the

primary tools used to evaluate an insurer's balance sheet strength is Best's Capital Adequacy Ratio (BCAR), which provides a quantitative measure of the risks inherent in a company's investment and insurance profile, relative to its risk-adjusted capital. A.M. Best's analysis of the balance sheet also encompasses a thorough review of various financial tests and ratios over five-year and in some cases 10-year periods.

The assessment of balance sheet strength includes an analysis of an organization's regulatory filings at the operating insurance company, holding company and consolidated levels. To assess the financial strength and financial flexibility of a rated entity, a variety of balance sheet, income statement and cash-flow metrics are reviewed, including corporate capital structure, financial leverage, interest expense coverage, cash coverage, liquidity, capital generation, and historical sources and uses of capital.

While balance sheet strength is the foundation for financial security, it provides an assessment of capital adequacy at a point in time. A.M. Best views operating performance and business profile as leading indicators when measuring future balance sheet strength and long-term financial stability.

The term "future" is the key, since ratings are prospective and go well beyond a "static" balance sheet view. Profitability is the engine that ultimately drives capital, and looking out into the future enables the analyst to gauge a company's ability to preserve and/or generate new capital over time. In many respects, what determines the relative strength or weakness of a company's operating performance is a combination of its business profile and its ability to effectively execute its strategy.

A company exhibiting strong performance over time will generate earnings sufficient to maintain a prudent level of risk-adjusted capital and optimize stakeholder value. Strong performers are those companies whose earnings are relatively consistent and deemed to be sustainable. Companies with a stable track record and better than average earnings power may receive higher ratings and have lower risk-adjusted capital relative to their peers.

On the other hand, companies that have demonstrated weaknesses in their earnings – through either consistent losses or volatility – are more likely to struggle to maintain or improve capital in the future. For these reasons, these companies typically are rated lower than their counterparts that perform well and usually are held to higher than minimum capital guidelines to minimize the chance of being downgraded if established trends were to continue.

A.M. Best believes that risk management is the common thread that links balance sheet strength, operating performance and business profile. Risk management fundamentals can be found in the strategic decision-making process used by a company to define its business profile, and in the various financial management practices and operating elements of an insurer that dictate the sustainability of its operating performance and, ultimately, its exposure to capital volatility. As such, if a company is practicing sound risk management and executing its strategy effectively, then it will preserve and build its balance sheet strength and perform successfully over the long term – both key elements of A.M. Best's ratings and the evaluation of risk management.

Assumptions & Macroeconomic Factors

Based on historical experience and A.M. Best's transition studies, ratings typically move no more than one to two notches when rating action occurs. However, market influ-

ences, including macroeconomic conditions, interest rate movements, inflationary levels, volatility of capital markets, pricing levels and regulatory changes, could result in larger scale movement in the ratings.

Economic

A.M. Best factors the economic and financial system conditions of a country into all of its ratings. A.M. Best defines country risk as the risk that country-specific factors could adversely affect an insurer's ability to meet its financial obligations, and separates the risks into three main categories: economic risk, political risk and financial system risk.

Economic risk is the likelihood that fundamental weaknesses in a country's economy will cause adverse developments for an insurer. A.M. Best's assessment of economic risk evaluates the state of the domestic economy, labor market conditions, inflation levels and volatility, as well as prospects for growth and stability. The level of economic risk in a country is determined to be: (1) very low; (2) low; (3) moderate; (4) high or (5) very high.

Financial system risk is separated into two parts, insurance risk and non-insurance financial system risk. Non-insurance risk is the risk that financial volatility may erupt because of inadequate reporting standards, weak banking systems or asset markets, or poor regulatory structure. Non-insurance financial system risk considers a country's banking system, accounting standards and government finances, and it assesses how vulnerable the financial system is to external or internal volatility. Included in this analysis are the performances of banks, equity indices and fixed-income securities, as well as an assessment of the depth and volatility of the country's capital markets. Insurance risk is the risk that the insurance industry's levels of development and public awareness; transparency and effectiveness of regulation; reporting standards; and regulatory sophistication will contribute to a volatile financial system and compromise an insurer's ability to pay claims. The level of financial system risk (combing insurance and non-insurance financial system risk) in a country is determined to be: (1) very low; (2) low; (3) moderate; (4) high or (5) very high.

Political risk is the likelihood that governmental or bureaucratic inefficiencies, societal tensions, an inadequate legal system or international tensions will cause adverse developments for an insurer. Political risk comprises the stability of a government and society; the effectiveness of international diplomatic relationships; the reliability and integrity of the legal system and business infrastructure; the efficiency of the government bureaucracy; and the appropriateness and effectiveness of the government's economic policies. The level of political risk in a country is determined to be: (1) very low; (2) low; (3) moderate; (4) high or (5) very high.

The scores for each category of risk then are aggregated and the country is assigned to one of five Country Risk Tiers with the following broad definitions.

- CRT-1: Predictable and transparent political environment, legal system and business infrastructure; sophisticated financial system regulation with deep capital markets; mature insurance industry framework.

- CRT-2: Predictable and transparent political environment, legal system and business infrastructure; sufficient financial system regulation; mature insurance industry framework.

- CRT-3: Developing political environment, legal system and business infrastructure with developing capital markets; developing insurance regulatory structure.

- CRT-4: Relatively unpredictable and nontransparent political, legal and business environment with underdeveloped capital markets; partially to fully inadequate regulatory structure.

- CRT-5: Unpredictable and opaque political, legal and business environment with limited or nonexistent capital markets; low human development and social instability; nascent insurance industry.

In general, as country risk increases (measured by a higher assigned tier), the distribution of ratings migrates down the rating scale as the level of risk approaches CRT-5. While potential volatility already is contemplated in each Country Risk Tier, unanticipated negative changes to the economic, political and/or financial system conditions could lead to downward pressure on ratings in that country.

Underwriting & Pricing

Reserve Adequacy:

Based on A.M. Best's internal analysis, overall loss and loss-adjustment expense reserves currently are weakening, particularly in longer tail lines of business. As such, A.M. Best's assumption begins with a modest reserve deficiency for ratings that fall into CRT-1 and CRT-2 tiers. For ratings associated with tiers CRT-3, CRT-4 and CRT-5, additional deficiency is applied in the evaluation of reserves. Deficiency levels can be adjusted based on individual company experience and third-party actuarial reviews.

Pricing Expectations:

A.M. Best expects modest improvement in pricing to continue across most markets, with more hardening expected in catastrophe-impacted lines of business. Competition remains above average, which continues to place pressure on rates and reserve adequacy. Local market conditions and actual underwriting experience in a given market are considered in the pricing expectations based on where a specific company operates.

Mortality Risk:

Mortality has been improving globally for the past 20 years as life expectancy has lengthened steadily. A.M. Best expects the increase in life expectancy to moderate over time, based on the influence of potential health concerns. There is no expectation of a pandemic.

Morbidity Risk Expectations:

Medical loss trends have moderated in recent years, and A.M. Best expects this trend to continue over the next 12 months. Local market data are considered in the analysis when available.

Other Factors

Regulatory Changes:

While regulatory changes are not directly tied to the economy, changes may be necessary in response to other factors such as pricing levels and underwriting results. Regulatory changes typically impact selected lines and markets.

Catastrophe Risks:

Recent above-average catastrophe trends are expected to continue over the next 12 months. As a starting point, catastrophe modeling output is utilized in the rating process. A.M. Best assumes appropriate data quality is utilized in management's analysis of exposures. Companies are expected to incorporate their catastrophe exposures into their overall risk management programs.

Best's Credit Rating Approach

A.M. Best assigns various types of Best's Credit Ratings (FSRs, ICRs, and debt Issue Ratings) to organizations of all different shapes and sizes – from single legal-entity organizations to complex, multinational organizations with diversified insurance and non-insurance operations and multiple intermediate holding companies, all under a publicly traded or privately held ultimate holding company.

The fundamental approach for the assignment of credit ratings is to examine an organization from both the top down and the bottom up. As a result, the analysis performed incorporates an assessment of material sources of risk to the rated entity.

Exhibit 1

Translation Table

FSR	Long-Term ICR	FSR	Long-Term ICR
A++	aaa	B	bb+
	aa+		bb
A+	aa	B-	bb-
	aa-	C++	b+
A	a+		b
	a	C+	b-
A-	a-	C	ccc+
B++	bbb+		ccc
	bbb	C-	ccc-
B+	bbb-		cc
		D	c
		E	e/d
		F	f/d

Note:'e/E, f/F and d are non-rating designation status. e/E and f/F are used for insurers, while d is used for non-insurers and securities
Source: A.M. Best Co.

The top-down analysis includes the exposure to risk generated by activities at the parent/holding company, such as the potential strain on the operating entity from debt-servicing requirements related to the parent's borrowings, as well as the benefits of earnings diversification that may come from being a member of a diversified organization. For the nonrated subsidiaries, A.M. Best performs a detailed internal analysis of their risk profile and resulting effect on the rated entities within the group, including A.M. Best's judgment as to the exposure of rated entities to debt or other borrowings at the holding company level.

The bottom-up analysis focuses on an assessment of the risks generated directly by the operations of the rated entity itself, as well as any other rated affiliates. For insurers, this analysis includes an assessment of underwriting, credit, interest rate, market and other risks at the operating company level. The primary objective of this overall approach is to gain a broad understanding of the potential impact on the current and future balance sheet of the rated operating entity – both from its own operations and those of its parent and affiliates – in support of the assignment of an ICR on the rated operating entity, which is referred to as an Operating Company ICR.

The Operating Company ICR is the foundation for the Operating Company FSR (if the rated operating entity is an insurance company) and the Holding Company ICR. The Operating Company FSR is determined using the Rating Translation Table (see **Exhibit 1**), effectively converting the rating from the ICR scale to the FSR scale. If an insurer

issues public debt, A.M. Best will assign a rating specific to its view of the credit quality of the debt issue. The debt Issue Rating is established by reference to the ICR of the issuing entity. For debt issued by an operating insurance company, the rating will reflect the degree of subordination of the debt issue to the senior obligations of the insurer, typically insurance policies and contracts.

A Holding Company ICR reflects the fact that it is a discrete legal entity from the operating insurer. Since a holding company typically does not generate significant earnings independent from subsidiary operations, this legal separation from the operating company represents an added degree of risk, especially in terms of the actual or potential control a regulator may apply to the movement of funds from an operating insurer to a holding company. Moreover, the policyholders of an operating insurer usually have seniority over creditors of the holding company. The greater degree of risk taken by senior unsecured creditors of the holding company, relative to those of the operating company, is reflected in the holding company typically being assigned a lower ICR than the operating company.

For highly rated operating companies, Holding Company ICRs usually are two or three notches lower. Farther down the rating scale, this may extend to four or five notches. Conversely, for the very strongest organizations, with diversified operations, this notching could be reduced to zero (i.e., if after taking into account the risks highlighted above, the credit profile of the holding company still was consistent with a rating of "aaa").

Key Quantitative and Qualitative Rating Factors

The assignment of a Best's Credit Rating involves a comprehensive quantitative and qualitative analysis of a company's balance sheet strength, operating performance and business profile. The interpretation of quantitative measurements involves the incorporation of more qualitative considerations into the process that may impact prospective financial strength. A.M. Best's quantitative evaluation is based on an analysis of each company's reported financial performance, utilizing numerous financial tests and supporting data. These tests, which underlie A.M. Best's evaluation of balance sheet strength and operating performance, vary in importance depending on a company's characteristics.

A company's quantitative results are compared with industry composites as established by A.M. Best. Composite standards are based on the performance of many insurance companies with comparable business mix and organizational structure. In addition, industry composite benchmarks are adjusted from time to time for systemic changes in underwriting, economic and regulatory market conditions to ensure the most effective and appropriate analysis.

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing senior obligations, the most important area to evaluate is its balance sheet strength. An analysis of a company's underwriting, financial, operating and asset leverage is very important in assessing its overall balance sheet strength.

Balance sheet strength measures the exposure of a company's surplus to its operating and financial practices. A highly leveraged or poorly capitalized company can show a high return on equity/surplus, but it may be exposed to a high risk of instability. Conservative

leverage or capitalization enables an insurer to better withstand catastrophes; unexpected losses and adverse changes in underwriting results; fluctuating investment returns or investment losses; and changes in regulatory or economic conditions.

Underwriting leverage is generated from current premium writings, reinsurance and loss or policy reserves. A.M. Best reviews these forms of leverage to analyze changes in trends and magnitudes. To measure exposure to pricing errors in a company's book of business, A.M. Best reviews the ratio of gross and net premiums written to capital. To measure credit exposure and dependence on reinsurance, A.M. Best reviews the credit quality of a company's reinsurers and ratio of reinsurance premiums and reserves ceded and related reinsurance recoverables to surplus. To measure exposure to unpaid obligations, unearned premiums and exposure to reserving errors, A.M. Best analyzes the ratio of net liabilities to surplus.

To assess whether or not a company's underwriting leverage is prudent, A.M. Best considers a number of factors unique to the company, including type of business written; spread of risk; quality and appropriateness of its reinsurance program; quality and diversification of assets; and adequacy of loss reserves.

A.M. Best reviews a company's financial leverage in conjunction with its underwriting leverage in forming an overall opinion of a company's balance sheet strength. Financial leverage through debt or debt-like instruments (including financial reinsurance) may place a call on an insurer's earnings and strain its cash flow. Similar to underwriting leverage, excessive financial leverage at the operating or holding company can lead to financial instability. As such, the analysis is conducted at both the operating company and holding company levels, if applicable.

To supplement its assessment of financial leverage, A.M. Best also reviews a company's operating leverage. A.M. Best broadly defines operating leverage as debt (or debt-like instruments) used to fund a specific pool of matched assets. Cash flows from the pool of assets are expected to be sufficient to fund the interest and principal payments associated with the obligations, substantially reducing the potential call on an insurer's earnings and cash flow. In other words, the residual risk to the insurer would be insignificant as long as the insurer possesses sound asset/liability, liquidity and investment risk management capabilities; exhibits low duration mismatches; and minimizes repayment and liquidity risk relative to these obligations. A.M. Best has established specific tolerances for operating leverage activities that are applied at each operating company, as well as at the consolidated level. Generally, debt obligations viewed by A.M. Best as eligible for operating leverage treatment would be excluded from the calculation of financial leverage, unless one of the tolerance levels is exceeded.

A.M. Best also evaluates asset leverage, which measures the exposure of a company's surplus to investment, interest rate and credit risks. Investment and interest rate risks measure the credit quality and volatility associated with the company's investment portfolio and the potential impact on its balance sheet strength.

A company's underwriting, financial and asset leverage also are subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR), which calculates the net required capital to support the company's underwriting, investment and credit risks. This encompasses the exposure of its investments, assets and underwriting to adverse economic and market conditions such as a rise in interest rates, decline in the equity markets or above-normal catastrophes. This integrated stress analysis evaluation permits a more discerning view of

a company's relative balance sheet strength compared with its operating risks. The BCAR is based on financial statements and supplemental information provided by companies. The BCAR result is an important component in determining a company's balance sheet strength. A.M. Best also views insurance groups on a consolidated basis and assigns a common BCAR result to group consolidations or multiple member companies that are linked together through intercompany pooling or reinsurance arrangements.

Capitalization Tests for Life/Health Companies

- **Change in Net Premiums Written (NPW) and Deposits:** The annual percentage change in net premiums written and deposits. This test is a measure of growth in underwriting commitments.

- **NPW and Deposits to Total Capital:** Net premiums written and deposits related to capital and surplus funds. This reflects the leverage, after reinsurance assumed and ceded, of the company's current volume of net business in relation to its capital and surplus. This test measures the company's exposure to pricing errors in its current book of business.

- **Capital and Surplus to Liabilities:** The ratio of capital and surplus to total liabilities. This test measures the relationship of capital and surplus to the company's unpaid obligations after reinsurance assumed and ceded. It reflects the extent to which the company has leveraged its capital and surplus base.

- **Surplus Relief:** The relationship of commissions and expense allowances on reinsurance ceded to capital and surplus funds.

- **Reinsurance Leverage:** The relationship of total reserves ceded plus commissions and expenses due on reinsurance ceded plus experience rating and other refunds due from reinsurers, plus amounts recoverable from reinsurers to total capital and surplus.

- **Change in Capital:** The annual percentage change in the sum of current-year capital and surplus plus voluntary investment reserves, over the prior year's sum.

- **Best's Capital Adequacy Ratio (BCAR):** The BCAR compares an insurer's adjusted surplus relative to the required capital necessary to support its operating and investment risks.

Capitalization Tests for Property/Casualty Companies

- **Change in Net Premiums Written (NPW):** The annual percentage change in net premiums written. A company should demonstrate an ability to support controlled business growth with quality surplus growth from strong internal capital generation.

- **NPW to Policyholders' Surplus (PHS):** The ratio of net premiums written to surplus. This measures the company's exposure to pricing errors in its current book of business.

- **Net Liabilities to PHS:** The ratio of loss reserves and other liabilities to surplus. This measures a company's exposures to errors of estimation in its loss reserves and all other liabilities. The higher the loss-reserve leverage, the more critically a company's solvency depends upon having and maintaining adequate reserves.

- **Net Leverage:** This ratio measures the combination of a company's net exposure to pricing errors in its current book of business and errors of estimation in its net liabilities after reinsurance, in relation to surplus.

- **Ceded Reinsurance Leverage:** This ratio measures the company's dependence upon the security provided by its reinsurers and its potential exposure to adjustments on such reinsurance.

- **Gross Leverage:** This ratio measures a company's gross exposure to pricing errors in its current book of business, to errors of estimating its liabilities, and to its reinsurers.

- **Best's Capital Adequacy Ratio (BCAR):** The BCAR compares an insurer's adjusted surplus relative to the required capital necessary to support its operating and investment risks.

Quality and Appropriateness of Reinsurance and Other Risk Mitigation Programs

Reinsurance plays an essential role in the risk-spreading process and provides insurers with varying degrees of financial stability. As a result, A.M. Best evaluates a company's reinsurance program to determine its appropriateness and credit quality. A company's reinsurance program should be appropriate relative to its policy limits, underwriting risks and catastrophe exposures. In addition, a reinsurance program should include reinsurers of good credit quality, since in the event of a reinsurer's failure to respond to its share of a loss, the reinsured or counterparty would have to absorb a potentially large loss in its entirety.

To be considered adequate for catastrophe protection, a program needs to protect a property/casualty company from impairment or insolvency due to large shock losses from natural or man-made catastrophes. In addition, reinsurance should provide protection from a series of smaller storm losses that do not trigger recovery from a traditional catastrophe reinsurance program. In addition to spreading risk, reinsurance can be utilized to leverage a company's surplus to enable it to write more business than otherwise would be possible.

Another method of mitigating catastrophe risk is through the issuance of a catastrophe bond, which is a structured debt instrument that transfers risks associated with low-frequency/high-severity events to investors. These instruments typically incorporate either an indemnity trigger (based on an issuing company's actual loss experience) or some form of an index-based, parametric trigger (based on a predefined industry index). A.M. Best recognizes that parametric catastrophe bonds come with "basis risk" that must be considered in the financial strength ratings (FSRs) of the companies sponsoring the bond issues. Basis risk, in the context of catastrophe bonds, generally reflects the possibility that a catastrophe bond may not be partially or fully triggered (for covered perils) even when the sponsor of the catastrophe bond has suffered a loss. Through A.M. Best's analysis, a determination is made as to how much basis risk is inherent in a catastrophe bond, which determines how much reinsurance credit will be given to the insurance/reinsurance company that sponsors a catastrophe bond with a parametric trigger.

Sidecars are yet another way for insurers/reinsurers to mitigate risk. A sidecar is a limited-life, special-purpose reinsurance vehicle that generally provides property catastrophe quota-share reinsurance exclusively to its sponsor. Sponsors of sidecars generally take reinsurance credit for transferring risks to sidecars. While some sidecars may be capitalized to full aggregate limits, others may not be adequately capitalized to absorb

losses that deviate from expectations. When capitalization is inadequate, some of the risk originally assumed to be fully hedged by a sidecar (in the determination of the Best's FSR of the sponsor) ultimately may be borne by the sponsor. This risk is referred to as "tail risk." A.M. Best's analysts will assess tail risk to ensure that the sponsor of a sidecar receives appropriate reinsurance credit.

For life/health companies, a reliable reinsurance program must consider sound risk management practices to provide the company with protection against adverse fluctuations in experience. Since these risk-transfer agreements on an underlying policy or policies indemnify the company for insurance risks, prudent evaluation of the economic impact on a company's life, health and annuity operations is critical. Incorporating reinsurance to manage a company's financial risk that includes mortality, morbidity, lapse or surrender, expense and investment performance presents a competitive risk to a counterparty's future growth prospects and long-term viability. Therefore, the range of reinsurance must be evaluated with the company's ability to manage its growth relative to demands for life and health insurance coverages under existing economic and regulatory environments.

An insurer's ability to meet its financial obligations can become overly dependent on the performance of its reinsurers. A company also can become exposed to the state of reinsurance markets in general. A significant dependency on reinsurance can become problematic if a major reinsurer of the company becomes insolvent or disputes coverage for claims. It also can become a problem if general reinsurance rates, capacity, terms and conditions change dramatically after an industry event. The more a company depends on reinsurance, the more vulnerable its underwriting capacity becomes to adverse changes in the reinsurance market. The greater this dependency, the greater the scrutiny of a company's reinsurance program to determine its appropriateness, credit quality and permanency.

Adequacy of Loss/Policy Reserves

For property/casualty companies, reserves play an important role in determining the balance sheet strength and flexibility of an insurance carrier, as well as its underlying profitability. The estimation of ultimate reserve requirements is subject to uncertainty. Actuaries who certify a company's reserves typically provide management with a range within which loss and loss-adjustment expense reserves are deemed adequate. The range of reserve adequacy estimated by actuaries can be very significant. For casualty-oriented insurers, a 25% deficiency in current reserves may exceed policyholders' surplus and, therefore, render them technically insolvent.

For property/casualty companies, A.M. Best evaluates reserving trends through its proprietary loss-reserve model to measure any equity imbedded in a company's loss reserves. A.M. Best's estimate of a company's ultimate loss reserve position then is discounted to determine an economic loss reserve position. Any difference (deficiency or redundancy) between this economic reserve level and a company's carried loss-reserve level then is applied to A.M. Best's proprietary capital adequacy model (BCAR). This loss-reserve equity adjustment, which can be sizable for property/casualty insurers, enables A.M. Best to "level the playing field" within its rating evaluation and better discriminate between companies that historically have under-reserved and those that have strong loss-reserve positions.

Separately, A.M. Best also evaluates a company's ability to monitor premium adequacy and the degree of uncertainty in loss reserves. If the level of reserve uncertainty exceeds any equity in the reserves, or is considered large in relation to net income and surplus, A.M.

Best will require a company to maintain a more conservative capital position (i.e., BCAR score) for its rating level. Loss-reserve uncertainty and earnings drag historically have been pronounced in the area of asbestos and environmental (A&E) exposures.

A.M. Best uses both public and nonpublic reserve and paid loss data in calculating several crude benchmarks to identify companies that may have a material exposure to A&E liabilities. A.M. Best's A&E analysis focuses on earnings and surplus drag associated with a company's potential unfunded liabilities. These unfunded liabilities are calculated relative to a company's market share of A.M. Best's industrywide estimate for total A&E costs less the company's cumulative incurred losses recognized to date. A.M. Best's initial analysis also focuses on a company's relative funding status as measured by its survival ratio (reserves to recent paid losses) against prevailing industry levels.

Key Loss Reserve Tests for Property/Casualty Companies

- **Loss and LAE Reserves to Policyholders' Surplus (PHS):** This ratio measures the trend and magnitude of loss reserves to surplus. The higher the multiple of loss reserves to surplus, the more critical reserve adequacy becomes to an insurer's solvency.

- **Development to PHS:** This ratio reflects the degree to which year-end surplus was either overstated or understated in each of the past several years.

For life/health companies, evaluating the adequacy of an insurer's reported reserves is essential to evaluating its profitability, leverage, capitalization and liquidity. Net income and policyholders' surplus are affected directly by changes in reported reserves. Reserve adequacy opinions of certified actuaries (internal and third party) supplement A.M. Best's review.

A.M. Best reviews the valuations, interest assumptions and degree of conservatism in the establishment of life, health and annuity reserves. A.M. Best also evaluates the degree of uncertainty in policy reserves, recognizing that they are only actuarial estimates of future events. If the degree of uncertainty exceeds any equity in the reserves, and is large in relation to net income and policyholders' surplus, A.M. Best's confidence declines in a company's reported profitability, liquidity and leverage (capitalization).

Quality and Diversification of Assets

The quality and diversification of assets contribute to a company's financial stability. Invested assets (principally bonds, common stocks, mortgages and real estate) are evaluated to assess the risk of default and the potential impact on surplus if the sale of these assets occurred unexpectedly. The higher the liquidity, diversification and/or quality of the asset portfolio, the less uncertainty there is in the value to be realized upon the sale of an asset and the lesser the likelihood of default. Therefore, a company's investment guidelines are reviewed to identify a lack of diversification among industries or geographic regions, with particular attention paid to large, single investments that exceed 10% of a company's total capital. Companies that hold illiquid, undiversified and/or speculative assets and have a significant underwriting exposure to volatile lines of business that are vulnerable to unfavorable changes in underwriting and/or economic conditions can jeopardize policyholders' surplus.

Liquidity

Liquidity measures a company's ability to meet its anticipated short- and long-term obligations to policyholders and other creditors. A company's liquidity depends on the degree to which it can satisfy its financial obligations, whether by holding cash and

investments that are sound, diversified and liquid, or through operating cash flow. A high degree of liquidity enables an insurer to meet unexpected needs for cash without the untimely sale of investments or fixed assets, which may result in substantial realized losses due to temporary market conditions and/or tax consequences.

To measure a company's ability to satisfy its financial obligations without having to resort to selling long-term investments or affiliated assets, A.M. Best reviews a company's quick liquidity, which measures the amount of cash and marketable investments that have low exposure to price fluctuations. A.M. Best also reviews current liquidity to measure the proportion of a company's total liabilities that are covered by cash and unaffiliated invested assets. Operational and net cash flows are reviewed since they, by themselves, can meet some liquidity needs, provided cash flows are positive, large and stable relative to cash requirements. Finally, A.M. Best evaluates the quality, market value and diversification of assets, particularly the exposure of large, single investments relative to capital.

Key Liquidity Tests for Life/Health Companies

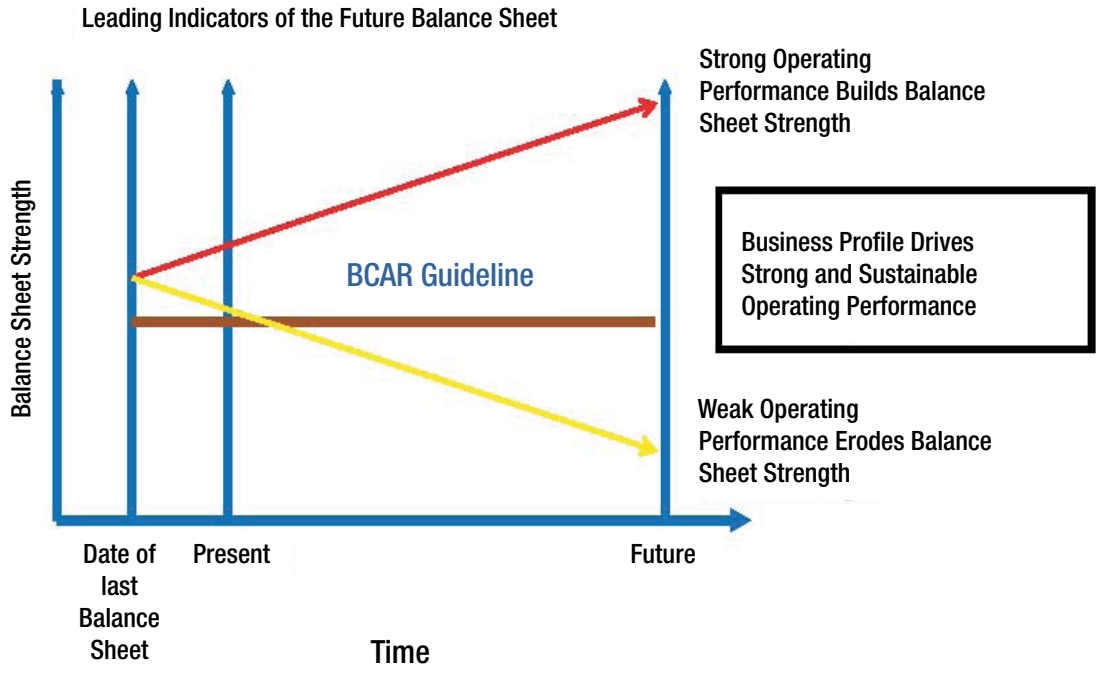
- **Quick Liquidity:** The ratio of unaffiliated quick assets to liabilities. Quick assets include cash and short-term investments and a percentage of unaffiliated common stocks and unaffiliated, public, investment-grade bonds. This test measures the proportion of liabilities covered by cash and quickly convertible investments. It indicates a company's ability to meet its maturing obligations without requiring the sale of long-term investments or the borrowing of money.

- **Current Liquidity:** The ratio of total current assets to total liabilities. This test measures the proportion of liabilities covered by cash and unaffiliated holdings, excluding mortgages and real estate.

- **Non-Investment-Grade Bonds to Capital:** The sum of non-investment-grade bonds

Exhibit 2

Impact of Operating Performance and Business Profile on the Balance Sheet



Source: A.M. Best Co.

as a percentage of capital and surplus funds. Generally, non-investment-grade bonds carry higher default and illiquidity risks.

- **Delinquent and Foreclosed Mortgages to Capital:** The sum of long-term mortgages upon which interest is overdue more than three months or in process of foreclosure and foreclosed real estate as a percentage of capital and surplus funds.

- **Mortgages and Credit Tenant Loans and Real Estate to Capital:** Mortgage loans and credit tenant loans and real estate (home office property, property held for income and property held for sale) as a percentage of capital and surplus funds.

- **Affiliated Investments to Capital:** Affiliated investments (including home office property) as a percentage of capital and surplus funds.

Key Liquidity Tests for Property/Casualty Companies

- **Quick Liquidity:** The ratio of unaffiliated quick assets to liabilities. Quick assets include cash and short-term investments and a percentage of unaffiliated common stocks and unaffiliated, public, investment-grade bonds. This test measures the proportion of liabilities covered by cash and quickly convertible investments. It indicates a company's ability to meet its maturing obligations without requiring the sale of long-term investments or the borrowing of money.

- **Current Liquidity:** The ratio of total current assets to total liabilities. This test measures the proportion of liabilities covered by cash and unaffiliated holdings, excluding mortgages and real estate.

- **Overall Liquidity:** This ratio indicates a company's ability to cover net liabilities with total assets. This ratio does not address the quality and marketability of premium balances, other receivables, affiliated investments and other assets.

- **Operating Cash Flow:** This test measures a company's ability to meet current obligations through the internal generation of funds from insurance operations. Negative balances may indicate unprofitable underwriting results or low-yielding assets.

- **Non-Investment-Grade Bonds to PHS:** This test measures exposure to non-investment-grade bonds as a percentage of surplus. Generally, non-investment-grade bonds carry higher default and illiquidity risks.

Operating Performance

Profitable insurance operations are essential for a company to operate as a going concern. For an insurer to remain viable in the marketplace, it must perpetuate a financially strong balance sheet for its policyholders. When evaluating operating performance, A.M. Best's analysis centers on the stability and sustainability of the company's sources of earnings in relation to the liabilities that the company retains.

A.M. Best reviews the components of a company's statutory earnings over the past five years to evaluate the sources of profits and the degree and trend of various profitability measures. Areas reviewed include underwriting, investments, capital gains/losses and total operating earnings, both before and after taxes. Profitability measures are distorted easily by operational changes; therefore, A.M. Best reviews the mix and trends of premium volume, investment income, net income and surplus. The structure of the company (stock vs. mutual), the length and nature of its insurance liability risks and how these elements

relate to the company's operating mission also are important to evaluating profitability. The degree of volatility in a company's earnings and the impact this could have on capitalization and balance sheet strength are of particular interest to A.M. Best.

To supplement the review of profitability, A.M. Best analyzes the company's earnings under generally accepted accounting principles (GAAP), International Financial Reporting Standards (IFRS) and any other regulatory or accounting reporting to understand the company's forms and measurements of profitability. This review generally extends beyond the scope of publicly traded companies, since an increasing number of non-public insurers also prepare, monitor and/or manage to GAAP, IFRS or other forms of accounting reporting. A.M. Best recognizes that a proper assessment of an insurer's current and prospective profitability may involve a review of multiple accounting forms and results to ascertain the true economic picture.

Key Profitability Tests for Life/Health Companies

- **Benefits Paid to NPW and Deposits:** Total benefits paid as a percentage of net premiums written and deposits. Benefits paid include death benefits; matured endowments; annuity benefits; accident and health benefits; disability and surrender benefits; group conversions; coupons and payments on supplementary contracts; interest on policy or contract funds; and other, miscellaneous benefits.

- **Commissions and Expenses to NPW and Deposits:** Commissions and expenses incurred as a percentage of net premiums written and deposits. Commissions and expenses include payments on both direct and assumed business; general insurance expenses; insurance taxes; licenses and fees; increase in loading; and other miscellaneous expenses. Excluded are commissions and expense allowances received on reinsurance ceded.

- **NOG to Total Assets:** Net operating gain (after taxes) as a percentage of the mean of current and prior-year admitted assets. This test measures insurance earnings in relation to the company's total asset base.

- **NOG to Total Revenue:** Net operating gain (after taxes) as a percentage of total revenues. This test measures insurance earnings in relation to total funds provided from operations.

- **Operating Return on Equity:** Net operating gain (after taxes) as a percentage of the mean of current and prior-year capital and surplus. This test measures insurance earnings in relation to the company's policyholders' surplus base.

- **Net Yield:** Net investment income as a percentage of mean cash and invested assets plus accrued investment income, minus borrowed money. This test does not reflect realized and unrealized capital gains or income taxes.

- **Total Return:** The net yield plus realized and unrealized capital gains and losses.

Key Profitability Tests for Property/Casualty Companies

- **Loss Ratio:** This ratio measures the company's underlying profitability, or loss experience, on its total book of business.

- **Expense Ratio:** This ratio measures the company's operational efficiency in underwriting its book of business.

- **Combined Ratio after Policyholder Dividends:** This ratio measures the company's overall underwriting profitability. A combined ratio of less than 100 indicates the company has reported an underwriting profit.

- **Operating Ratio:** The operating ratio measures a company's overall, pretax operational profitability from underwriting and investment activities. An operating ratio of less than 100 indicates a company is able to generate a profit from its core operations.

- **Pretax ROR (Return on Revenue):** This ratio measures a company's operating profitability and is calculated as pretax operating income divided by net premiums earned.

- **Yield on Invested Assets:** This ratio measures the average return on a company's invested assets before capital gains/losses and income taxes.

- **Change in PHS (Policyholders' Surplus):** This ratio measures the annual change in a company's policyholders' surplus derived from operating earnings, investment gains, net contributed capital and other miscellaneous sources.

- **Return on PHS:** This ratio measures a company's efficiency in utilizing its surplus on a total-return basis and is calculated using the overall, after-tax profitability from underwriting and investment activities, including unrealized capital gains.

Business Profile

Business profile is a qualitative component of A.M. Best's rating evaluation that directly impacts the quantitative measures. An insurer's business profile impacts current and future operating performance and, in turn, long-term financial strength and the company's ability to meet its obligations to policyholders.

Business profile is influenced by the degree of risk inherent in the company's mix of business, an insurer's competitive market position, and the depth and experience of its management. Lack of size or growth are not typically considered negative rating factors unless A.M. Best believes these issues have a negative influence on the company's prospective operating performance and balance sheet strength.

In addition, business profile issues often increase in importance at A.M. Best's highest rating levels. At the "Superior" level, insurers are expected to have strong balance sheets, solid operating performance and stable operating trends. What distinguishes these companies is the strength of their business profile, which typically translates into defensible competitive advantages.

Key Business Profile Tests

Spread of Risk: A company's book of business must be analyzed by line in terms of its geographic, product and distribution diversification. However, the size of a company, measured solely by its premium volume, cannot be used to judge its spread of risk.

For life/health companies, the mix of business must be evaluated with respect to the distribution and performance of the underlying assets, as well as a company's susceptibility to economic business cycles or regulatory pressures, such as minimum loss ratios, market conduct regulation, or financial services and health care reform initiatives.

For property/casualty companies, the geographic location and concentration of a book of business can have a great impact on its exposure to catastrophic losses, such as terrorist attacks, hurricanes, tornadoes, windstorms, hail or earthquakes. For property insurers, A.M. Best requires a company to perform some degree of natural catastrophe modeling on its book of business.

The geographic location and lines of business written by a company also determine its exposure or vulnerability to regulatory or residual market risks that exist within certain jurisdictions. In addition, the mix of business must be evaluated carefully. Because underwriting experience varies dramatically among lines of business, a company's underwriting risk profile must be reviewed, since high-risk lines with volatile loss experience can impact the financial stability of an insurer, particularly one that is poorly capitalized and/or has poor liquidity.

Revenue Composition: A by-line analysis of net premium volume is important to determine changes in the amount, type, geographic distribution, diversification and volatility of business written by a company, which can have either a beneficial or an adverse effect on its prospective profitability. Underwriting income, investment income, capital gains, asset values and, consequently, surplus can be significantly affected by external changes in economic, regulatory, legal and financial market environments, as well as by natural and man-made catastrophes.

Competitive Market Position: Analysis of an insurer's operating strategy and competitive advantages by line is essential to assess a company's ability to respond to competitive market challenges, economic volatility and regulatory change in relation to its book of business. Defensible and sustainable competitive advantages include control over distribution; multiple distribution channels; a low cost structure; effective utilization and leveraging of technology; superior service; strong franchise recognition; a captive market of insureds; easy and inexpensive access to capital; and underwriting expertise within the book of business.

Management: The experience and depth of management are important determinants for achieving success, because the insurance business is based on an underlying foundation of trust and fiscal responsibility. Competitive pressures within virtually every insurance market segment have amplified the importance of management's ability to develop and execute defensible strategic plans. A.M. Best's understanding of the operating objectives of a company's management team plays an important role in its qualitative evaluation of a company's current and future operating performance. This is particularly true when a company is undergoing a restructuring to address operational issues or balance sheet problems, or is actively raising capital.

Insurance Market Risk: Insurance market risk reflects the potential financial volatility that is introduced by, and associated with, the segment(s) of the insurance industry and/or the financial services sphere within which an organization operates. Such risks may also be considered systemic risks and are generally common to all market participants (i.e., financial services reform, health care reform, expansion of alternative markets and integration of health care providers). Insurance market risk can be biased either positively or negatively by a number of company-specific business factors.

Event Risk: Event risk can encompass a variety of sudden or unexpected circumstances that may arise and can impact an insurer's financial strength and its Best's Rat-

ing. When a sudden or unexpected event occurs, A.M. Best evaluates the financial and market impact to the insurer. Examples include the potential for major business and distribution disruption associated with significant litigation; the potential for a "run-on-the-bank" due to a loss of policyholder/distributor confidence; economic collapse; or the enactment of significant legislation. In addition, constraints imposed by regulators in the form of mandated rate rollbacks, extraordinary assessments and mandatory market lock-in arrangements in catastrophe-prone areas can adversely affect a company. Event risk may include changes in management, ownership, parental commitment or distribution; a legal ruling; or a regulatory development. Finally, event risks also can be influenced by potential regulatory or legislative reforms, economic conditions, interest rate levels and financial market performance, as well as societal changes. For international companies, as well as domestic insurers operating abroad, political climates and sovereignty risks also may have a significant bearing on event risk.

Holding Company Analysis

The analysis performed in the assignment of Best's Credit Ratings incorporates an assessment of material sources of risk to the rated entity. This includes the exposure to risk generated by activities at the parent/holding company and nonrated affiliates. Understanding the potential effect on a rated entity of the activities of the ultimate parent/holding company is key to developing a comprehensive view of the rated entity's risk profile. As a result, all ultimate parents are reviewed and analyzed to determine, at a minimum, whether the parent's activities reasonably could be expected to place a call on the capital of the rated operating company, or expose the rated entity to material risk – even in cases where the parent is assigned no public rating.

Holding companies and their associated capital structures can have a significant impact on an insurance company subsidiary's overall financial strength. Holding companies can provide subsidiaries with a level of financial flexibility, including capital infusions, access to capital markets and, in some cases, additional sources of cash flow from other operations. Likewise, debt and other securities are typically obligations of a holding company. Depending on the magnitude of such obligations, they can reduce the enterprise's financial flexibility, place a strain on future earnings and inhibit surplus growth at a subsidiary.

A.M. Best reviews both an insurer's capital structure and its holding company's capital structure to determine whether they are sound and unencumbered. This review includes an assessment of the quality of capital with a focus on the amount, composition and amortization schedule of intangible assets, as well as the presence of surplus notes at the operating company. Integral to an insurer's rating assignment is A.M. Best's assessment of a company's ability to meet the debt service and other obligations associated with its parent's capital structure, as well as the risks that a capital structure imposes on a company.

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A Best's Financial Strength Rating is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile. The Financial Strength Rating opinion addresses the relative ability of an insurer to meet its ongoing insurance policy and contract obligations. These ratings are not a warranty of an insurer's current or future ability to meet contractual obligations. The rating is not assigned to specific insurance policies or contracts and does not address any other risk, including, but not limited to, an insurer's claims-payment policies or procedures; the ability of the insurer to dispute or deny claims payment on grounds of misrepresentation or fraud; or any specific liability contractually borne by the policy or contract holder. A Financial Strength Rating is not a recommendation to purchase, hold or terminate any insurance policy, contract or any other financial obligation issued by an insurer, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser.

A Best's Debt/Issuer Credit Rating is an opinion regarding the relative future credit risk of an entity, a credit commitment or a debt or debt-like security. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile and, where appropriate, the specific nature and details of a rated debt security. Credit risk is the risk that an entity may not meet its contractual, financial obligations as they come due. These credit ratings do not address any other risk, including but not limited to liquidity risk, market value risk or price volatility of rated securities. The rating is not a recommendation to buy, sell or hold any securities, insurance policies, contracts or any other financial obligations, nor does it address the suitability of any particular financial obligation for a specific purpose or purchaser.

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A.M. Best Ratings on a National Scale

A Best's Issuer Credit Rating (ICR) is an opinion of an issuer/entity's ability to meet its ongoing senior financial obligations. The rating is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile, as well as the company's risk management and the impact of country risk factors. Best's Issuer Credit Rating is a global rating that allows the comparison of companies from all countries on the same credit scale.

A.M. Best has created a national scale rating that offers another way to utilize Best's Interactive Credit Rating Service.

For an operating insurance company, a national scale rating provides a relative opinion of financial strength within a single country. Therefore, the national scale rating assigned to an insurer in one country would not be comparable to a national scale rating assigned to an insurer in another country.

The primary reason the national scale was created is to address two related issues: 1) using only a particular section of the rating scale and 2) ratings that are grouped tightly, creating less differentiation. These phenomena reflect country-specific limiting factors the industry faces, including economic, political and financial system risk and lack of maturity in the insurance industry. The national scale rating allows for maximum differentiation among insurers operating in a given country.

The process of assigning a national scale rating begins with the assignment of a Best's Issuer Credit Rating. All companies that enter the A.M. Best national scale rating process will be assigned an A.M. Best global rating first. This process involves the same comprehensive, quantitative and qualitative analysis of a company's balance sheet strength, operating performance and business profile, as well as the company's risk management and the impact of country risk factors that apply to all companies rated by A.M. Best. For an in-depth discussion of the financial analysis undertaken at the insurance entity level, please see *Best's Credit Rating Methodology* (*BCRM*), which provides additional details on this process.

This criteria highlights the unique features and discusses the additional analysis that is undertaken in the assignment of a national scale rating.

As national scale ratings are only comparable within a certain country and not across countries, impairment statistics cannot be compared directly to a national rating. However, since the global rating is assigned as the base for the national rating, impairment rates can be inferred.

The national scale rating is a service that falls within A.M. Best's Interactive Credit Rating Service. At this time, national scale ratings will only be offered in Country Risk Tier (CRT) 3 through 5 countries for which there is adequate available market data to establish the national scale mapping, and the national scale ratings already are accepted as meeting a regulatory rating requirement or currently used within the country by market participants.

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Country Risk and National Ratings

Country risk, along with country-specific, industry-related risks, can and does have an impact on the financial strength of the overall insurance industry in a specific country. However, since a national

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scale rating is a relative analysis of companies within a country, these macro-level, country-specific risks that impact all companies operating in the country – and cannot be managed at the company level – are no longer rating differentiators, as all insurers in the country are subject to the same risks. Examples can include limited access to secure investable assets and limited industry maturity and/or regulation. Removal of these factors allows for the creation of a scale specific to that country.

It would be incorrect to suggest that a national rating removes country risk from the analysis. As stated previously, the assignment of a national scale rating is derived from a global scale rating, which would have incorporated A.M. Best's country risk criteria (*Evaluating Country Risk*). Therefore, the national scale rating captures the extent to which a particular company can mitigate and manage its country risk exposures. In other words, a company that manages its country risk exposure better than others would be relatively stronger than those that do not and therefore would have a higher national scale rating, all else being equal.

Constructing the National Scale Mapping

Each country's scale is created individually. As the degree of country risk increases, the distribution of ratings on the global rating scale within that country moves farther away from the top end of the global scale. To assess the proper ratings mapping, an understanding of the "average" rating for a country, along with the distribution of companies around that "average," must be achieved. Using country-specific information – including the Country Risk Tier, the Country Investment Class, the overall credit quality of the industry's potential investment portfolio and any current global ratings assigned within the country – the average national scale rating is estimated.

Exhibit 1
Relationship Between Ratings and CRTs

Above Average Rating
Average Rating
Below Average Rating

CRT-1	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-2	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-3	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-4	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-5	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-

To determine the distribution of ratings around the average national scale rating, a public data approach is used to analyze the active insurance companies within the market.

The evaluation of the distribution of financial strength in a country is done through analysis of nine individual factors:

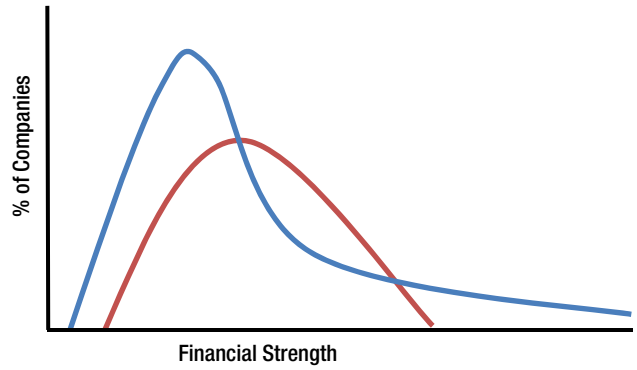
- Amount of Capital and Surplus
- Ratio of Cash & Fixed Investments to Total Investments
- Gross Leverage Ratio: (Gross Premiums Written + Total Gross Provisions/Capital & Surplus)
- Amount of Gross Premiums Written
- Return on Equity
- Return on Assets
- Retention Ratio: (Net Premiums Written/Gross Premiums Written)
- Combined Ratio: (Incurred Loss & Loss-Adjustment Expense [LAE] Ratio + Underwriting Expense Ratio)
- Total Amount of Assets

The industry average for each factor listed above is calculated for the country being evaluated. Each company operating within this market is evaluated based on distance from the industry average for each measure. This process is based on a three-year average, and the result is

a country-specific distribution of financial strength centered on the country's industry average.

This generates an estimate of the distribution of financial strength in the insurance market. Different markets have different distributions. A common distribution is a small number of market leaders that are relatively stronger than the market as a whole. Another common distribution is a large group of companies clustered around a similar global rating level. **Exhibit 2** illustrates these two potential distributions of financial strength.

Exhibit 2



Understanding the shape of this distribution allows A.M. Best to efficiently spread out the global ratings curve within a country in a way that allows for maximum use of the rating scale within the country, thus creating the greatest degree of differentiation among national market participants.

This approach to the creation of a national rating scale is consistent with A.M. Best's belief that country factors, while clearly important and able to negatively impact an insurer's global rating, should not act as a ceiling to companies on the global scale.

The National Scale in the A.M. Best Rating Process

As stated previously, the analysis of an insurer begins with the assignment of a Best Issuer Credit rating.

This global rating then will be "mapped" to a national scale rating based on the country-specific national scale mapping that has been developed for the company's country of domicile. In cases where one global ICR level maps to more than one national scale rating, a rating committee will decide which level, in accordance with the mapping, is appropriate given the relative financial strength of the insurer. To denote the difference between an A.M. Best global rating and an A.M. Best national scale rating, the credit rating will have a ".XX" where XX represents a two-letter country code. In other words, for Mexico (full mapping illustrated in **Exhibit 3**), a national scale rating might appear as a+.MX.

Rating Definitions

The following are the rating definitions for A.M. Best's national scale rating where ".XX" represents a two-letter country code.

aaa.XX: Assigned to insurance companies that have, in A.M. Best's opinion, an exceptional ability to meet their ongoing financial obligations relative to other insurers in the country.

aa.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a superior ability to meet their ongoing financial obligations relative to other insurers in the country.

a.XX: Assigned to insurance companies that have, in A.M. Best's opinion, an excellent ability to meet their ongoing financial obligations relative to other insurers in the country.

bbb.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a good ability to meet their ongoing financial obligations relative to other insurers in the country.

bb.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a fair ability to meet their ongoing financial obligations relative to other insurers in the country.

b.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a marginal ability to meet their ongoing financial obligations relative to other insurers in the country.

ccc.XX, cc.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a weak ability to meet their ongoing financial obligations relative to other insurers in the country.

c.XX: Assigned to insurance companies that have, in A.M. Best's opinion, a poor ability to meet their ongoing financial obligations relative to other insurers in the country.

An **Outlook** is assigned to a National Scale Issuer Credit Rating (aaa to c) to indicate its potential direction over an intermediate term, generally defined as 12 to 36 months. An outlook can be:

Outlook	Definition
Positive	Indicates possible rating upgrade due to favorable financial/market trends relative to the current rating level.
Negative	Indicates possible rating downgrade due to unfavorable financial/market trends relative to the current rating level.
Stable	Indicates low likelihood of a rating change due to stable financial/market trends.

In addition, a National Scale Rating can be put under review and assigned the following modifier.

Modifier	Descriptor	Definition
u	Under Review	Indicates the rating may change in the near term, typically within six months. Generally is event driven, with positive, negative or developing implications.

Exhibit 3
Best's Global ICR Scale vs. Mexico National Scale

Global ICR Scale	National Scale/Mexico
a	aaa.MX
a-	aa+.MX to aa.MX
bbb+	aa-.MX
bbb	a+.MX to a.MX
bbb-	a-.MX
bb+	bbb+.MX to bbb.MX
bb	bbb-.MX
bb-	bb+.MX
b+	bb.MX
b	bb-.MX to b+.MX
b-	b.MX
ccc+	b-.MX to ccc+.MX
ccc	ccc.MX
ccc-	ccc-.MX
cc	cc.MX
c	c.MX

Changes to the National Scale Rating

An insurer's national scale rating can change for two primary reasons:

- The analysis of the company's financial strength leads to a change in that company's rating.

- The country- (and industry-) specific characteristics lead to a change in the overall national scale mapping for the country of domicile.

The national scale mapping will be reviewed regularly for each country.

Published by A.M. Best Company

Methodology

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A Best's Financial Strength Rating is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile. The Financial Strength Rating opinion addresses the relative ability of an insurer to meet its ongoing insurance policy and contract obligations. These ratings are not a warranty of an insurer's current or future ability to meet contractual obligations. The rating is not assigned to specific insurance policies or contracts and does not address any other risk, including, but not limited to, an insurer's claims-payment policies or procedures; the ability of the insurer to dispute or deny claims payment on grounds of misrepresentation or fraud; or any specific liability contractually borne by the policy or contract holder. A Financial Strength Rating is not a recommendation to purchase, hold or terminate any insurance policy, contract or any other financial obligation issued by an insurer, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser.

A Best's Debt/Issuer Credit Rating is an opinion regarding the relative future credit risk of an entity, a credit commitment or a debt or debt-like security. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile and, where appropriate, the specific nature and details of a rated debt security. Credit risk is the risk that an entity may not meet its contractual, financial obligations as they come due. These credit ratings do not address any other risk, including but not limited to liquidity risk, market value risk or price volatility of rated securities. The rating is not a recommendation to buy, sell or hold any securities, insurance policies, contracts or any other financial obligations, nor does it address the suitability of any particular financial obligation for a specific purpose or purchaser.

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April 2, 2013

Risk Management and the Rating Process for Insurance Companies

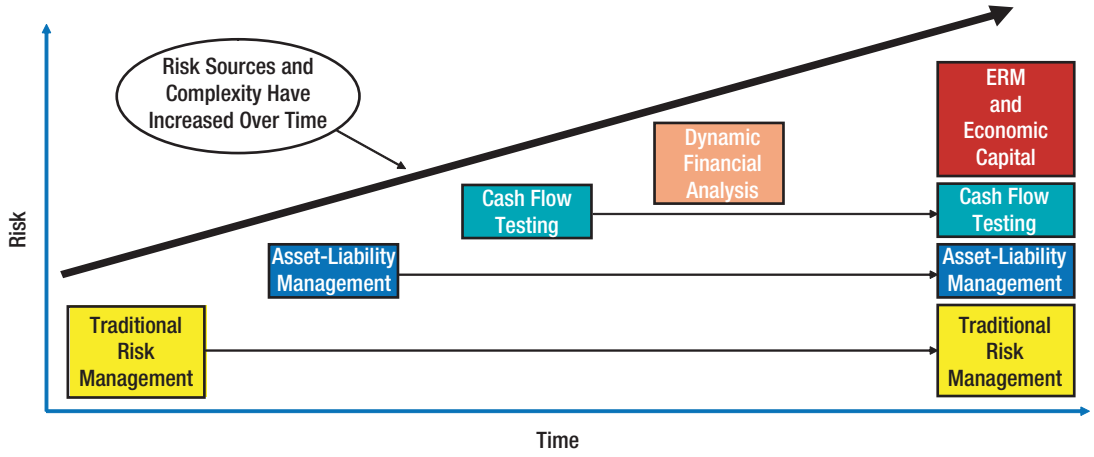
Insurance companies make money by managing various types of risk for individuals, municipalities and corporate entities—the risk of dying too young, experiencing a loss due to man-made or natural disasters, outliving your assets, losing income capacity through business interruption, and so on. Where there is risk, there is uncertainty, and where there is uncertainty, there is exposure to volatility.

Risk management is the process by which companies systematically identify, measure and manage the various types of risk inherent within their operations. The fundamental objectives of a sound risk management program are:

- To manage the organization's exposure to potential earnings and capital volatility
- To maximize value to the organization's various stakeholders.

However, it is important to note that the objective of risk management is not to eliminate risk and volatility, but to understand it and manage it. Risk management allows organizations to identify and quantify their risks; set risk tolerances based on their overall corporate objectives; and take the necessary actions to manage risk in light of those objectives. When done right, risk management fosters an operating environment

Exhibit 1
Insurance Industry Continues to Respond to Risk Dynamics



Source: A.M. Best Co.

Additional Information

Criteria

Catastrophe Analysis in A.M. Best Ratings

Understanding BCAR for Property/Casualty Insurers

Understanding BCAR for Life/Health Insurers

Special Report:

Variable Annuities – Changing The Industry's Risk Dynamics

Survey Reveals Leaders, Laggards in P/C Enterprise Risk Management

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This publication updates the criteria report issued January 25, 2008 to include additional events that have contributed to the increased level of risk and uncertainty for the insurance industry (pages 5 and 6), as well as a more detailed explanation of how an insurer's risk profile and risk management capability impact the rating process (pages 16 and 17).

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that supports both strong financial controls and risk mitigation, as well as prudent risk-taking to seize market opportunities.

Risk management tools and practices across the insurance industry have advanced significantly in recent years—and it's a good thing they have. The industry has experienced a number of events and trends since the turn of the millennium that have exposed, and will continue to expose, insurers to increased levels of risk and uncertainty.

Developments such as the implementation of enterprise risk management programs, including economic capital models, more sophisticated catastrophe management and dynamic hedging programs, have headlined efforts of the insurance industry to manage its growing exposure to potential volatility in earnings and capital. These recent additions to the industry's risk management arsenal are the latest evidence of ongoing efforts to respond to changing risk dynamics.

In this paper, A.M. Best explores the key risk management trends in the insurance industry and describes how risk management impacts the overall rating process and the development of capital requirements. Below are some of the highlights and key observations.

Enterprise Risk Management and the Risk Management Framework

• A.M. Best believes that ERM – establishing a risk-aware culture, using sophisticated tools to consistently identify and manage, as well as measure risk and risk correlations – is an increasingly important component of an insurer's risk management framework.

• The foundation of any risk management framework is the compilation of traditional risk management practices and controls that historically have helped companies monitor and manage their exposure to the five key categories of risk: credit, market, underwriting, operational and strategic.

• What's new about ERM is the "E," which represents the development of an enterprise-wide view of risk through which insurers consistently can identify, quantify and manage risk on a more holistic basis.

Risk Management and Ratings

• The assignment of an interactive Best's Rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile as compared with A.M. Best's quantitative and qualitative standards.

• A.M. Best believes that risk management is the common thread that links balance sheet strength, operating performance and business profile. Risk management fundamentals can be found in the strategic decision-making process used by a company to define its business profile, and in the various financial management practices and operating elements of an insurer that dictate the sustainability of its operating performance and, ultimately, its exposure to volatility in its capital.

• As such, if a company is practicing sound risk management and executing its strategy effectively, it will maintain a prudent level of risk-adjusted capital and perform successfully over the long term – common objectives of both A.M. Best ratings and risk management.

• A.M. Best believes that assessing an insurer's risk management capabilities – within the context of determining an insurer's financial strength – should be viewed in light of a company's scope of operations and the complexity of its business.

• A.M. Best believes to remain competitive in today's dynamic environment, build sustainable earnings and capital accumulation, and ultimately, maintain high ratings, complex organizations – such as insurers participating in the global reinsurance and retirement savings markets – must develop and constantly refine an ERM framework, including the development of internal economic capital modeling.

• For organizations with a more limited operating scope focusing on more stable, traditional lines of business, the ERM process may be less comprehensive or complex – at this time. However, the development of principles-based solvency approaches such as Solvency II in Europe, the "Own Risk and Solvency Assessment" reporting requirements in the United States, and the significant efforts of sophisticated insurers to raise the bar on the risk-management front, ultimately will become a competitive issue driving continued improvement and integration of ERM concepts for all insurers, regardless of size.

• Whether utilizing a formalized ERM framework, integrating selected elements of ERM into an insurer's operating practices or relying solely on a traditional risk management process, A.M. Best perceives risk management as paramount to an insurer's long-term success. As such, within the rating process, each company – regardless of its size or complexity – is expected to explain how it identifies, measures, monitors and manages risk.

• An insurer that can demonstrate strong risk-management practices integrated into its core operating processes, and effectively execute its business plan, will maintain favorable ratings in an increasingly dynamic operating environment. A.M. Best believes that risk management is embedded in an insurer's "Corporate DNA" when risk metrics are integrated into corporate, business line and functional area objectives, and when risk-return measures are incorporated into financial planning and budgeting, strategic planning, performance measurement and incentive compensation.

Risk Management and Best's Capital Adequacy Ratio (BCAR)

• BCAR is an important quantitative tool that helps A.M. Best differentiate between companies and indicate whether a company's capitalization is appropriate for a particular rating level. However, BCAR by itself never has been the sole basis for determining any Best's Rating.

• Other considerations include the various financial management practices and operating elements of an insurer that ultimately dictate the sustainability of its operating performance, and its exposure to capital volatility. In other words, a company's relative risk management capabilities are a key factor in determining the BCAR capital requirement for each rated insurer.

• Given the insurance industry's evolving risk profile and the significant recent advancements made in risk management tools and practices, A.M. Best recognizes that a more economic, prospective view of capital can be another valuable supplement to the rating process. As a result:

• A.M. Best will consider allowing companies to maintain lower BCAR levels relative to the guideline for their ratings based on a case-by-case evaluation of an insurer's overall risk management capabilities – relative to its risk profile.

• A.M. Best is exploring ways to incorporate stochastic modeling in the development of risk factors within the BCAR model, and to more directly tie probability of default to the determination of capital required to support individual rating levels.

• A.M. Best also will consider the use of company-provided capital models in developing capital requirements within the rating evaluation process.

Back to Basics: Financial Strength Ratings and Risk Management

The objective of Best's Ratings for insurance companies, both Financial Strength Ratings (FSR) and Long-Term Issuer Credit Ratings (ICR), is to provide an opinion as to an insurer's ability to meet its senior financial obligations, which are its obligations to policyholders. The assignment of an interactive rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile, as compared with A.M. Best's quantitative and qualitative standards.

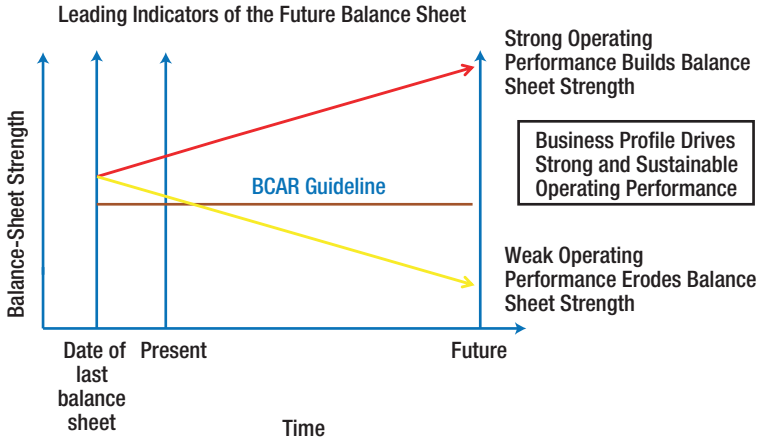
In determining a company's ability to meet its current and ongoing obligations, the most important area to evaluate is its balance sheet strength, since it is the foundation for policyholder security. Balance sheet strength measures the exposure of a company's surplus to its operating and financial practices.

One of the primary tools used in the evaluation of balance sheet strength is Best's Capital Adequacy Ratio (BCAR), which provides a quantitative measure of the risks inherent in a company's investment and insurance profile, relative to its adjusted capital. A.M. Best's analysis of the balance sheet also encompasses a thorough review of various financial tests and ratios over a five-year period.

The assessment of balance sheet strength includes an analysis of an organization's regulatory filings, including the GAAP or IFRS balance sheet, at both the operating insurance company and consolidated level. To understand the strength and flexibility of an insurer's balance sheet, a variety of tests and measures are reviewed, which include an assessment of the corporate capital structure, financial leverage, fixed charge coverage, liquidity, and historical sources and uses of capital.

Exhibit 2

Impact of Operating Performance & Business Profile on the Balance Sheet



Source: A.M. Best Co.

While balance sheet strength is the foundation of the rating process, the balance sheet provides only an assessment of capital adequacy at a point in time. A.M. Best views operating performance and business profile as leading indicators when measuring future balance sheet strength and policyholder security (see **Exhibit 2**).

The term "future" is the key, since ratings are prospective and go well beyond a "static" balance sheet view. Profitability is the engine that ultimately

drives capital, and looking out into the future enables the analyst to gauge a company's ability to preserve and/or generate new capital over time. In many respects, what determines the relative strength or weakness of a company's operating performance is a combination of its business profile and the ability of a company to effectively execute its strategy.

A strongly performing company, over time, will generate earnings sufficient to maintain a prudent level of risk-adjusted capital and optimize stakeholder value. Strong performers are those companies whose earnings are relatively consistent and deemed to be sustainable. Because of their track record and better-than-average earnings power, these companies typically benefit from higher ratings and/or lower capital requirements relative to their peers.

On the other hand, companies that have demonstrated weaknesses in their earnings through either consistent losses or volatility are more likely to struggle to maintain or improve capital in the future. For these reasons, these companies typically are rated lower than their counterparts that perform well and/or usually are held to higher than minimum capital requirements to minimize the chance of being downgraded if current trends continue.

A.M. Best believes that risk management is the common thread that links balance sheet strength, operating performance and business profile. Risk management fundamentals can be found in the strategic decision-making process used by a company to define its business profile, and in the various financial management practices and operating elements of an insurer that dictate the sustainability of its operating performance and, ultimately, its exposure to capital volatility. As such, if a company is practicing sound risk management and executing its strategy effectively, it will preserve and build its balance sheet strength and perform successfully over the long term – common objectives of both A.M. Best ratings and risk management.

"Necessity Is the Mother of Invention"

Risk management tools and practices across the insurance industry have advanced significantly in recent years—and it's a good thing they have. The industry has experienced a number of events and trends since the turn of the millennium that have exposed, and will continue to expose, insurers to increased levels of risk and uncertainty:

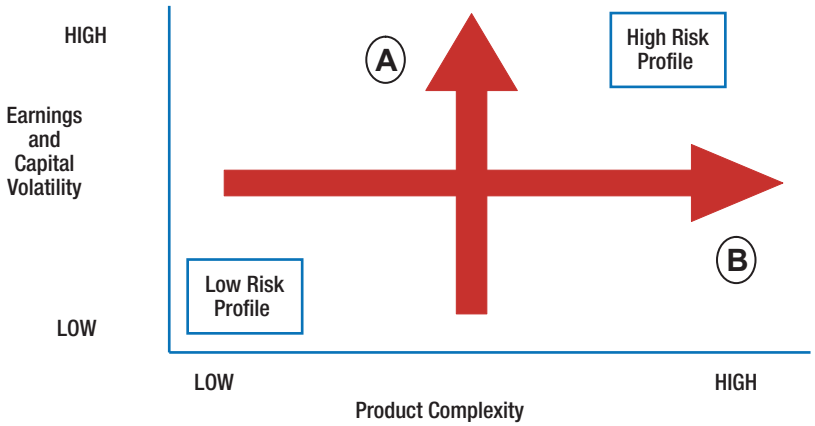
- Economic conditions that generated sharp declines in equity and real estate markets, deterioration in credit markets and prolonged record-low interest rate environments.

- U.S. government impasse on fiscal policy and national debt that results in more pessimistic views of the credit quality of government debt and whether the debt is risk free.

- The Eurozone crisis that

Exhibit 3

Industry Risk Profile Trends



A) Exposure to Earnings and Capital Volatility increasing reflects the impact of: terrorism and cat exposures on loss ratios and reinsurance costs; additional risk and costs related to more complex products; and general economic conditions.
B) Product Complexity increasing due to market demand for more sophisticated products and additional guarantees, as well as heightened competition and regulatory scrutiny.
Source: A.M. Best Co.

resulted in large investment losses related to sovereign debt, sovereign default, banking bailouts and a recession that had worldwide impacts.

• The continuing geopolitical unrest and the ongoing threat of terrorist attacks.

• Increased hurricane activity that produced multiple landfalls in a single season; repeated landfalls in areas assumed to have low annual probabilities of landfall; and damage farther inland than expected.

• Stronger than anticipated earthquake activity that demonstrated the correlation of losses across life, health and property/casualty sectors during extreme events.

• Record flooding impacting global supply chains and creating business interruption worldwide.

• The possible emergence of a global "bird flu" pandemic.

• Converging regulatory and economic views of capital adequacy, which are evident with the advent of EU Solvency II and principles-based regulatory reporting requirements in the United States.

In addition to these event-related risk triggers, insurers – particularly in the retirement savings market – have been taking on more risk through their product development activities as insurers try to proactively address the ever-changing needs of an aging population.

The result is that the insurance industry overall has been trending toward a higher risk profile.

While the risks and level of uncertainty facing the industry have grown, the more prudent and capable insurers have taken steps to more effectively manage and mitigate these risks and preserve policyholder security. Two areas where insurers have employed more advanced methods to address specific emerging risks are catastrophe risk management and dynamic hedging programs.

Common Themes – Principles-Based Solvency Requirements and Best's Rating Approach

One of the key drivers of change in the insurance industry's risk management landscape has been the convergence of regulatory and economic views of capital adequacy. Regulators across the globe, including those in Europe, the United States and Canada, are moving away from their traditional factor- or rules-based solvency platforms to a more dynamic, principles-based regime. Furthermore, Solvency II in Europe; work being undertaken by various National Association of Insurance Commissioners (NAIC) working groups in the United States; and the most recent proposals prepared by the Minimum Continuing Capital and Surplus Requirements (MCCSR) Advisory Committee (MAC) in Canada, all embrace core concepts that integrate risk management, corporate governance, internal capital modeling and increased transparency and disclosure as key components of the evolving capital adequacy framework.

These new regulatory regimes are attempting to tap into both insurance industry and supervisory best practices to create principles-based solvency requirements aimed at better reflecting each individual company's risk profile and risk management practices. This is accomplished primarily by allowing insurers to use internally developed scenario or stochastic models as the basis for reporting their regulatory solvency requirement, if they meet certain minimum standards set by the regulators. In addition to the focus on more sophisticated financial requirements, the new solvency framework calls for an integrated set of regulatory requirements that consider risk management, corporate governance, market conduct and disclosure – as well as a dynamic and constructive internal risk assessment process by insurance company management – as key elements of a comprehensive solvency regime.

A.M. Best strongly supports the core concepts underlying these principles-based solvency regimes. A.M. Best believes these integrated platforms for the assessment of insurer capital adequacy promote greater emphasis on many of the same quantitative and qualitative aspects of financial strength and long-term capital adequacy that are the foundation of A.M. Best's interactive rating evaluation. Some of the common themes shared by these emerging solvency requirements and A.M. Best's rating approach are summarized below.

Focus on risk management as part of a balanced quantitative and qualitative review. The assignment of an interactive Best's Rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile as compared with A.M. Best's quantitative and qualitative standards. A.M. Best believes that risk management is the common thread that links balance sheet strength, operating performance and business profile. An insurer that can demonstrate strong risk management practices that are integrated into its core operating processes, and effectively execute its strategic business plan, will maintain favorable ratings in an increasingly dynamic operating environment.

Support for the development of internal capital models. A.M. Best will consider the use of company-provided capital models in developing capital requirements within the rating evaluation process. A.M. Best believes that the primary benefit of a strong internal capital model is the aid it provides company management in understanding and quantifying key risks and their correlations from a holistic point of view. The true value of any capital model is realized only when management employs it in the strategic decision-making process when assessing the impact of different business strategies, asset allocations, reinsurance structures, etc.

Risk management and capital modeling are not "one size fits all." A.M. Best believes to remain competitive in today's dynamic environment, build sustainable earnings and capital accumulation, and ultimately, maintain high ratings, complex organizations – such as insurers participating in the global reinsurance and retirement savings markets – must develop and constantly refine an ERM framework, including the development of internal economic capital modeling. For organizations with a more limited operating scope focusing on more stable, traditional lines of business, the ERM (and capital modeling) process may be less comprehensive or complex – at this time. However, the pending implementation of principles-based capital requirements, and the significant efforts of sophisticated insurers to raise the bar on the risk management front, ultimately will become a competitive issue driving continued improvement and integration of ERM concepts for all insurers, regardless of size.

Catastrophe Risk Management

A.M. Best considers catastrophic loss, both natural and man-made, to be the No. 1 threat to the financial strength and policyholder security of property and casualty insurers because of the significant, rapid and unexpected impact that can occur. Of particular concern is the rapid escalation in insured exposures over the past decade – reflecting demographics and rising property values, combined with the increased frequency and severity of natural disasters.

Some experts in the fields of climatology and meteorology have submitted that global warming is contributing to the unprecedented number of severe events worldwide, representing a fundamental shift in the expectation for the frequency of their occurrence in the future. In addition, the worldwide political environment and the technology of warfare have experts prognosticating that man-made events will occur with increasing frequency. Relatively benign storm seasons and the absence of a major, man-made catastrophe do not change the long-term dynamics; rather, they demonstrate the difficulty and uncertainty in predicting catastrophic events.

To manage and monitor catastrophic risk, most property and casualty insurers have utilized increasingly sophisticated catastrophe modeling tools, primarily those provided by specialized firms with extensive meteorological, seismological, statistical and technical resources. Hurricane seasons with multiple landfalling hurricanes serve as a reminder that while the models are extraordinarily useful in the analytical and underwriting process, they are only tools and cannot be relied upon solely for the management of catastrophe exposures.

Strong catastrophe risk management is more than just an advanced model. Data quality, constant monitoring of aggregate and individual exposures, disciplined adherence to underwriting controls, and implementation of an integrated reinsurance program are all important elements of strong catastrophe risk management.

During the rating evaluation process, all these areas are assessed and considered along with the financial flexibility of a company to determine its ability to first, avoid a material loss to capital, and second, respond to any significant capital deterioration from such an event.

Dynamic Hedging

The retirement savings segment long has been the growth engine for the domestic life insurance industry. As the baby boom generation nears retirement, the opportunities for future growth in this business segment are enormous for companies that are well positioned in terms of product development, distribution and brand. However, with these potential rewards come significant risks – including risks that the insurance industry has not traditionally underwritten – that A.M. Best believes expose the industry's earnings and capital base to greater volatility, both now and in the future.

The insurance industry long has been managing a host of risks inherent in offering annuities and other products and services within the retirement savings market. These risks include interest rate risk, asset/liability management and disintermediation risk. However, with the emergence of secondary guarantees within the variable product market and the introduction of equity-indexed products, new risks are emerging that will significantly influence the long-term financial strength of retirement savings providers.

The companies offering these benefit features are subject to two major risk categories that are, in some respects, outside the traditional risk parameters of the insurance industry:

• Policyholder-based risks, which represent the exposure to adverse development based on the optionality in various product designs where the policyholder can control different elements of the product. As a result, many of the actions a policyholder can take can profoundly change the risk dynamics of the product.

• Capital-market-based risks, which are derived from the fact that the insurance company is guaranteeing certain returns on the assets invested. These guarantees put some of the investment risk, which variable annuities previously had passed on to the policyholder, back onto the insurance company's balance sheet.

Insurers have made significant strides in limiting the impact of policyholder-based risks, through more intelligent product design that either limits the optionality within the product or ties certain policyholder decisions to the amount of protection provided by the guarantee.

The top writers of variable annuity products also have developed and implemented sophisticated hedging programs that help protect the company against adverse movements in the capital markets. Sophisticated risk management through hedging has become a critical factor for success in the variable annuity market with the widespread consumer acceptance of new living benefits. These hedging programs use derivative instruments and are designed to mitigate the negative impact of swings in the equity markets.

However, similar to efforts made to predict and manage natural and man-made catastrophe risk, dynamic hedging is far from an exact science. As such, as mentioned previously, the rating evaluation process considers both the strength of the risk-mitigation process and the insurer's financial flexibility when assessing financial strength.

"E"RM – What's New?

Enterprise risk management (ERM) has been one of the most significant and widespread additions to the insurance industry's vocabulary in recent memory. While many may see ERM as a completely new process, A.M. Best considers ERM as a natural extension of an insurer's fundamental risk management practices, with the foundation still rooted in sound traditional controls and policies encompassing the five key categories of risk: credit, market, underwriting, operational and strategic.

What's new about ERM is the "E," which represents the development of an enterprisewide view of risk where insurers can identify, quantify and manage risk on a more holistic basis. ERM takes into consideration the individual risks at hand, as well as any correlations and interdependencies of risk across the entire organization. By overlaying this "enterprise" view of risk on top of the traditional silo approach to managing individual risks, insurers are creating a more structured, integrated framework that – if prudently applied – can increase the value of the firm, while at the same time providing financial security to the organization.

A.M. Best believes ERM encompasses three key areas.

• Culture – the establishment of an environment throughout an organization, from the board level to senior management to business line management to the employee, that embeds risk awareness and accountability in daily operations, its corporate "DNA."

• Identification and Management – the ability to consistently identify key risks across the entire organization, and to establish uniform controls and procedures to effectively manage and mitigate the impact of those risks to the organization.

• Measurement – the use of sophisticated tools and data collection to quantify risks, including the impact of risk correlations within and among the five categories of risk, considering

Exhibit 4
ERM Characteristics—Culture

STRONG CHARACTERISTICS	WEAK CHARACTERISTICS
Set the Tone at the Top	
Senior management establishes an environment and corporate framework that embeds risk awareness throughout the organization.	Senior management does not embrace and communicate a proactive approach to assessing risk within the organization.
Organization/governance structure recognizes the importance of an integrated risk management approach by placing responsibility for corporatewide risk management with a member(s) of senior management with access to the board.	Risk management activities are fragmented throughout the organization and /or typically are viewed as individual tasks completed by lower level staff.
Board and senior management receive, and constructively critique, frequent reports on risk metrics and updates on key risk-management activities across the entire organization.	Board is not routinely apprised of ongoing risk management activities and tends to view risk management as a reactive, rather than proactive, process.
Senior management displays thorough understanding of key risks and risk mitigation practices across the entire organization.	Detailed understanding of the drivers of risk and the policies and procedures to mitigate risk resides at the business line or functional level.
Management objectives, and incentive compensation, are tied to risk management objectives and risk/return measures approved by the board.	Management objectives and incentive compensation are tied to more traditional measures of top-line growth or bottom-line results, without considering the importance of risk-adjusted returns and risk management.
Establish and Clearly Communicate Risk Management Objectives	
Board and senior management clearly define corporate risk profile – risk tolerance and risk management objectives – that supports overall corporate goals and expectations of key stakeholders.	Board and senior management view overall corporate goals and the establishment of risk tolerances as mutually exclusive activities.
Senior management clearly communicates corporate risk profile to business unit management and requires business unit management to implement appropriate risk management practices.	Corporate risk profile and risk tolerances, or business unit management accountability, are not clearly documented or communicated.
Define Roles and Responsibilities	
Appropriate segregation of duties between those responsible for monitoring/measuring risk and those responsible for making risk decisions.	Members of management responsible for monitoring/measuring risk also have the authority to make risk decisions.
Establish a separate, highly qualified department to take a holistic view of the company and coordinate risk management activities across the enterprise, led by a member of senior management – chief risk officer (CRO).	Risk management activities are embedded within various business lines and/or functional areas.
CRO is responsible for the establishment of an appropriate risk management framework, measuring and monitoring risk across the enterprise, providing information to the board and senior management, and facilitating the ongoing risk management activities at the business-unit level.	No corporatewide risk management framework exists. Risk management information is not consistently provided to board or senior management.
Chief Executive Officer is responsible for executing corporate strategy based on information provided by the CRO and other inputs, and is ultimately responsible for the performance of the organization relative to its risks.	Risk management objectives and risk metrics are not fully integrated into overall corporate strategy.
Board provides active oversight and is responsible for understanding and constructively challenging management's assessment of key risks to the enterprise and their approach to managing these risks.	Board is engaged on a case-by-case basis in reaction to loss events that already have occurred, rather than proactively encouraging ongoing risk assessment and analysis.
Business unit managers are directly responsible for managing risk within their areas of responsibility and implementing risk management practices in line with corporate directives.	Accountability for managing risk is not clearly defined.
Strategic Decision-Making Process	
Business strategy and capital allocation are based upon risk-adjusted returns and other risk metrics consistent with the corporate risk profile.	Strategic and financial planning processes are not fully integrated with risk management framework.
Financial planning and budgeting process measures impact of projected financial results on corporate risk profile.	Financial planning and budget process is seen solely as a financial reporting mechanism, not as part of an integrated strategic and risk management system.
Management can demonstrate how the risk/return decisions have improved/will improve the value of the company.	Management views risk management activities only as tools to avoid deteriorating value, not as a vehicle to create value through prudent risk taking.

Source: A.M. Best Co.

the impact of general economic conditions, industry-specific events and extreme events, and report these risk assessments to senior management on a regular basis.

ERM Characteristics – Culture

A.M. Best believes effective ERM starts at the top. In order to set the tone for sound risk management, A.M. Best believes there need to be clear directives established by senior

Exhibit 5
ERM Characteristics—Identification & Management

STRONG CHARACTERISTICS	WEAK CHARACTERISTICS
Ability to identify, monitor and manage risk among (and within) the five categories of risk – underwriting, market, credit, operational, and strategic.	Risk management process conducted independently throughout different departments and does not consider the potential impact of risk correlations.
Implemented an ongoing process for identifying and managing significant operational risks.	Operational risks are not captured or are discussed only after an event occurs.
Produce "exception reports" for all instances where scores/ratios are outside maximum tolerances and list detailed plans to remedy.	Detailed analysis is only done once an issue impacts financial statements.
Decisions to enter/withdraw certain product lines, territories, coverages based upon impact on the entire corporation's risk/return measure – demonstrating an organization's ability to measure natural hedges/correlations.	Strategic decisions are made on a silo basis at the business-line level and are not viewed in light of the overall corporate risk/return objectives.
Reinsurance purchases are made based on overall corporate risk tolerances and provide protection from risk aggregation across lines or divisions.	Analysis of the impact of individual purchases on the overall corporate risk profile is not done.
Company adjusts its corporate risk profile and risk-management process based on past experience, pro forma model results and future stakeholder expectations and current market conditions.	Management does not learn from its mistakes by analyzing risk dynamics on an ongoing basis, and/or does not view the corporate risk profile as a constantly evolving concept.

Source: A.M. Best Co.

Exhibit 6
ERM Characteristics—Measurement

STRONG CHARACTERISTICS	WEAK CHARACTERISTICS
Use of corporate scorecards to assess risk and measure against predetermined tolerances.	Risk management information is compiled and reviewed on an "ad hoc" basis, as opposed to being developed and analyzed routinely versus expected results and predetermined risk tolerances.
"What if" scenario testing is done to quantify impact of unusual/unforeseen/unlikely events on corporate risk profile (i.e. rating downgrade, interest rate shock, stock market crash).	Financial planning process does not include stress testing of baseline assumptions, or any analysis of extreme events.
Management reports give information using risk/return measures that identify areas where risk tolerances and objectives are not being met.	Management reports either don't exist or are prepared using only traditional financial reporting measures and do not track performance versus risk tolerances.
Use of well understood, proven economic capital (EC) models that capture all risks of the enterprise.	If an EC model exists, the model is not robust or is not widely utilized as a management tool.
EC model updated, tested and run frequently.	EC model is run and reviewed only annually and is not viewed as a decision-making tool.
Risk/return measures and EC models can be created for short, medium and longtime horizons.	EC model and risk/return measures are viewed as annual planning tools that are not incorporated in ongoing business management.
Management reports and capital models capture correlations across the five risk categories, considering the impact on all risk categories of: - general economic conditions - industry-specific conditions - extreme events	Risk metrics and capital models do not routinely analyze effects of outside economic factors and market developments on risk correlations.
Risk-based or economic capital model can identify scenarios in which individual risks provide natural hedges to mitigate overall exposure, as well as risks that can compound overall exposure.	Models do not provide detail by scenario to quantify the impact of risk correlations.
Ability to determine effectiveness of company-implemented risk mitigation techniques, such as reinsurance and hedging.	Models do not provide detail to quantify value added by risk-mitigation techniques.

Source: A.M. Best Co.

management and the board. Ultimately, it is the importance that the board of directors and senior management place on risk management that will determine the extent to which the management of risk is integrated across the entire organization.

A strong risk-aware culture also is based on a common language and understanding of risk among corporate officers and directors that enables collaboration on risk management issues across an organization, and a common set of risk-based rules governing accountability and incentive compensation.

Therefore, an essential part of assessing an insurer's risk management capabilities is gaining an understanding of an organization's corporate culture and the degree to which risk management is imbedded within the organization's decision-making process. Strong and weak ERM characteristics are listed in **Exhibit 4**.

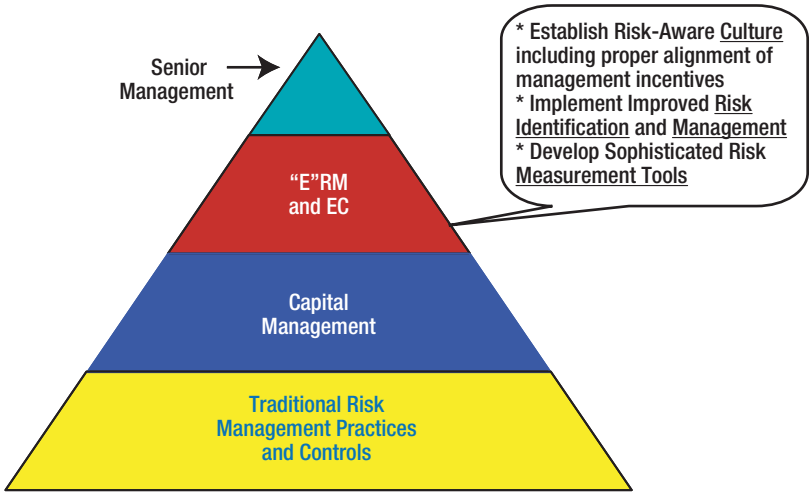
ERM Characteristics – Identification and Management

A strong risk management culture is the starting point; however, the effectiveness of any risk management framework depends on an insurer's ability to identify the key risks to the organization and to establish detailed controls and procedures to manage the potential impact of those risks to stakeholder value. Traditional risk management practices incorporate a wide variety of risk identification and management activities across the five categories of risk. What ERM adds is a more comprehensive approach to the identification and management of risk. ERM also incorporates the development of a consistent, corporatewide set of guidelines that formalize the broader risk process and allow for the sharing of information across business lines and functions. Strong and weak ERM characteristics are listed in **Exhibit 5**.

ERM Characteristics – Measurement

In addition to identifying and managing individual risks, an extremely important component of ERM is the ability to consistently quantify those risks using sophisticated tools and data-collection procedures that ensure the data's integrity. Another key component of measurement is the ability to assess the impact of risk correlations across the enterprise. Certain correlations may be present that create natural hedges across business lines. Other correlations may be identified that could compound risks. A.M. Best believes that companies with more complex risks need to demonstrate that risk models appropriately reflect such correlations. Strong and weak ERM characteristics are listed in **Exhibit 6**.

Exhibit 7
Enterprise Risk Management Framework



Source: A.M. Best Co.

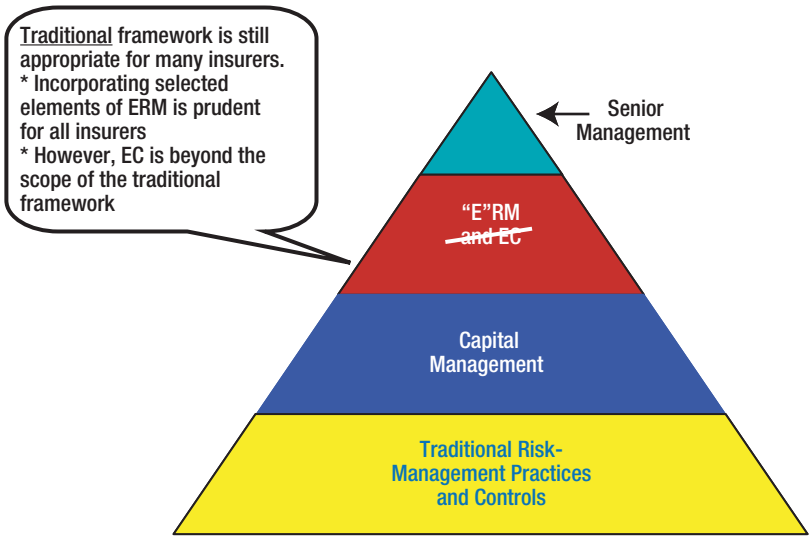
ERM and the Risk Management Framework

A.M. Best believes that ERM – establishing a risk-aware culture; using sophisticated tools to identify and manage, as well as measure risk; and capturing risk correlations – is an increasingly important component of an insurer's risk management framework.

The foundation of the risk management framework is the

compilation of traditional risk management practices that historically have helped companies monitor and manage their exposure to the five key categories of risk: credit, market, underwriting, operational and strategic risk. These practices include a wide variety of processes and controls that enable an insurer to identify and monitor specific types of risk (see **Exhibit 9**).

Exhibit 8
Traditional Risk Management Framework



Source: A.M. Best Co.

• Credit Risk – Counterparty credit exposure from all potential creditors, including agents, reinsurers, bond issuers and large, institutional clients.

• Market Risk – Exposure to liquidity events, asset/liability mismatches and risks in investment portfolios due to changes in equity prices, commodity prices, interest rates and exchange rates.

• Underwriting Risk – Financial exposures arising from various activities integral to the underwriting of insurance products, including: product development; regulatory relations; establishing reserves and pricing metrics; analyzing loss experience, mortality, morbidity and lapses; and loss trends.

Insurers and the Capital Markets

The insurance industry and the capital markets have become increasingly intertwined in recent years, a direct result of the industry's heightened risk profile and the economic realities of low interest rates and uncertain credit and equity markets. For example, an increasing number of insurers effectively (and increasingly) are transferring policyholder obligations to the capital markets via securitizations. Still others are utilizing various nontraditional capital-raising techniques offered by the capital markets, including hybrid securities and contingent capital arrangements, to bolster their capital positions and provide additional financial flexibility.

These various capital-markets activities are to a large extent the result of the insurance industry continuing to refine its capital-management processes, and in a broader sense, its risk-management framework. Having an ongoing relationship with the capital markets also has forced many insurers to be more financially disciplined, which is a positive development.

The reality in today's insurance marketplace is that prudent use of these capital-markets tools is becoming a core competency for the larger players. However, A.M. Best believes that the industry needs to continue to focus on the core, fundamental financial and risk management practices of sound underwriting and pricing, asset and liability management, credit analysis, and spread management as the primary tools for building financial strength.

• Operational Risk – Financial exposures arising from damage to a company's reputation or franchise value stemming from a wide variety of external and internal factors, such as: management change; business interruption; fraud; data capture; data security and integrity; claims handling; and employee retention.

• Strategic Risk – Financial exposures arising from adverse business decisions, improper implementation of decisions or a lack of response to industry changes.

Another integral part of the risk management framework is capital management. If a company's traditional risk management practices are thought of as the processes and controls in place to monitor and manage individual risks, then capital management is the process by which a company provides a backstop to absorb losses that are not sufficiently mitigated by its traditional risk management practices. The primary sources of capital, and in turn financial flexibility, are retained earnings, debt markets and equity markets. Prudent capital management incorporates each of these sources in an integrated way to provide adequate financial resources for daily operations and expected growth, while anticipating potential needs for additional capital based on the risk profile of the entity.

ERM then provides senior management, the final part in the risk management framework, with a platform to view all the various risk management and capital management elements in a more holistic way. The bottom line is that strong, fundamental practices and processes encompassing traditional risk management, capital management and ERM provide a wealth of information and sophisticated tools. However, a company's risk profile, and its ultimate success or failure, still are dictated by the decisions made by management.

ERM Is NOT "One Size Fits All"

A.M. Best believes that assessing an insurer's risk management capabilities – within the context of determining an insurer's financial strength – should be viewed in light of a company's operating scope and the complexity of its business. For those more complex organizations, such as insurers participating in the global reinsurance and retirement savings markets, or insurers with diverse operations covering a variety of products and distribution channels, ERM takes on increasing importance because of the size and complexity of the organization, and the relative risk and volatility in its various lines of business. A.M. Best believes these organizations must develop and constantly refine an ERM framework, including the development of internal economic capital modeling, to:

Exhibit 9
Major Categories of Risk

Credit Risk	Market Risk	Underwriting Risk	Operational Risk	Strategic Risk
Default	Equities	UW Process	Monetary Controls	Competition
Downgrade	Other Assets	Pricing	Financial Reporting	Demographic/Social change
Disputes	Currency	Reserve Development	Legal Controls	Negative Publicity
Settlement lag	Concentration	Product Design	Distribution	Rating Downgrade
Sovereign	Basis	Basis	IT Systems	Customer Demands
Concentration	Reinvestment	Frequency	Regulatory	Regulatory/Political Capital
	Liquidity	Severity	Training	Availability
	ALM	Lapse	Turnover	Technological
	Interest Rate Sensitivity	Longevity	Data Capture	
		Mortality and Morbidity		
		Policyholder Optionality		
		Concentration		
		Economic Environment		

Source: A.M. Best Co.

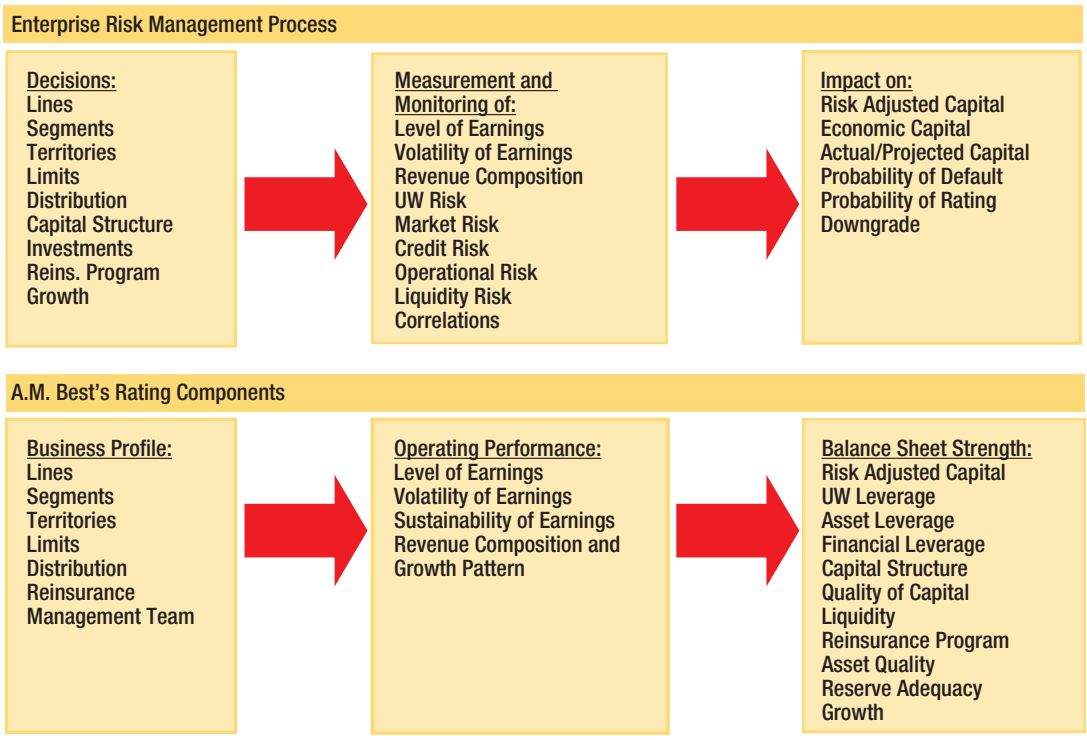
- remain competitive in today's dynamic environment;
- build sustainable earnings and capital accumulation; and
- ultimately, maintain high ratings.

Meanwhile, for organizations with a more limited operating scope focusing on more stable, traditional lines of business, the ERM process may be less comprehensive or complex – at this time. However, the pending implementation of Solvency II in Europe, "Own Risk and Solvency Assessment" regulatory reporting requirements in the United States, and the significant efforts of sophisticated insurers to raise the bar on the risk management front, ultimately will become a competitive issue driving continued improvement and integration of ERM concepts for all insurers, regardless of size.

For example, a small, disciplined insurer that operates as a single-state personal automobile writer, or a life company selling traditional protection products through a captive agency force, or a health insurer writing high-deductible products, may not benefit from the development and full implementation of a sophisticated ERM process, but incorporating selected elements of ERM can help any company, regardless of size. A.M. Best believes every company can take steps to foster a risk-aware culture; improve its ability to consistently identify, monitor and manage risk on a quantitative basis; and consider the impact of risk correlations within its business model.

Across the insurance industry, there are many companies that produce consistently strong operating results, which support a very strong risk-adjusted capital position – each with its own approach to risk management. A.M. Best does not expect successful, well-managed companies with a limited business and risk profile to change their opera-

Exhibit 10
ERM Process & Rating Components



Source: A.M. Best Co.

tions, hire a chief risk officer and build a sophisticated economic capital model to maintain a high rating – as long as the company employs sound risk management practices relative to its risk profile and considering the risks inherent in the liabilities it writes, the assets it acquires and the market(s) in which it operates, and takes into consideration new and emerging risks.

In many cases, companies with a more limited operating scope, such as those mentioned above, can be managed effectively with traditional risk management practices, because the management teams are smaller and the risks more clearly defined and more easily understood. Consequently, the financial management and risk management tools required to effectively manage and monitor risk, and preserve policyholder security, are more basic. However, that does not mean that all small organizations are successful, or that managing less complex companies is an easy task, because all organizations and business lines potentially are exposed to new and emerging risks. In some respects, managers of smaller organizations face a wider range of challenges than do their large company peers, simply because they "wear many hats" within their organizations.

Whether utilizing a formalized ERM framework, integrating selected elements of ERM into operating practices, or relying solely on a traditional risk management process, an insurer's risk management is perceived by A.M. Best as paramount to long-term success. A.M. Best also believes companies that engage in sound risk management practices are typically less likely to fail because they've "considered the unexpected." As such, within the rating process, each company – regardless of its size or complexity – is expected to explain how it measures, monitors and manages risk on an ongoing basis.

An insurer that can demonstrate strong risk-management practices integrated into its core operating processes, and effectively execute its business plan, will maintain favorable ratings in an increasingly dynamic operating environment. A.M. Best believes that risk management is embedded in an insurer's "Corporate DNA" when risk metrics are integrated into corporate, business line and functional area objectives; and risk-return measures are incorporated into financial planning and budgeting, strategic planning, performance measurement and incentive compensation.

Risk Management and the Rating Process

In the rating evaluation process, A.M. Best always has considered risk management and capital management to be core areas of assessment in determining a rating. As such, many of A.M. Best's existing rating criteria speak to risk management and capital management issues.

With the insurance industry overall trending toward a higher risk profile, and the introduction and ongoing development of ERM platforms, the ties that bind risk management and ratings are becoming even stronger. **Exhibit 10** shows the interaction between the risk management framework and the rating components.

While risk management is core to the rating evaluation process, A.M. Best has not established a separate rating category for risk management because the various components of the risk management framework are intertwined among the three key rating areas: balance sheet strength, operating performance and business profile.

However, because of the importance of risk management in the rating process, A.M. Best has added a separate section in its insurance reports that discusses an insurer's risk management process.

The impact of risk management on an insurer's rating is based on the insurer's risk profile and the insurer's risk management capability relative to that risk profile. An insurer's risk profile is made up of both quantitative and qualitative risks. **Exhibit 11** shows a number of quantitative and qualitative risks that A.M. Best contemplates when reviewing an insurer's risk profile. An insurer's risk management capability is made up of both its traditional risk management processes and its enterprise risk management process. **Exhibit 12** shows a number of risk management areas that A.M. Best considers when reviewing an insurer's risk management capabilities.

Exhibit 11
Quantitative & Qualitative Risks in A.M. Best's Risk Profile Evaluation

Market Risk	Judicial Environment
Credit Risk	Economic Environment
Underwriting Risk	Growth
Off-Balance-Sheet Risk	Investments (quality, type, etc.)
Operational Risk	Liquidity
Strategic Risk	Financial Flexibility
Capital Management	Volatility of Results or Capital
Line of Business	Concentrations
Correlation Among Lines or Risk Categories	Data Quality
Policy Limits	Credit Quality of Reinsurers
Product/Coverage Changes	Ceded Leverage/Potential Disputes
Competitive Environment	Impact of Reinsurance Program
Legislative/Regulatory Environment	Management Philosophy

Source: A.M. Best Co.

Exhibit 12
Capabilities Considered in A.M. Best's Risk Management Review

Market Risk – Bonds	Off-Balance-Sheet Risk
Market Risk – Stocks	Operational Risk
Market Risk – Other	Strategic Risk
Credit Risk – Bonds	Capital Management
Credit Risk – Reinsurance	Risk Culture
Credit Risk – Other	Risk Identification
Underwriting Risk – Pricing	Risk Measurement
Underwriting Risk – Reserving	Risk Appetite/Tolerance
Underwriting Risk – Event Risk	

Source: A.M. Best Co.

Insurers are expected to demonstrate that their risk management processes are appropriate for their risk profiles. An insurer with a very high risk profile would need to demonstrate that it has a corresponding high level of risk management capability. For insurers with a low risk profile, traditional risk management practices alone may suffice. Whenever the insurer's risk management capabilities are considered insufficient for its risk profile, this could have a negative impact in determining the insurer's financial strength rating, resulting in a lower rating or requiring additional capital to maintain a certain rating. Conversely, when the insurer's risk management capabilities exceed its risk profile, this is considered a positive rating factor and could have a favorable impact on the insurer's financial strength rating, resulting in a higher rating or lower capital requirements for a specified rating.

Volatility Is NOT A "Four-Letter" Word

Insurance companies make money by managing various types of risk for individuals and other corporate entities—the risk of dying too young, experiencing a loss due to man-made or natural disasters, outliving your assets, and so on. Where there is risk, there is uncertainty, and where there is uncertainty, there is exposure to volatility.

From a ratings perspective, it is crucial to understand the historical and potential volatility the insurer's balance sheet is exposed to, as well as the drivers of volatility. A.M. Best's ratings are prospective, and understanding an insurer's exposure to volatility in earnings and capital is at the heart of A.M. Best's assessment of operating performance and business profile – the leading indicators of future balance sheet strength.

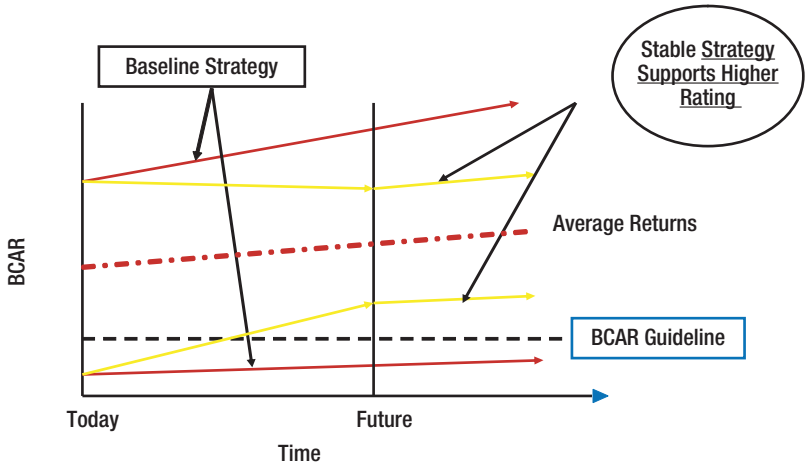
However, it is important to note that the objective of A.M. Best's rating evaluation process – similar to the fundamental goal of any sound risk management system – is not to encourage companies to eliminate risk and volatility, but to understand and evaluate each insurer's risk profile and the reward received for that risk.

Risk management, especially robust ERM programs, allows an organization to identify and quantify its risks, set risk tolerances based on its overall corporate objectives and take the necessary actions to manage risk in light of those objectives. When done right, ERM allows companies to find the risk/reward balance that best meets their stakeholders' expectations.

For some insurers, the right balance is to reduce volatility through measures such as the purchase of reinsurance, changes in business mix or the refinement of liability characteristics.

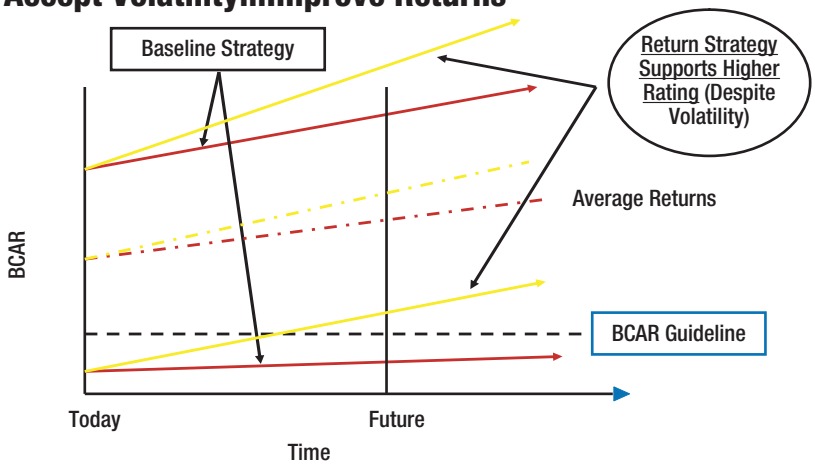
For others, the right balance is to accept their current level of volatility and focus on boosting returns through price actions, expense reductions, changes to reinsurance programs or business mix, etc.

Exhibit 13
ERM—Balancing Risk & Reward: Reduce Volatility



Source: A.M. Best Co.

Exhibit 14
ERM—Balancing Risk & Reward: Accept Volatility...Improve Returns



Source: A.M. Best Co.

In either case, A.M. Best believes that by developing a better understanding of risk and risk correlations through ERM, insurers can take advantage of inefficiencies in the market and improve stakeholder value.

Typically, management is trying simultaneously to strike a delicate balance among the interests of various stakeholders – including shareholders, policyholders, regulators and rating agencies. A.M. Best recognizes this dynamic and understands that higher ratings are not always an objective of insurers. As such, for some companies, the right balance may be found by taking actions that could be detrimental to their ratings.

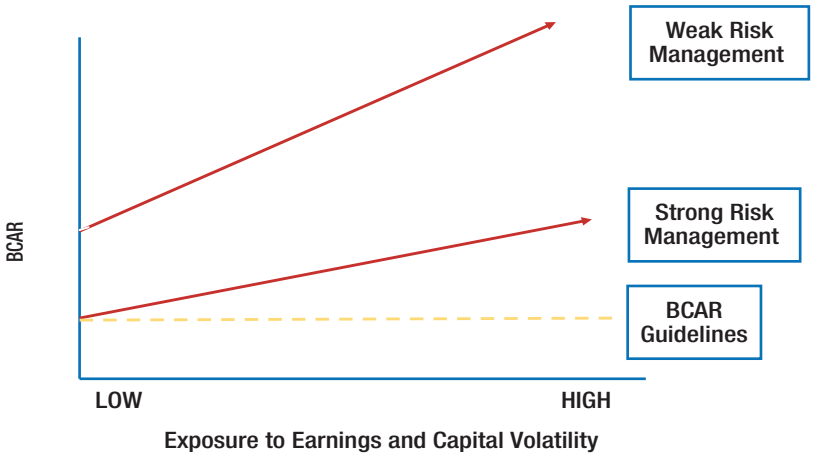
Impact of Risk Management on BCAR Requirements

A.M. Best's Traditional Approach

Clearly, BCAR is an important quantitative tool that helps A.M. Best differentiate between companies and indicate whether a company's

capitalization is appropriate for a particular rating level. However, BCAR by itself never has been the sole basis for determining any A.M. Best rating.

Exhibit 15
Risk Management & BCAR — A.M. Best's Traditional Approach



Source: A.M. Best Co.

In many cases, companies with similar capital positions – BCAR scores – might be assigned different ratings based on the integration of other important considerations unique to each insurance company. These other considerations include the various financial management practices and operating elements of an insurer that ultimately dictate the sustainability of its operating performance and its exposure to capital volatility. In other words, a company's relative risk management capabilities are a key factor in determining the BCAR capital requirement for each rated insurer.

Exhibit 15 is a simple depiction of the relationship between an insurer's relative risk management capabilities and the BCAR capital requirements. In the chart, the relative risk management capabilities of an insurer are depicted as either Strong or Weak. In reality, the assessment is not nearly as "black and white;" rather, there is a range of relative results. The vertical axis represents the BCAR Requirement or score. The horizontal axis represents the relative Exposure to Earnings and Capital Volatility, which considers both the inherent volatility in a company's business mix and the volatility in reported results. In assessing a company's Exposure to Earnings and Capital Volatility, A.M. Best considers a number of factors.

• Review of the relative risk inherent within the insurer's business profile – including the political and regulatory environment – and other elements of strategic and operating risk.

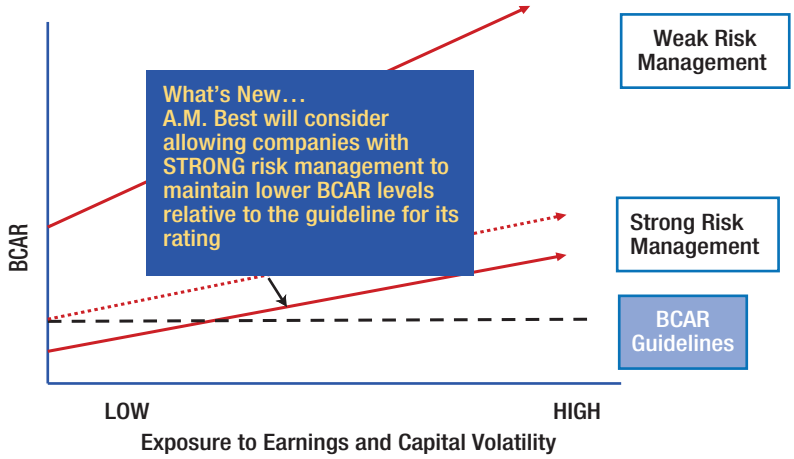
• Earnings and capital trends, including an analysis of the drivers behind the trends so that the long-term sustainability of earnings as a source of capital accumulation can be assessed.

• Comparison of current and prior projections (provided by company management) to actual results, and review of the assumptions used to develop those projections, to assess the insurer's ability to anticipate changes in its operating environment and recognize the potential impact of such changes.

The key points to take away from this chart are:

1. Only companies with STRONG risk management capabilities and LOW relative exposure to volatility are allowed to maintain BCAR levels at or near the guideline for their ratings. STRONG risk management capabilities are defined as strong, traditional risk management fundamentals, relative to the insurer's risk profile, in each of the five key risk types, AND sound financial flexibility.

Exhibit 16
Risk Management & BCAR — A.M. Best's Revised Approach



Source: A.M. Best Co.

2. Companies with WEAK risk management capabilities need to maintain a higher level of required capital – BCAR score – even if there is LOW relative exposure to volatility. WEAK risk management capabilities are evident when traditional risk management practices are insufficient in one or more of the five key risk areas, AND financial flexibility is limited.

3. As the exposure to volatility increases, the BCAR requirement increases at a more rapid rate, i.e. the slope of the line is steeper, for companies with WEAK risk management capabilities.

The chart is intentionally not drawn to scale, because there are an infinite number of combinations and permutations of the various factors evident across the population of rated companies. However, the fundamental approach of determining BCAR capital requirements in light of a company's exposure to volatility, and its ability to measure, monitor and manage that volatility through risk management practices, has been (and always will be) core to the rating process.

A.M. Best's Approach Evolves

Recognizing the development of robust ERM frameworks, as well as the advances in some of the traditional risk management practices employed by the industry, such as the use of more sophisticated catastrophe modeling and dynamic hedging programs, A.M. Best is modifying its approach to determining BCAR capital requirements (see **Exhibit 16**). The fundamental difference in the revised approach is that for companies with STRONG risk management capabilities, A.M. Best will consider allowing companies to maintain lower BCAR levels relative to the guideline for their ratings based on a case-by-case evaluation of an insurer's overall risk management capabilities – relative to its risk profile. However, the bar has been raised to incorporate more advanced tools and metrics employed by sophisticated insurers. To qualify for this treatment, companies typically will have ALL of the following:

1. Superior traditional risk management fundamentals, relative to the insurer's risk profile, in each of the five key risk types.

2. Superior capital management and financial flexibility, providing the organization with cost-efficient access to capital even in distressed scenarios.

3. Strong ERM characteristics (as described earlier).

4. Strong Economic Capital modeling capabilities (as described below).

All companies that demonstrate these characteristics will potentially be held to lower capital requirements at their current rating level. In addition, for companies with a com-

bination of STRONG risk management capabilities (as described above) and relatively low exposure to earnings and capital volatility, A.M. Best will consider allowing companies to maintain BCAR levels below the guideline for their ratings.

ERM and Economic Capital Models

As mentioned earlier, A.M. Best believes that ERM encompasses a wide range of activities, including the use of sophisticated tools to identify and quantify risks. One of the tools often used to quantify risks, and measure the volatility and correlation of risks, is an economic capital (EC) model. A.M. Best believes that a strong EC model can be a valuable tool to an insurer, but it is just one of many tools and processes utilized within the overall risk management framework, i.e. ERM is more than just an EC model.

A strong EC model provides a sound basis for analyzing the risk-adjusted returns (i.e. EC is the denominator) of an insurer; however, an EC model is not simply a financial-reporting system. The benefit of a strong EC model is the aid it provides in understanding the insurer's risks and their correlations from a holistic point of view. The true value of an EC model is realized only when management employs it in the strategic decision-making process when assessing the impact of different business strategies, asset allocations, reinsurance structures, etc.

At the present time, BCAR is the starting point for A.M. Best's assessment of balance sheet strength. Over time, as A.M. Best becomes comfortable with an insurer's EC model, consideration could be given to the output from a strong EC model in the rating evaluation. A strong EC model must be able to capture the material risks associated with each of the major categories of risk listed in **Exhibit 9**. A.M. Best recognizes that certain elements of operational and strategic risk are not easily quantified. However, A.M. Best believes these risks are real and that companies must over time develop methods to estimate the impact of these risks. In the interim, A.M. Best expects companies to allocate some portion of capital within their internal EC models as a placeholder.

Characteristics of Strong EC Models:

- Address correlations within and across the five risk categories above, incorporating reasonably conservative assumptions on positive correlations.
- Contemplate increased correlations with larger events.
- Show the volatility in results.
- Reflect the benefits of diversification.
- Reflect the dangers of concentrations.
- Reflect the macro economy.
- Reflect the stages of the underwriting cycle.
- Can reflect changing reinsurance environment.
- Can accept deterministic scenarios for testing.
- Provide sufficient data to explain extreme events.

- Parameters fit company data well.
- Parameters updated/reviewed regularly.
- Staff dedicated to the EC model.
- Quality of input data reviewed/audited/tested.
- Model output easy to read/understand.
- Results can be tied to objectives.
- Results can be tied to probability of default.
- Produce cash-flow projections for each scenario.
- Model has tested well against historical adverse events.
- Can produce volatilities over different time frames.

Through the development of an integrated framework, combining the key elements of risk, companies have better tools at their disposal to optimize stakeholder value by allocating capital to the risks that provide the best risk/reward opportunities, and/or to products that provide the most optimal diversification benefit, which can be used as a hedge against existing product offerings. In doing so, an insurer is better prepared to determine the levels of economic capital allocated to certain product lines, ultimately resulting in optimal capital utilization and maximizing risk-adjusted returns within each product line.

A.M. Best may give more consideration to EC models as confidence in those models increases. Obviously, this will take time, as A.M. Best will need to see that company management is relying on the model to make business decisions, and that these decisions are validated over time. As part of this process, A.M. Best expects insurers to disclose their corporate risk tolerance or appetite in relation to earnings and/or capital, as well as their risk tolerance and key risk metrics by major line of business, which may include aggregate and single-event risk metrics used to manage certain exposures.

Management also must demonstrate that it can explain the model and its output. Members of management should be ready to show how the model helps them to understand the volatility of their risks, the underlying correlations of those risks and the drivers of the volatility. A.M. Best expects companies to discuss actual results compared with the risk tolerance and key metrics. This should highlight any variances from expected results and any corresponding steps taken to bolster the overall ERM process. Eventually, as actual results are compared with expected results, the model will develop a track record as a dynamic management tool that either will prove or disprove its value to the company. This information and analysis will be reviewed and discussed at the annual company rating meeting and incorporated into the determination of capital requirements and the overall rating analysis.

Direction of Future Model Improvements and Capital Requirements

As mentioned earlier, BCAR is one of the primary tools used in the evaluation of balance sheet strength. The BCAR model provides a quantitative measure of the risks inherent in a company's investment and insurance profile, relative to its capital. A.M. Best reviews the BCAR model on an ongoing basis and makes modifications to enhance

the model in response to industry dynamics—including changes in financial reporting requirements, significant regulatory and product developments, and industry trends.

However, BCAR provides only one view of capitalization, using public financial statements as a base. To develop a more comprehensive view of an insurer's prospective financial strength and flexibility, A.M. Best's assessment of balance sheet strength also includes an analysis of an organization's regulatory filings, including the GAAP or IFRS balance sheet, corporate capital structure, financial leverage, operating leverage, fixed-charge coverage, liquidity, and historical sources and uses of capital.

Given the insurance industry's evolving risk profile and the significant recent advancements made in risk management tools and practices, A.M. Best recognizes that a more economic, prospective view of capital can be another valuable supplement to the rating process. As a result, A.M. Best also is exploring ways to incorporate stochastic modeling in the development of risk factors within the BCAR model, and to more directly tie probability of default to the determination of capital required to support individual rating levels. The probability of default factors will be based on insurance company insolvency and impairment statistics compiled by A.M. Best.

In addition, A.M. Best will consider the use of company-provided capital models in developing capital requirements within the rating evaluation process. A.M. Best will consider using the output of company-provided capital models (that incorporate all the characteristics of strong EC models described above) for analytical purposes; however, the BCAR still will be published as a common, industrywide baseline for capital adequacy.

Appendix: Enterprise Risk Management* – Key Topics & Meeting Agenda Items

ERM Framework and Culture	
	Board and Senior Management Involvement
	Establishment and Communication of Risk Management Objectives
	Risk Tolerance and Key Risk Metrics
	Roles, Responsibilities and Oversight
	Strategic Decision Making
Risk Identification and Management	
	Traditional Risk Management (Underwriting, Credit and Market/Liquidity are covered throughout annual rating meeting)
	Exception Reporting – Performance vs. Key Risk Metrics (by functional area and/or risk type)
	Action Plans for Exception Items
	Operational Risk and Strategic Risk
	Emerging Risk Issues
Risk Measurement and Capital Modeling	
	Management Reporting – Performance vs. Risk Tolerance (corporate-wide, by line of business, by risk type)
	Risk Correlation
	Tools (Economic Capital or Other) Used to Determine Required Capital and Capital Allocation
	Disclosure of EC Results – Internal, Rating Agency, External
	Data Integrity – Completeness and Accuracy of EC Inputs
	Independent Review of Modeling Process
Management's Perspective on Key Risks	
	Top 5 Risk Exposures and Critical Success Factors to Managing these Exposures
	Lessons Learned through ERM Development Process
	Next Steps in ERM Development

* A.M. Best's evaluation of a company's ERM capabilities will vary depending on an insurer's scope of operations, size and complexity of risk. During the annual rating review, the discussion of risk management practices and ERM may be interspersed throughout the meeting, or it may be included in a separate, comprehensive ERM discussion. In either case, the topics listed above will be incorporated into the final rating evaluation

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Rating Members Of Insurance Groups

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Criteria:
Understanding Universal BCAR

Understanding BCAR for Life & Health Insurers

Insurance Holding Company and Debt Ratings

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Today, insurance organizations operate in a truly global environment, with many industry participants establishing or maintaining multiple businesses in diverse geographic regions. Insurers have expanded their platforms beyond the traditional domiciles of the United States, Bermuda, Japan and western Europe and have branched out more recently into emerging markets such as Brazil, Russia, India and China, among others. In response to the globalization of the industry, various regulatory regimes are contemplating dramatic changes to insurers' financial, supervisory and disclosure requirements. A prime example is Solvency II, which seeks to address the global nature of the insurance industry by radically changing the regulatory landscape.

Regulatory requirements and market dynamics often require insurers to set up subsidiaries or branch offices in foreign countries. These overseas subsidiaries carry differing levels of importance and risk to their parent companies. Some are crucial to the success of the franchise, yet they may require significant investment before they turn a profit. For other insurers, the foreign operation may simply be an ancillary investment with a relatively short time horizon.

These factors and others weigh heavily in A.M. Best's ratings of insurance companies that are members of a group. The need for international insurers to set up operations in numerous jurisdictions to maintain access to market intelligence has brought into focus the notion of fungibility of capital – that is, an organization's ability to allocate and deploy capital in the most efficient way where it is most needed. A.M. Best recognizes that to sustain a competitive advantage, these groups must allocate their capital with maximum efficiency. However, to obtain a secure credit rating, a certain minimum level of capitalization must be maintained at the insurance company level.

The purpose of this criteria report is to illustrate how A.M. Best evaluates members of insurance groups and to review what levels of rating enhancement or drag are placed on the ratings of members of insurance groups. If a company is owned, affiliated or controlled by another organization that consists of more than one insurance company, then it may be considered a member of that group. The financial data of insurance companies within a group can be combined for analytical purposes if its inclusion is needed to ensure completeness of the potential risk to the enterprise's financial strength. One of the main themes is the implicit and explicit support a parent provides its insurance subsidiaries. These factors, together with any legal constraints on the free flow of capital among affiliates, will determine an insurance subsidiary's rating enhancement or drag and its ultimate rating assignment.

For additional information on A.M. Best's approach to assigning ratings, and for complete definitions of A.M. Best's ratings, please refer to the Methodology section of Best's Rating Center, which is located online at *www.ambest.com/ratings/methodology*.

Analyzing Groups

Rating members of complex, domestic or multinational insurance organizations is a difficult task. A.M. Best performs comprehensive quantitative and qualitative analyses of

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an organization's balance sheet strength, operating performance and business profile. Every legal entity that maintains an A.M. Best rating is looked at on a stand-alone basis. The entity's strengths and weaknesses are analyzed, without any benefit or drag from its affiliation with a larger organization. Employing this approach allows A.M. Best to gauge the level of policyholder security with no benefit from parental support. Through this analysis, a stand-alone assessment is determined for all entities except those that possess a pooled or reinsured rating. A.M. Best's approach to rating pool members and reinsured affiliates is discussed later.

In cases where it is inconceivable for an insurer to exist without its membership within a larger organization (i.e. there would be no business to write without the parent company, as with a small subsidiary that exists solely for rate flexibility), a review of balance sheet strength and historic operating performance drives the stand-alone approach. Here, less emphasis is placed on the qualitative components of business profile – such as competitive market advantage, brand-name recognition and control of distribution – for the purposes of the stand-alone assessment.

Recognizing that an insurer very often benefits greatly from its inclusion within a strong, diversified group, the published ratings of these entities often include some element of rating enhancement. This enhancement points to the insurer's greater ability to compete successfully, generate earnings and sustain a strong balance sheet over time through the support of its parent or affiliate companies. To determine this level of support, in addition to the stand-alone analysis, A.M. Best conducts a thorough, top-down evaluation of the organization's strength on a consolidated basis. Key questions may include:

• What resources are available to the organization as a whole in relation to its cumulative current and future financial obligations?

• What available excess capital can the group employ to support individual subsidiaries?

Note that A.M. Best defines excess capital as the difference between available capital and the required capital that must be in place to adequately support the organization's risks.

This top-down analysis highlights the benefit of diversification within an insurance group. Because of the less than complete correlation of individual risks, the total required capital at the consolidated group level is invariably less than the sum of its parts. As such, group capitalization, particularly where there is excess capital, can have a direct effect on subsidiaries' capital requirements and ratings. For further detail on how A.M. Best analyzes insurers' risk-adjusted capital, please see the Best's Capital Adequacy Ratio (BCAR) criteria reports found at *www.ambest.com/ratings/methodology.*

A.M. Best uses its consolidated view of the organization to conduct an enterprise-level analysis. This determines the highest possible rating for the lead insurer within the group, accounting for strengths and weaknesses that may reside not only within the insurance entities but also at the holding company or at a non-insurance affiliate. With this information, A.M. Best determines whether or not the individual insurance subsidiaries qualify for enhancement or drag to their stand-alone assessments.

Overview of Rating Enhancement/Drag

To be eligible for rating enhancement, the insurance subsidiary must operate under common ownership (greater than 50%) with the entity providing lift or maintain board control together with common management. An individual company can receive

enhancement to its rating through support from its parent or from affiliated companies. This support can be explicit, such as through a guarantee, reinsurance agreement, capital infusion or pooling of assets and liabilities. Alternatively, it can be implicit support that ties the importance of the company to the overall organization. For example, a company or operating unit might provide important strategic or financial benefit to the organization's core operations, or it might in itself be an integral part of the group's core operation.

Existing reinsurance protection from a parent or affiliated company, or a prior capital infusion, is considered in the stand-alone analysis of the operating unit. However, the permanence of any capital contribution or reinsurance protection is an important aspect of any explicit support. As a result, the evaluation of explicit support must include a subjective review of the expected permanence of parental commitment to its subsidiary.

For this reason, Best's Ratings that incorporate parental support require ongoing surveillance to ensure there are no material changes to the degree of implicit and/or explicit parental support. As with all Best's Credit Ratings, the dynamics of each insurance group are re-evaluated continually for changes that might arise. A.M. Best maintains contact with company management throughout the year and monitors each company's performance and its strategic role within its group.

Implicit Parental Support

Overview

A.M. Best considers operating subsidiaries within a group for rating enhancement ranging from none to full rating enhancement. In the latter case, the company is assigned its parent's rating – assuming the parent providing lift is an insurer itself. In cases where the lift comes from a parent holding company (intermediate or ultimate) or a non-insurance affiliate, full rating enhancement would lift the stand-alone assessment to the lead insurance company's rating, which was determined through the enterprise-level analysis. In either case, lift is determined in the same way. Throughout this criteria report, either case will be referred to as the subsidiary receiving its parent's rating.

Companies that receive full rating enhancement maintain a strong affiliation with, or importance to, the parent. A.M. Best deems the security offered to the policyholders of these subsidiaries to be as strong as that offered to any policyholder within the group. Companies that receive no rating enhancement demonstrate the least strategic importance and potentially could cease operations or be sold with no material impact on the group's future success. These companies could be assigned ratings no higher than their stand-alone assessments, unless new, explicit support is provided. Regardless of the subsidiary's perceived importance to the group, any subsidiary company's published rating could be lowered from its stand-alone assessment if there is a perceived drag from a weaker parent or affiliate.

Consideration of rating enhancement is based primarily on the level of implicit support expected from a parent or affiliate. However, the amount of explicit support already provided to the operating unit also influences the level of implicit support anticipated by A.M. Best and the level of benefit in a rating. These judgments are subjective and are decided by a rating committee following a formal rating review, which includes detailed discussions with management to gain a complete understanding of the organization, its individual members and the markets in which they operate.

There is no automatic increase in the subsidiary's published rating. A.M. Best determines the amount of enhancement provided in the published rating, if any, after considering the:

- Subsidiary's level of strategic importance to the parent.
- Subsidiary's integration within the group's operations.
- Differential between the subsidiary's stand-alone assessment and the parent's rating.
- Level of the parent's rating.
- Trends in the parent's and subsidiary's stand-alone assessments.
- Level of the subsidiary's stand-alone assessment.
- Amount of explicit support provided to date.

When a parent company's financial strength diminishes due to a shock loss or negative market event, clearly its ability to provide support to its subsidiaries also is reduced. If the parent's financial health were to deteriorate precipitously, particularly in cases where excess capital within the organization was to evaporate, any rating enhancement afforded to affiliates or subsidiaries would be reduced or eliminated. In extreme cases, an impaired insurance company's ability to support its subsidiaries might be severely limited by regulatory restrictions. A.M. Best seeks to identify the potential for this in its analysis of rating enhancement and will remove rating uplift emanating from an unstable parent company.

In some cases, a subsidiary meets the criteria for rating enhancement, but its stand-alone assessment and published rating remain the same (e.g. A- stable outlook to A- positive outlook). Generally, the maximum benefit a stand-alone assessment can achieve through implicit support is two Financial Strength Rating levels (e.g., B+ to A-). However, additional lift is possible through explicit parental support (e.g., guarantee, net worth maintenance agreement). Examples of these and other situations will follow in the next section.

Implicit Support – Full Rating Enhancement

A subsidiary is assigned its parent's rating (i.e. given full rating enhancement) if A.M. Best views the company to be integral to the group's primary business through its financial, operational and/or strategic importance. A.M. Best expects that under almost any scenario, the parent would continue to support the subsidiary to the extent of its financial ability. The sale or closure of such a subsidiary would imply an unexpected shift in the group's strategy. As a result, these subsidiaries are assigned the parent's rating and financial size category.

The operating performance of the subsidiary and its ability to meet A.M. Best's expectations are important in evaluating the rating enhancement. **Exhibit 1** details common characteristics of a subsidiary that is assigned its parent's rating.

As a matter of course, it is very unlikely that a newly started or acquired entity would

Exhibit 1

Full Rating Enhancement Factors

Key issues relating to full rating enhancement include:

- Is critical to the group's strategy and ongoing success.
- Is fully integrated into the group's strategic plan.
- Carries the group name or is identified easily with the group.
- Is material to the business profile of the group.
- Is a significant contributor to the group's earnings.
- Currently benefits from some form of explicit parental support.
- Has a history of receiving explicit support when needed.
- Is necessary for rate flexibility.
- Is necessary for licensing.

be eligible for its parent's rating based on implicit support until it had demonstrated its contribution to the group's earnings. Therefore, a start-up would need explicit parental support (i.e. affiliated reinsurance, financial guarantee, etc.) to achieve substantial rating lift. For an example of full rating enhancement, please see **Appendix A**.

Implicit Support – Partial Rating Enhancement

The degree of affinity between subsidiary and parent differentiates those subsidiaries that receive the parent's rating from those that receive partial rating enhancement. The willingness of the parent to incur the financial impact of supporting such a subsidiary under stress is less certain. The subsidiary is not essential to the organization's success, and the sale or run-off of the operation would not imply a radical change in core business strategy. Nonetheless, A.M. Best believes the subsidiary is important enough to the organization that the parent would incur losses substantially greater than its legal obligation to keep the subsidiary in good financial standing.

The subsidiary's operating performance and its ability to meet A.M. Best's expectations are important considerations in assigning partial rating enhancement. Common characteristics of a subsidiary that is assigned partial rating enhancement are listed in **Exhibit 2.**

A subsidiary assigned partial rating enhancement can achieve a rating at the same level as its parent, but this rating still is considered a separate rating. As such, it does not maintain the parent's financial size category. Another key difference is that companies receiving full rating enhancement move up or down in lockstep with the parent. Partial rating enhancement that brings the subsidiary's rating to its parent's level does not imply that if the parent's rating goes up, so will the subsidiary's. In this case, the subsidiary's stand-alone assessment likely would have to improve, or its perceived level of implicit parental support would have to increase, before the subsidiary could receive an upgrade. **Appendix A** shows an example of a subsidiary that receives partial rating enhancement as a result of implicit parental support.

Implicit Support – No Rating Enhancement

A subsidiary receiving no rating enhancement is viewed as a company that is an investment and not a key component of the group's long-term strategy. In these instances, the operating unit would be assigned a rating equal to its stand-alone assessment. Common characteristics of a subsidiary that receives no rating enhancement are detailed under **Exhibit 3**.

It is important to note that a subsidiary may represent a successful investment but still receive no rating enhancement. However, the subsidiary's stand-alone assessment would reflect its success. For an example of a subsidiary receiving no rating enhancement, please see **Appendix A**.

Exhibit 2

Partial Rating Enhancement Factors

Key issues relating to partial rating enhancement include:

- Is important to the group's business strategy and profile.
- May operate on a more independent basis, such as through a separate identity or distribution platform.
- Has earnings that are not core to the group but are a good source of diversification.
- Is a meaningful contributor to the group's operating performance and/or financial strength.
- Has benefited from some form of explicit parental support.
- Is highly likely to receive future support.

Exhibit 3

No Rating Enhancement Factors

A subsidiary that receives no rating enhancement is one that:

- Has marginal or incidental status to the group's overall strategy.
- Can be readily sold without material impact to the group's ongoing operations.
- Has a separate operating platform.
- Is managed independently with a separate market identity.
- Lacks business synergy with parent's core operations.
- Provides no meaningful diversification benefits.
- Is not a significant contributor to earnings or capital.

Capital Requirements for Subsidiaries

When reviewing an insurance subsidiary, A.M. Best determines the minimum level of capital the subsidiary must hold to maintain the rating. If there are restrictions on the free flow of capital, a greater capital requirement may exist at the subsidiary level. Several factors weigh into the capital requirement, including the:

- Subsidiary's historic and prospective performance.
- Risk appetite and shock-loss exposure.
- History of parental support
- Perceived future parental support.
- Fungibility of capital between the parent and subsidiary.

Under Solvency II, the intention is to hold insurance organizations to solvency capital requirements (SCR). Although the European Commission still is working out the details, the current proposal is to stipulate that each operating unit must maintain a predetermined, company-specific minimum amount of capital. In addition, thinly capitalized subsidiaries may be required to hold a financial guarantee or net worth maintenance agreement from their parent.

A.M. Best takes a similar approach to its capital requirements at the subsidiary level. The required capital level can be determined by Best's Capital Adequacy Ratio (BCAR) or by the prudential regulatory authority in countries deemed to have strong insurance regulation. The subsidiary's level of capital plays a leading role in the assignment of the stand-alone assessment and also helps determine the potential for rating enhancement. Typically, the maximum rating enhancement through implicit support is two FSR notches.

Companies that receive more than two FSR notches of lift are generally deeply integrated in the group's operations or hold a comprehensive financial guarantee or net worth maintenance agreement from the parent. In these cases, the subsidiary can attain the parent's rating level due to its integration within the group's operations, where the spread between the stand-alone assessment and published rating is greater than two notches. For more information on how explicit support such as parental guarantees and net worth maintenance agreements factor into rating enhancement, please see below. A.M. Best also conducts its BCAR analysis at the consolidated group level to ensure that sufficient capital exists in aggregate and to cover all subsidiaries' capital requirements.

Non-Insurance Parent or Affiliate

To rate individual insurance companies within a group, A.M. Best takes a top-down analytical approach, meaning it needs to analyze and understand the organization as a whole. Here, A.M. Best reviews the parent holding company to capture the entire group's performance and capital position. At this level, financial leverage and fixed charge coverage, liquidity, and asset quality and diversification, among others, are reviewed to ensure that the group, as a whole, is in good financial standing. This analysis helps determine the highest possible rating for any insurer within the group based on lift. Also, if the entity issues debt or hybrid securities to the public market, A.M. Best analyzes and rates these securities. For more information on A.M. Best's criteria for rating debt securities, please see the criteria report titled *Insurance Holding Company and Debt Ratings* at *www.ambest.com/ratings/methodology.*

The purpose of the top-down approach is primarily to determine whether or not the parent company, or indirectly a non-insurance affiliate, is in a position to provide lift or drag to the rated insurance entities. For example, a group may have a manufacturing subsidiary that provides substantial earnings to the group. In addition, this entity may hold excess capital that could be made available to the insurance entities if necessary. Ready access to this affiliate's excess capital, plus the benefit of a diversified stream of earnings to the entire group, could provide lift to the stand-alone assessments.

Conversely, for a group with a premium finance affiliate that is depleting group capital due to excessive charge-offs, the insurers' ratings likely would be affected adversely by this affiliate that is draining the group's financial resources and hurting consolidated earnings.

A.M. Best reviews all members of a group for the potential benefit or drag an affiliate can represent. To gain comfort with a group's non-insurance affiliates, A.M. Best's analysts hold discussions with management to determine these entities' strategic fit. A review of these entities' stand-alone performance, balance sheet and risk appetite determines their contribution to the group relative to the other operations. Additionally, A.M. Best's analysts use public information, third-party analytical studies and industry reports, as well as their own analysis of management-provided information, to assess a non-insurance affiliate's financial condition.

Explicit Financial Support

Explicit financial support demonstrates a group's commitment to a subsidiary or affiliate. Such support comes in the form of a capital contribution or a contractual arrangement that exhibits the parental commitment, regardless of the subsidiary's fundamental importance to the group. Pooling, internal reinsurance, guarantees and net worth maintenance agreements are examples of explicit support. In many cases, insurance groups use these tools to facilitate capital management by reducing the need to capitalize each subsidiary at a level consistent with their risk exposure before the contractual support.

The level of benefit afforded to an operating unit's rating depends on the type of explicit financial support provided. Insurers with pooled or affiliated reinsurance arrangements meeting A.M. Best's requirements are assigned the parent's rating. Guarantees, also discussed below, that offer full protection to a subsidiary can provide rating enhancement, and in some cases equalize the subsidiary's and parent's ratings.

Treatment of Branches

A branch is not a separate legal entity and is viewed as an extension of the head office. As such, policies are written on the paper of the legal entity of which the branch is a part. Therefore, a branch maintains the rating of the head office.

Questions have arisen regarding the treatment of branches based on liquidation preference between the head office policyholders and the branch office policyholders. The ratings apply to all insurance policies issued by an insurer as a single class of obligation. In effect, A.M. Best's rating opinion applies to the last policyholder in a liquidation scenario.

Pooled Affiliations

A group whose member companies pool assets, liabilities and operating results maintains, in theory, the same operating performance and balance sheet strength as other companies within the pool. The assets of each pool participant are available for the

protection of all pool members' policyholders. In many cases, pooled affiliates market under a common brand name.

Intercompany pooling agreements generally contain the following provisions:

• The agreement among the pooled companies is joint and several.

• The pool is pure, meaning that all premiums, losses and expenses are shared based upon the pooling percentages, with the allocation of each being consistent with the allocation of unstacked surplus among the pool members. Pool percentages may need to be reallocated periodically because of the investment performance and dividend activity of individual pool members.

• Stand-alone capitalization supports the assigned rating after the pool is considered.

• The pool includes coverage for any prior-year loss-reserve development exposure.

• The pool includes coverage for the run-off of all liabilities incurred on policies incepted prior to termination.

• A common, ultimate parent with ownership measured as greater than 50%; or control of the board of directors along with common management of each of the pooled members consistent with the lead company.

• A 12-month notice before the pool can be disbanded or a company can be removed from it.

• A description of the process for removing an individual company from the pool and reallocating liabilities.

Typically, all pool members are assigned the same rating and Financial Size Category, based on their consolidation. Companies that are members of pools that do not qualify for the pooled rating still can qualify for rating enhancement. Depending on the insurer's stand-alone rating and the strength of the pooling arrangement, together with any other explicit and implicit support provided, the insurer can receive the same rating – without the group financial size category – as the other companies within the pool.

Reinsurance Affiliations

The reinsured rating is assigned to a company within a group that reinsures substantially all its insurance risk with an affiliated reinsurer. These intercompany reinsurance agreements generally contain the following provisions:

• Quota share of all premiums, losses and expenses written by the company unless regulatory restrictions apply (A.M. Best requires documentation from the regulator in these cases). In those cases, the retained percentage could be as high as the level required by regulation, to a maximum of 20%, but those cases would be subject to additional review.

• Stand-alone capitalization that supports the assigned rating, after consideration of the affiliated reinsurance and the incorporation of credit risk. For those companies with less than a 100% quota share, stand-alone operating performance also is considered in the analysis.

• A contract that contains no loss caps or loss corridors.

• 12 months' notice required before the reinsurance can be terminated.

• Reinsurance contract includes coverage for the runoff of all liabilities incurred on policies incepted prior to termination.

• Coverage for any prior-year loss reserve-development exposure through the reinsurance arrangement.

• The assuming company has common ultimate ownership with the reinsured company, or common control through the board of directors together with common management.

Typically, reinsured affiliates are assigned the same rating and Financial Size Category as their reinsurer. Companies that do not qualify for the reinsured rating still may qualify for rating enhancement. Depending on the strength of the reinsurance contract and any other explicit and implicit support provided, the insurer can receive the same rating as the affiliate or parent company providing the reinsurance.

Guarantees

The use of guarantees to show explicit support for a subsidiary's financial obligations has grown in recent years as groups optimize the efficient allocation of capital. A fully enforceable guarantee could protect the subsidiaries' policyholders without a potentially large, upfront capital infusion from the parent. However, the enforceability of guarantees – particularly those covering a large, geographically diverse population of policyholders – is always a concern.

Guarantees that result in rating enhancement generally contain:

• Coverage for all financial obligations of the subsidiary.

• A clear and satisfactory resolution to any foreseeable regulatory/jurisdictional conflicts.

• A termination notice of at least 12 months.

• Public disclosure of the guarantee.

• An assurance of enforceability, allowing policyholders/claimants to enforce the guarantee directly and locally within their own jurisdictions.

• Run-off coverage preserved for liabilities incurred on policies incepted prior to termination.

The mechanics and authority for triggering the guarantee must be clear. Also, in some cases, a third-party legal opinion on the enforceability of a guarantee may be necessary for the guarantee to be considered for rating lift. It is important that the legal opinion address all regulatory and legal issues in each domicile that reasonably could apply to the guarantee.

If the above-noted factors are present, it is possible for a subsidiary to obtain its guarantor's rating. The rating committee determines the application of full rating enhancement, based on the factors noted in the above section titled "Implicit Support – Full Rating Enhancement."

Guarantees that are not ironclad are given consideration as explicit support and can still enhance the published rating. These guarantees, however, do not merit full rating enhancement up to the guarantor's rating level. Also, the guarantor's capacity to make good on a guarantee is considered in the guarantor's rating.

Other Financial Support

A.M. Best evaluates other types of financial support – such as net-worth maintenance, stop-loss reinsurance and keep-well agreements – as part of the rating enhancement, so long as they are not evident in the company's financial performance. Once these support mechanisms are utilized, they become part of the stand-alone assessment.

Key factors that would result in favorable treatment by A.M. Best include:

• A contract without loss caps or loss corridors.

• A termination notice of at least 12 months.

• Run-off coverage that is guaranteed for the duration of the run-off of liabilities incurred on policies incepted prior to termination.

• Coverage for any prior-year loss-reserve development included in the protection.

• A clear confirmation of ability and willingness of minority owners to participate in the protection if the company providing the protection does not have 100% ownership.

Insurance Groups With Lloyd's Operations

The rating process for groups with a Lloyd's platform is substantially the same as it is for all insurance groups. However, the unique capital structure and practices of the Lloyd's market introduce distinct issues, particularly in respect of the analytical treatment of group capital used to support underwriting at Lloyd's.

A.M. Best's fundamental rating approach for the assignment of a rating to a member or holding company of a group is to examine an organization from both the top down and the bottom up to incorporate an assessment of all material sources of risk to each rated entity.

An insurance group writing business at Lloyd's typically will own a corporate member, which participates in the Lloyd's market through the provision of capacity to one or more syndicates. It accepts insurance business through syndicates on a several basis for its own profit and loss and holds the capital supporting its share of business written in the form of funds at Lloyd's (FAL). For such groups, both the performance of and the capital supporting business written at Lloyd's are captured in the top-down consolidated analysis via the corporate member.

As part of the analysis of a group's consolidated balance sheet strength, A.M. Best uses Best's Capital Adequacy Ratio (BCAR) to calculate the net required capital to support the financial risks of the group (including those of the corporate member) and compares it with the group's available capital (including capital lodged as FAL).

The level of FAL determines the amount of insurance business a member can underwrite at Lloyd's. Consequently, a member unable or unwilling to replenish its FAL will have to reduce the amount of Lloyd's business written. It follows that if FAL are exhausted and will not be replenished, the corporate member will cease underwriting at Lloyd's.

It is noted that if the member's FAL are inadequate to meet syndicate losses, a managing agent may submit a request for Lloyd's to meet the cash call from its central assets. However, A.M. Best gives no capital credit for the access a member's insurance creditors have to Lloyd's central assets within the group's consolidated BCAR analysis. This is primarily because it is only the obligations of the corporate member, not those of the wider group, that may be met by Lloyd's central assets.

A.M. Best's bottom-up analysis of a group's Lloyd's business focuses on an assessment of the risks generated directly by the syndicates in which the corporate member participates. Syndicates are assessed based on A.M. Best's traditional key rating factors – capital strength, operating performance and business profile – taking into account Lloyd's unique capital structure. (For further commentary on A.M. Best's rating criteria for Lloyd's syndicates, please see Rating Lloyd's Syndicates at www.ambest.com/methodology.)

Insurance Holding Company Ratings and Lloyd's

The rating of an insurance holding company (IHC) is determined by reference to the ICR of the operating insurer(s) that it primarily depends upon to meet its obligations. It reflects analysis of both the credit risk implications of the IHC being a separate legal entity from the operating insurer(s), and the normal subordination of IHC creditors to operating company policyholders.

For an insurance group with a significant Lloyd's operation, the entity that the holding company most depends on to meet its obligations may be a Lloyd's syndicate. If this is the case, often it is not appropriate to use the syndicate rating in the notching process.

Lloyd's "chain of security" – in particular, the role of the Central Fund, which partly mutualizes capital at a market level – ensures that each Lloyd's syndicate is backed by capital consistent with the financial strength rating of at least that of the Lloyd's market. Consequently, a syndicate rating cannot fall below the Lloyd's market rating.

As Lloyd's central assets are available to meet only the insurance liabilities of the corporate member, when determining the holding company ICR of a group with a significant Lloyd's operation A.M. Best uses its consolidated view of the organization to conduct an enterprise-level analysis. This forms the basis for an overall operating company ICR, which then is used in the notching process rather than a syndicate rating that reflects the financial strength of the Lloyd's market.

Segregation of Capital for Lloyd's Business

Funds at Lloyd's are defined as capital lodged and held in trust at Lloyd's as security for policyholders and to support a member's overall underwriting business. The funds lodged can be investments and cash but are often letters of credit drawn on one or more banks.

Where investments and cash are provided by a group company, or where a letter of credit is backed by collateral from a group company, the assets clearly are encumbered. To reflect the limitations on the transfer of this capital across the group, A.M. Best applies a nominal 1% capital charge to the group's assets that support FAL in the group's consolidated BCAR. This is in line with A.M. Best's baseline treatment of balances associated with noncontrolled assets.

The analyst may increase the asset risk factor beyond the nominal 1% following an evaluation of the likelihood that FAL will be used to pay syndicate losses. The evaluation would take into account the historical and expected performance of the group's Lloyd's business, as well as the potential exposure of this business to large, marketwide losses.

Letters of Credit

Insurance groups commonly use letters of credit (LOCs) to meet their FAL requirements, and these may be either collateralized or uncollateralized. In the case of a collateralized LOC, assets backing the LOC are included in A.M. Best's assessment of a group's available capital, although a capital charge may be applied (see above).

An undrawn, uncollateralized LOC supporting FAL receives no capital credit in a group's consolidated BCAR. The rationale for this treatment is that, if the LOC was to be drawn down, it would become short-term bank debt on the group's balance sheet. A.M. Best does not afford capital credit to short-term bank debt.

However, it is recognized that, under a stress scenario, an uncollateralized LOC could be converted readily to cash to meet the group's Lloyd's obligations. For this reason, the existence of an uncollateralized LOC would be considered in A.M. Best's assessment of the group's financial flexibility and liquidity.

Internal Reinsurance of Lloyd's Business

Within an insurance group, earnings from the group's corporate member often are transferred to another group entity, typically to realize tax efficiencies. This is frequently achieved through quota-share reinsurance, with the group reinsurer providing a share of the corporate member's FAL that matches the proportion of risk assumed. For example, if there is a 50% whole-account quota share in place, the corporate member and reinsurer each may provide 50% of the FAL.

When determining the appropriate treatment in the reinsurer's BCAR of Lloyd's business assumed and FAL lodged to support this business, A.M. Best first will conduct a detailed review of the reinsurance contract in place and the treatment of the risk assumed in the reinsurer's accounts.

If the Lloyd's-related risk is reflected accurately in the reinsurer's balance sheet and income statement – for example, if there is a standard quota share agreement in place – A.M. Best will include the risk associated with this business and the capital supporting this risk (a share of FAL) in its analysis of risk-adjusted capitalization through BCAR. In addition, A.M. Best will conduct BCAR analysis excluding the risk and capital relating to the Lloyd's business.

In circumstances where the proportion of FAL provided by the reinsurer exceeds the proportion of Lloyd's business it assumes, A.M. Best will deduct an amount equal to the excess from capital in the stand-alone analysis of the reinsurer. This is to avoid giving credit for capital that supports risks not captured in the reinsurer's accounts and BCAR.

Occasionally, the transfer of premium and reserve risk to the reinsurer is not reflected in the reinsurer's accounts in a manner that allows A.M. Best to capture the assumed risk accurately in BCAR – for example, if the reinsurance transaction is a quota share of the corporate member's profit/loss. If this is the case, in the absence of additional information, A.M. Best will deduct from available capital an amount equivalent to the reinsurer's share of FAL. Additional adjustments may be made to ensure that neither the

Lloyd's-related risk assumed by the reinsurer, nor the capital supporting this risk (FAL), is reflected in BCAR.

As participation in Lloyd's is on a limited-liability basis, the group reinsurer usually is not legally obliged to pay out more than its share of FAL to support its Lloyd's losses. By deducting FAL from available capital, A.M. Best is reflecting the maximum loss that the reinsurer would incur from the assumed Lloyd's business. Any business or reputational issues that may arise if the group is unable or unwilling to replenish its FAL are captured by A.M. Best in the consolidated analysis of the insurance group.

Summary

The starting point for every rating is the stand-alone evaluation of the legal entity's balance sheet strength, operating performance and business profile. This analysis incorporates all in-place financial and operational support provided to the subsidiary from its parent that is evident in the subsidiary's financial results. Rating enhancement refers to provided, but unused, support (e.g. untapped guarantee or stop-loss reinsurance) and the potential for future parental support. Rating enhancement also can be derived from the inherent benefits the subsidiary enjoys simply through being part of a strong, diversified insurance organization (e.g., distribution channels).

A.M. Best understands that in today's dynamic market, being able to allocate capital efficiently is a key competitive advantage. Through this criteria report, A.M. Best balances the policyholder protection afforded by the stand-alone financial strength of the legal entity, and the good-faith commitment of a parent to support the obligations of its subsidiaries. Regulatory regimes in Europe and elsewhere are tackling this same question. Solvency II is a direct attempt to incorporate the demands of the modern insurance marketplace into a new and improved regulatory framework.

A.M. Best believes a balance can be struck between in-place capital at the subsidiary level and a parental commitment to provide additional financial support when needed. A.M. Best encourages insurance organizations to speak to their analysts about their capital management strategies and highlight how each subsidiary operation fits into the group's overall business strategy.

Appendix A

Case Study of Varying Levels of Rating Enhancement Through Implicit Parental Support

A U.S.-headquartered insurance organization operates its global insurance business using three geographically distinct business platforms: London, the United States and Bermuda. The parent holding company in the United States possesses significant excess capital that is available to support its insurance operations. Through A.M. Best's top-down analysis of the consolidated group, the rating committee has determined that the highest possible insurer rating for the lead member of the group is A+. The parent company has expressed its commitment to each profit center, but it is clear that each holds a different level of importance to the overall earnings and business strategy of the group. The following paragraphs detail the unique features of the three business platforms and the important distinctions that drive the assignment of rating enhancement, or lack thereof.

Full Rating Enhancement

The London-based operating platform includes four European insurers located in England, Germany, France and Italy. The English and German carriers are composite insurers that write both life and non-life products, while the French and Italian insurers write life and annuity business. Each insurer is a market leader in its respective country, and together, these four insurance companies generate more than 70% of the group's total revenue and earnings. In addition, these entities employ roughly 50% of the group's capital and thus generate a solid risk-adjusted return. These companies consistently produce strong earnings with minimal volatility, and they are perceived to be at the heart of the parent's global business strategy. Much of the core competencies of the entire group are housed within this business center. As a result, the parent company in the United States has a track record of supporting these companies financially and operationally and has expressed its commitment to do so in the future.

The stand-alone assessment of each of these entities is A. They each are afforded full rating enhancement to the parent's rating of A+, mainly because of their:

- Importance to the parent's global strategy and contribution to its consolidated financial strength.
- History of receiving explicit support when needed.
- Lack of any regulatory restrictions as to the free flow of financial support from the parent.
- Significant excess capital held at the parent company.
- Solid, stand-alone financial strength.

Partial Rating Enhancement

In contrast to the London platform, the U.S. insurance hub consists of a large, national life and annuity company. This company's revenue and earnings comprise slightly more than 20% of the group's total, although it has experienced some negative swings in earnings in prior years due to its annuity products. This entity's required capital is 25% of the total group's required capital. The U.S. company operates under the same brand name as its affiliates in France and Italy and shares many back-office and product-development functions with these entities. There is cross representation with regard to the board members of these three entities, and management at the parent holding company has expressed its commitment to this U.S. entity. Even so, it is clear that this entity is of secondary importance to the stronger-performing European operations.

The current stand-alone assessment of the U.S. entity is A- because of its solid capital position and well-established business profile, which are offset in part by a history of volatile earnings. The rating enhancement results in a published rating of A. The rationale for only giving partial rating enhancement is that the operation is deemed nonessential to the global business plan, and performance has been subpar in relation to the strong earnings generated by the European operations. And although the subsidiary does not qualify for full rating lift, it does receive partial lift because it:

- Is integrated with the business of the lead life and annuity writers.
- Is a material provider of earnings to the group.
- Carries the same brand name.
- Has close operational ties to the European life companies.

No Rating Enhancement

The third platform consists of a Bermuda property catastrophe reinsurer. In a good year, this entity comprises only 10% of revenue and earnings, but operating losses have been reported in three of the past five years. Because of the shock-loss exposure inherent in writing property catastrophe reinsurance, the capital allocated to this operation is high, roughly 25% of the group's required capital. This entity operates independently from the group, and from a brand name perspective is not immediately recognizable as a member of the group. Management of the parent company has stated that it stands behind all of its insurance operations, but also has told A.M. Best that the plan is to spin off this entity within the next two to three years. In addition, management has expressed distaste for the volatile earnings generated by this operation. The stand-alone assessment of this entity is A- based on its very strong balance sheet, which is offset in part by a limited business profile and generally volatile earnings. This entity receives no rating enhancement because it is:

- Considered an investment by management with intent to sell in the near term.
- Not key to the group's global business strategy.
- Not a significant provider of earnings to the group.

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Equity Credit for Hybrid Securities

The increased use of nontraditional debt securities within the insurance industry reflects, in part, the generally more favorable treatment they receive in the analysis of an issuer's capital structure by regulators and rating agencies. The more favorable treatment of hybrid securities relative to traditional debt instruments is principally due to the existence of equity-like features or characteristics. Many of these instruments also provide a lower after-tax cost of capital to the issuer, while at the same time they are a less expensive form of accessing capital than through the equity markets.

Market participants are asking for guidance as to A.M. Best Co.'s perspective on hybrid securities and the amount of equity benefit that may be forthcoming to an organization's capital structure in the rating process. This criteria describes how hybrid securites are evaluated for equity credit when financial leverage is calculated on a consolidated holding company basis, and should be read in conjunction with *Insurance Holding Company and Debt Ratings*. For more information on how hybrid securities and debt are evaluated for equity credit when risk-adjusted capitalization is calculated, please refer to *Understanding BCAR for Life/Health Insurers* and *Understanding BCAR for Property/Casualty Insurers* and *Evaluating U.S. Surplus Notes*. All criteria reports are available at *www.ambest.com/methodology.*

Hybrid securities, typically in the form of a preferred stock, trust-preferred securities, convertible securities or subordinated debt, share some basic characteristics associated with common equity. Hybrids can include a variety of features that, over time, allow them to exhibit changing proportions of debt and equity characteristics.

Equity Credit Treatment

Conventional balance sheet treatment of certain types of securities by the accounting profession often does not represent a true picture of the risk or financial leverage employed by an organization. For instance, an issuer may have a large portion of reported equity in the form of traditional preferred stock, which has a relatively short time to maturity. Conversely, an issuer may report a relatively large debt issue on its balance sheet that can and will be converted to common equity over a short period of time. The former is potentially exposed to a major credit event, while the latter ultimately will result in improved financial flexibility.

Accordingly, A.M. Best analyzes the features and characteristics of all securities within an issuer's capital structure and may adjust reported balance sheet financial leverage by giving, or possibly removing, equity credit for certain instruments.

While financial leverage remains a critical consideration during the rating process, A.M. Best believes that the effect of hybrid securities on debt-service ability is also a key determinant of debt capacity. In addition to the positive impact these securities may

Equity Characteristics

- Permanency of capital – is the note available to pay losses when needed?
- Ability to defer interest or dividend payment – are payments deferrable when a company is in distress?
- Subordination in an issuer's capital structure, i.e., loss protection provided to policyholders and other creditors.

Additional Information

Criteria:
Insurance Holding Company and Debt Ratings

Understanding BCAR for Property/Casualty Insurers

Understanding BCAR for Life/Health Insurers

Evaluating U.S. Surplus Notes

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have on operating cash flow through interest-deferral features, cash coverage also can be tempered or strengthened materially by a company's consistency and sustainability of earnings and alternate sources of cash, including cash at the parent holding company level and unrestricted dividends from subsidiaries.

Rating Guidelines

When assessing a specific entity's capital structure, A.M. Best reviews the company's history in managing its overall capital base, its funding needs and the sources and types of financing used to satisfy its capital requirements. Integral to the overall rating process is having an in-depth understanding of management's historical and current strategies toward maintaining appropriate levels of capitalization and the composition of its capital base prospectively. This understanding is of particular importance when attempting to quantify equity credit for hybrid securities, and assessing the permanency and form of current and future capital. For example, a company may be highly focused on maintaining or improving general measures of operating performance such as earnings per share or return on common equity. In such cases, the company may be unwilling to tolerate the dilution caused by the conversion of a security into common shares, and it may in fact issue new debt securities to fund a share repurchase.

In general, A.M. Best grants equity credit for hybrid securities that exhibit the characteristics of common equity up to 20% of a firm's total capital. The amount of credit given to hybrid securities is based on A.M. Best's belief that the insurance industry, as well as the broader financial services sector, is very sensitive to changes in the market's perception of an issuer's financial health. This sensitivity may expose issuers to sudden changes in the cost of capital or a diminished ability to access the capital markets. As such, A.M. Best takes a conservative view toward the amount of equity credit an individual security may receive, as well as the aggregate credit an issuer may receive. Additionally, A.M. Best calculates coverage ratios including hybrid obligations.

As a general guideline, holding companies with financial leverage ratios less than 35% (adjusted for equity credit) on a consolidated basis are considered to have an acceptable level of debt and hybrids for "a-" or higher issuer credit ratings (ICRs); the range of 35% to less than 45% is considered acceptable for issuer credit ratings in the "bbb" category; and leverage ratios greater than 45% are associated with ICRs of "bb" and below (see **Exhibit 1**).

Exhibit 1

Typical Holding Company Financial Leverage & Interest Coverage Guidelines

ICR Category	Debt/Capital*	Interest Coverage**
aaa	<15%	>10x
aa	<25	>7x
a	<35	>5x
bbb	<45	>3x
bb	<65	>2x
b	>65%	<2x

* Long-term + Short-term Debt (adjusted for hybrid securities)/ [(Total Shareholder's Equity +Minority Interest and Other + Preferred Stock (Non Equity) + Long-term Debt + Short-Term Debt) net of AOCI]
** (Pretax Operating Income + Interest Expense) / (Interest Expense + Preferred Dividends)
A.M. Best's economic view of capital in any given organization can differ significantly from reported capitalization.

Equity Credit Guidelines

In ranking equity-credit-afforded securities along an equity-debt continuum, A.M. Best places senior debt with a short time to maturity and a cash put option at one end and common stock at the other end. All other securities fall in between, based on loss-absorption characteristics and their cash-flow flexibility. Given that equity credit is linked to loss absorption (structural subordination) and relative permanency in the capital structure, equity credit can be assigned to a security relative to its time to maturity and notching (see **Exhibit 2A**).

In most cases, notching is determined by the structural subordination as described in the security's indenture (see **Exhibit 2B**). For more information on notching, see *Insurance Holding Company and Debt Ratings*.

In general, as notching widens, the amount of equity credit increases for a given time to maturity. The table below assumes non-convertible securities with interest/dividend payments that are cumulative and may be deferred for 3-7 years. Equity credit for a security may diverge from the guidelines based on other features of the security. For example, interest payments that are deferrable and non-cumulative could result in a modest increase in equity credit from the guideline. Due to its equity attributes, preferred stock (and securities with features similar to preferred stock) receives the higher end of the equity credit range relative to similarly rated securities (e.g., junior subordinated debt). Convertible securities can receive varying degrees of equity credit depending on the terms and structure of the particular instrument. If a security has an issuer call option that can be exercised in the next five years, and A.M. Best has reason to believe that the security will be called and not replaced with an issue possessing the same or similar equity content, then the issuer call date will be considered the effective maturity date. This determination is made after an analysis of several factors including the stated intentions of management, the existence and cost of incentives to call (step up features, etc.), interest rate and market conditions, market expectations regarding the call feature, and the track record of management with respect to exercising the option to call.

Exhibit 2A
Equity Credit Guidelines: Notching Versus Maturity

	Notches		
Remaining Years to Maturity	0	1	2
5	0%	0%	10%-20%
10	0	10	20-35
20	0	20	30-50
30	0	30	40-70
40	0	40	50-80
Perpetual	0	50	60-90

Exhibit 2B
Notching

Security Type	Notches From Non-Operating Holding Company
Senior Debt	0
Subordinated Debt	-1
Junior Subordinated Debt, Trust Preferred, Capital Trust Securities, Preferred Securities/Stock	-2

The placement of securities shown in **Exhibit 2A** reflects A.M. Best's typical perspective, though rating committees have flexibility to adjust equity credit attribution based on individual circumstances.

Classes of Hybrid Securities

The determination of equity credit for any given security is based on that instrument's specific features when compared/contrasted with the characteristics of equity: no maturity, no ongoing payments and deep subordination.

Below is a brief overview of the major classes of hybrid securities from the context of features that typically warrant equity credit.

Traditional Preferred Stock

Generally viewed as the original form of a hybrid security, preferred stock pays a stated dividend yield, much like the interest rate paid on bonds, but is unlike common stock in that it typically does not confer voting rights. Holders of preferred stock also have certain preferences or priorities over holders of common stock as to dividends and/or distribution of assets in the event of bankruptcy or liquidation.

Preferred stock is issued directly by a holding company or operating company and can include equity-like features such as:

• Perpetual maturity, with no put options that present refinancing or repayment risk;

• Ability to defer ongoing payments; and

• Deep subordination, senior only to common stock.

While some forms of preferred stock may receive nearly full equity credit, such as a perpetual noncumulative issue, other forms may not receive any equity credit. For example, issues with a short time to maturity expose the issuer to refinancing or repayment risk. The issuer also may elect to replace these deeply subordinated obligations with securities having a more senior claim in the overall capital structure. Also, there is a risk that the organization may not be able to issue new securities to repay maturing issues.

Convertible Securities

Convertible securities typically can be converted into shares of a company's common stock. For this reason, the issuance of convertible securities typically is seen as management's readiness to issue equity in the future. In general, these instruments can be grouped into two broad categories: mandatory conversion and optional conversion.

In a traditional, mandatorily convertible security, the conversion formula is fixed; that is, the instrument automatically converts upon maturity into common stock based on a fixed price. Such instruments are equity-like since there is no obligation to return cash to investors at maturity. Furthermore, equity benefit increases progressively as maturity approaches, particularly if it is clear that the equity will remain a permanent part of the issuer's capital base. In such cases, these securities may receive close to 100% equity credit within two years of conversion. Securities with a floating exchange rate are viewed as more debt-like.

Other variations of mandatorily convertible securities include those that convert to a:

• Fixed number of common shares when issued, which protects the issuer from potential earnings per share dilution; and

• Number of shares that equals the principal amount owed to the investor, which may expose the issuer to significant earnings per share dilution should its stock price become depressed at the time of maturity.

In general, a convertible security issue allows the issuer to benefit by offering lower dividend or interest rates, which enhances the issuer's fixed-charge coverage ratio.

Typically, optionally convertible securities can convert to a fixed number of common shares at the option of the investor. When reviewing such issues for potential equity credit treatment, A.M. Best looks for provisions to include an issuer's call feature, exercisable after a given time period, to require investors to convert. Without the call feature, it is unlikely that investors would forego the benefit of continuing to receive dividend payments on "in the money" securities.

Key features of optionally convertible securities typically include:

• Maturity—Its automatic conversion to common shares from issue makes it closely resemble common equity's no-maturity characteristic, but while these securities typically do not have a repayment issue, they represent a subordinated claim in the event of default or cross default.

• Dividend or ongoing cash payments can be deferred.

• Such securities are subordinated within the capital structure.

Trust Preferred Securities

Trust preferred securities, which include issues such as MIPS (Monthly Income Preferred Stock), QUIPS (Quarterly Income Preferred Stock) and TOPRS (Trust Originated Preferred Redeemable Stock), have the characteristics of both debt and equity instruments. These hybrid securities allow the issuer to make tax-deductible interest payments, which reduce the issuer's cost of capital while also providing equity-like benefits similar to traditional preferred stock.

Trust preferred securities generally are issued by a special-purpose trust created by the parent company. The trust lends proceeds to the parent, typically through a subordinated loan that is junior to all other debt of the parent. The terms of the preferred securities match the terms of the underlying subordinated loan.

Payment obligations of the trust typically are guaranteed through several agreements and by the terms of the debt securities that the trust holds. The agreements normally include a guarantee and an expense undertaking from the parent company; the trust indenture for the debt securities the trust holds; and the trust declaration of the trust itself.

Typical key features of trust preferreds include:

• Long maturity, between 20 and 40 years, with an issuer call option after five years. As such, it is an obligation that must be repaid from cash flow or refinanced.

• Dividends are deferrable, subject to suspension of common dividend, for up to five years without triggering a default. Deferred amounts accumulate, accrue interest and must be paid before resuming common dividends or at the end of the limited deferral period.

• Subordination to all debt obligations of the parent and on parity with other directly issued trust preferreds. Due to the loan structure underlying the issued security, it has a more senior claim in liquidation to preferred stockholders.

• Default triggers where, as a debt claim, it is an obligation that could become due immediately in the event of a default, cross default, bankruptcy filing or other form of reorganization. Also, the existence of a call option would raise the possibility that the instrument could be replaced in the future with a new issue, with no guarantee that the refinancing will be neutral with respect to senior creditors in the issuer's capital structure.

Subordinated Debt

Especially in regions outside of the United States, the issuance of subordinated debt is prevalent. Subordinated debt supplements capital without diluting existing shareholders' control and allows the issuer to make tax-deductable interest payments, which

reduces its cost of capital. In addition to these traditional debt features, these instruments often have equity-like charateristics such as a long or perpetual maturity and deferrable coupon payments.

Typical key features of these instruments include:

• Long term, typically having a stated maturity of over 20 years (often perpetual), with an issuer call option after 5 or 10 years;

• Subordination to policyholders and senior debt holders;

• Coupons can be deferred and are non-cumulative.

Appendix

Case Study – $500 Million Issuance of Hybrid Securities

($ Millions)

Capital Structure

	Prior Issue	Post Issue
Debt (Senior Unsecured)	$600	$600
Hybrid Issuance		$500
Shareholders' Equity	$1,800	$1,800
Capital	$2,400	$2,900
Debt + Hybrid to Equity	33.3%	61.1%
Debt + Hybrid to Capital	25.0%	37.9%

Hybrid Securities

	Issue Amt	Equity Credit	Description
Hybrid I	$500	75%	Mandatorily convertible securities, five years to conversion, with a fixed conversion formula; that is, the instrument automatically converts upon maturity into common stock based on a fixed price.
Hybrid II	$500	50%	Trust preferred securities, 40 years remaining to maturity, a call option after five years. Dividends are deferrable for up to five years without triggering a default. Deferred amounts accumulate and accrue interest.
Hybrid III	$500	25%	Optionally convertible securities with a fixed exchange rate and an issuer's call feature, exercisable after five years.

Adjusted Leverage Measures

	I	II	III
Debt (Senior Unsecured)	600	600	600
Debt Charge for Hybrid Issuance	125	250	375
—Debt + Hybrid Charge	$725	$850	$975
Shareholders' Equity	1800	1800	1800
Equity Credit for Hybrid Issuance	375	250	125
Equity + Hybrid Credit	2175	2050	1925
—Capital	$2,900	$2,900	$2,900
Debt + Hybrid Charge to Capital	25.0%	29.3%	33.6%

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Methodology

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Understanding Universal BCAR

The purpose of this report is to document the existing criteria and methodology related to A.M. Best Co.'s Universal BCAR model, which is used in the evaluation of balance sheet strength for those companies that do not file U.S. or Canadian statutory statements. The Universal BCAR model can also be used in the evaluation of balance sheet strength at the insurance holding company level, regardless of domicile or accounting standard. In addition, the model can also be used to evaluate the prospective balance sheet strength of start-up insurers based on their proposed business plans.

Introduction

The objective of A.M. Best Co.'s financial strength ratings is to provide an opinion of an insurer's financial strength and ability to meet ongoing obligations to policyholders. The assignment of an interactive rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile as compared with A.M. Best's quantitative and qualitative standards.

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing obligations to policyholders, the most important area to evaluate is its balance sheet strength, since it is the foundation for policyholder security. Performance then determines how that balance sheet strength will be enhanced, maintained or eroded over time. Balance sheet strength measures the exposure of a company's capital to its operating and financial practices. An analysis of a company's underwriting, financial and asset leverage is very important in assessing its overall balance sheet strength.

Underwriting leverage is generated from current premium writings, reinsurance recoverables and loss reserves. In order to assess whether a company's underwriting leverage is prudent, a number of factors unique to the company are taken into account, including type of business written, quality and appropriateness of its reinsurance program, and adequacy of loss reserves.

Financial leverage is created through debt or debt-like instruments (including financial reinsurance) and is reviewed in conjunction with a company's underwriting leverage. An analysis of financial leverage is conducted at both the operating company and holding company levels, since debt at either level could place a call on the insurer's earnings and strain its cash flow, leading to financial instability.

Asset leverage measures the exposure of a company's capital to investment, interest rate and credit risks. The volatility and credit quality of the investment portfolio, recoverables and agents balances determine the potential impact of asset leverage on the company's balance sheet strength.

A company's underwriting, financial and asset leverage also are subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR), which allows for an integrated review of these leverage areas. The universal BCAR model calculates the Net Required Capital to support the financial risks of the company associated with the exposure of assets and underwriting to adverse economic and market conditions, and compares this required capital to economic capital. Some of the stress tests within BCAR include above-normal catastrophes, a decline in

Additional Information

Criteria:

Understanding BCAR for U.S. Property/Casualty Insurers

Understanding BCAR for U.S. and Canadian Life/Health Insurers

A.M. Best's Perspective on Operating Leverage

Analyzing Contingent Capital Facilities

The Treatment of Terrorism Risk in the Rating Evaluation

Risk Management and the Rating Process for Insurance Companies

Assessing the Tail Risk of Sidecars

Catastrophe Analysis in A.M. Best Ratings

Equity Credit for Hybrid Securities

Insurance Holding Company and Debt Ratings

Rating Members of Insurance Groups

Evaluating U.S. Surplus Notes

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This publication release updates the version issued May 6, 2015 to remove any reference to secure/vulnerable rating categories in the text and the BCAR Guidelines exhibit on Page 5.

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equity markets and a rise in interest rates. This integrated stress evaluation permits a more discerning view of a company's balance sheet strength relative to its operating risks.

A company's BCAR result is extremely useful in evaluating its balance sheet strength, but BCAR is only one component of that analysis. In addition, balance sheet strength is only one component of the overall financial strength rating, which also includes operating performance and business profile. BCAR establishes a guideline for risk-adjusted capital to support a rating, but other factors driving expectations of future balance sheet strength drive the rating as well. All of these factors are important to the overall rating process.

Overview of BCAR

A.M. Best's capital formula uses a risk-based capital approach whereby net required capital is calculated to support three broad risk categories: investment risk, credit risk and underwriting risk. A.M. Best's capital adequacy formula also contains an adjustment for covariance, reflecting the assumed statistical independence of the individual components. A company's adjusted capital is divided by its net required capital, after the covariance adjustment, to determine its BCAR.

Investment Risk

Investment risk includes three main risk components: fixed-income securities, equities and interest rate. Capital charges are applied to different asset classes based on the risk of default, illiquidity and market-value declines in both equity and fixed-income securities. Additionally, higher capital charges are ascribed to affiliated investment holdings, real estate, below-investment-grade bonds and nonaffiliated, privately traded common and preferred shares because of the illiquid nature of the asset and/or the potential volatility of the reported value.

The levels of liquidity and volatility in a country's capital markets are an important part of A.M. Best's analysis. The influence of market liquidity and volatility on the financial system and the broad macro economy are discussed in the *Evaluating Country Risk* criteria. These risks include, but are not limited to, sharper and more frequent business cycles caused by more volatile consumption and investment, and increased uncertainty concerning access to capital. The greater the degree of market volatility, the more difficult the operating environment for insurers.

These country-specific risk factors also can have a direct impact on an insurer's risk-adjusted capital. At the company level, illiquidity and volatility will depress an asset's valuation, and in extreme scenarios, severely limit access to cash. The potential for market illiquidity and volatility to increase the risk within an insurance company's invested assets or diminish financial flexibility is captured through country-specific risk charges, based on the origin of the asset, within A.M. Best's Universal BCAR model.

In some instances, some or all of the risk associated with a particular asset may be borne by the policyholder. In those situations, the investment risk to the insurance company may be reduced.

A.M. Best's capital model incorporates an interest-rate risk component that considers the decline in market value of a company's fixed-income portfolio as a result of rising interest rates. The interest rate risk calculation will reflect the fact that companies writing life and annuity products will have an exposure to disintermediation and cash-flow mismatch risks, whereas a company writing property/casualty products will have an interest-rate risk exposure when a shock event occurs. Interest rate risk for annuity writers will vary based on the type of products offered and the source of that business.

Investment risks are typically the main drivers of a life and annuity insurer's capital requirements.

Credit Risk

Capital charges are applied to different receivable balances to reflect third-party default risk. Credit risk factors are ascribed to recoverables from all reinsurers, including affiliates. Required capital for credit risk may be modified after taking into account acceptable collateral offsets for reinsurance balances; the quality of the reinsurers that participate in the company's reinsurance program; and the company's dependence on its reinsurance program. Also included in the credit risk component are charges for premium balances receivable; accrued retrospective premiums; deposits in pools and associations; funds held by ceding insurers; and other, miscellaneous receivables.

Underwriting Risk

This category encompasses the risks associated with net loss and loss-adjustment expense reserves, net premiums written and net unearned premiums. The reserve component requires capital based on the risk inherent in a company's loss and loss-adjustment expense reserves, adjusted for A.M. Best's assessment of its reserve equity. Reserve equity is a function of the estimated reserve deficiency, the payout pattern of the reserves and the discount rate, which is currently 4% in BCAR. The net premiums written component is a forward-looking component and requires capital based on the pricing risk inherent in a company's expected book of business for the upcoming year. The unearned premium component reflects the exposure to pricing risk on premium that was written in the past but is still unearned as of the current evaluation date and can be a material exposure for long duration contracts.

Long duration property/casualty contracts are defined as contracts having terms in force for more than 13 months and for which the insurer cannot cancel or increase the premium during the life of the contract. Long duration unearned premiums will be included on the loss reserve page and other adjustments will be made in an effort to capture other risks associated with writing long duration contracts. In the case of a contractual liability policy (CLIP), where the insurer guarantees the liabilities of another entity for a fee, the underlying unearned premium that is being guaranteed will be added to the loss reserve page instead of the unearned CLIP premium.

Required capital for the underwriting risk components may be increased to reflect an additional surcharge for "excessive" exposure growth. In addition, there is credit for a well-diversified book of business, but this credit is minimized for those companies that maintain small books of many lines of business and may not necessarily have expertise in each of them. For those composite companies that write both property/casualty and life insurance, the amount of diversification credit may be increased to reflect the additional benefits from diversifying across insurance sectors.

For life and health insurers, underwriting risks are divided into mortality risks, longevity risks and morbidity risks. Mortality risks are based on volume of life insurance in force, net of reserves and reinsurance, with risk charges grading lower for higher amounts at risk. Longevity risks are present in annuities and certain types of pension plans, as plan participants are living longer than expected when payment amounts originally were determined. Morbidity risks vary by line of business and therefore warrant different charges. Generally, health care lines of business with long-tail risks (disability, long-term care) will have higher premium risk charges than shorter tail risks (medical, critical illness).

For property/casualty insurers, underwriting risk is typically the largest risk category and usually accounts for two-thirds of a company's gross required capital.

Exhibit 1
Available Capital Components:

Reported Capital

Equity Adjustments:
- Unearned Premiums
- Assets
- Loss Reserves
- Reinsurance

Debt Adjustments:
- Debt/Hybrid Securities
- Debt-Service Requirements

Other Adjustments:
- Potential Catastrophe Losses (Net of Reins.)
- Future Operating Losses
- Future Dividends
- Contingent Capital
- Contingent Reserves
- Value in Force (Life Business)
- Deferred Acquisition Costs
- Goodwill
- Other Intangible Assets

Required Capital

Collectively, the investment, credit and underwriting risk components generate more than 99% of a company's gross required capital, with the business risk component generating minimal capital requirements for off-balance-sheet items. Off-balance-sheet items include items such as noncontrolled assets, guarantees for affiliates, contingent liabilities, pension obligations and other post-employment/retirement obligations. A company's gross required capital, which is the sum of the capital required to support all of its risk components, reflects the amount of capital needed to support all of those risks if they were to develop simultaneously. However, these individual components then are subjected to a covariance calculation within the BCAR formula to account for the assumed statistical independence of these components. This covariance adjustment essentially says that it is unlikely that all of the individual risk components will develop simultaneously, and this adjustment generally reduces a company's overall required capital.

A.M. Best recognizes the distortions caused by the "square root rule" covariance adjustment, whereby the more capital-intensive risk components are disproportionately accentuated while the less capital-intensive risk components are diminished in their relative contribution to net required capital. Nevertheless, by using other distinct capital measures, A.M. Best can counterbalance this apparent shortcoming.

Determination of Available Capital

A.M. Best makes a number of adjustments to a company's reported capital within its universal capital model to provide a more economic and comparable basis for evaluating capital adequacy. Different accounting methods and regulatory requirements across the world require numerous adjustments to a company's reported capital. Goodwill and other intangible assets are eliminated. Pre-event catastrophe reserves are removed from the loss reserves and moved into available capital on a tax-effected basis. Adjustments for any embedded value in unearned premium reserves, loss reserves and fixed-income securities are made if the company has not already reflected these in its reported capital. Further adjustments are made to capital to reflect other non-balance sheet risks, including catastrophe exposures and debt-service requirements.

A.M. Best's capital model emphasizes permanent capital and consequently will reduce a company's reported surplus for encumbered capital, which includes surplus notes and future debt-service requirements of an affiliated holding company. This reduction, in whole or in part, depends on the magnitude of, and dependence an insurance group has on, debt-like instruments and their associated repayment features.

On a qualitative basis, issues such as where the debt is held vs. where the cash is used; the existence of other sources of income to offset the cost of debt; fixed-charge coverage; and the overall level of debt relative to the organization's total capital all are considered. For example, when debt is issued at the holding company but the cash is held at the operating insurance company, even though the cash is given full credit in the BCAR analysis of the operating company, the actual rating of the operating company could be limited by the evaluation of the financial leverage and earnings coverage at the holding company.

Formula Drivers

A company's gross capital requirement within A.M. Best's capital model is generated primarily from its investment, credit and underwriting risks. A company that maintains a more aggressive investment portfolio, is heavily concentrated in one asset or sector, or is heavily dependent on pyramided capital likely will generate a lower BCAR value. Companies that have excessive exposure to third-party credit risk or are heavily dependent on reinsurance likely will generate lower BCAR scores. The amount of required capital generated from the underwriting risk components is largely a function of the company's mix of business, amount of available capital, growth in exposure, stability of loss development, profitability, loss-reserve adequacy and length of claims payout. All other things being equal, the absolute BCAR score of a company will be lower because of higher capital requirements associated with greater indicated reserve deficiencies, as well as unstable or unprofitable business.

In addition, the model can be adjusted in response to various market issues. Some examples of the issues that can impact capitalization include rate changes, the stage of the underwriting cycle, changing reinsurance products and reinsurance dependence. The ability of the model to respond to these market issues makes it a robust tool that assists in the evaluation of the company's balance sheet strength.

The basis of risk measurement for some of the key drivers of required capital in the universal BCAR model is expected policyholder deficit. A.M. Best adopted the concept of expected policyholder deficit to better calibrate the model's loss-reserve and premium-risk factors, as well as other risk factors in the model. The concept of expected policyholder deficit allows risk charges to be calibrated to a specific level of insolvency risk and also takes into consideration the expected cost, or severity, of insolvency.

BCAR Is an Absolute Measure

The universal BCAR model produces an absolute score, which is the ratio of the company's adjusted capital to its own net required capital. Given strong, stable operating performance, sound risk management, high quality capital and strong financial flexibility, **Exhibit 2** provides a reasonable guide for the BCAR levels needed to support A.M. Best's Financial Strength Ratings.

Exhibit 2
BCAR Guidelines

BCAR	Implied Balance Sheet Strength
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

Additional Stress Testing

A.M. Best also will stress a company's BCAR score for a second catastrophic event according to the procedures outlined in its criteria report titled *Catastrophe Analysis in A.M. Best Ratings* and its criteria report titled *The Treatment of Terrorism Risk in the Rating Evaluation*. The testing will incorporate natural catastrophes and/or man-made events such as terrorism to monitor how sensitive a company's balance sheet strength is to a second catastrophic event. For casualty writers, an estimate of a casualty shock loss may be used in the analysis of balance sheet strength. Additional stresses may be employed when insurers accumulate large amounts of higher risk investments.

Conclusion

The tools to allocate capital and understand capital strength continue to evolve. These tools often vary in theory, purpose and outcome. It is important to remember that, while they can add significant value, they are only tools. A.M. Best's proprietary universal BCAR is one of those tools that look at capital needs well above financial solvency. A.M. Best will continue to enhance BCAR going forward to improve its accuracy in measuring balance sheet and operating risk.

BCAR is important to A.M. Best's evaluation of both absolute and relative capital strength. Consistent with standards embedded within the universal BCAR model, A.M. Best would expect that well-managed and highly rated companies will maintain capitalization levels in excess of the risk-adjusted amounts indicated by the published guidelines to support their current ratings.

A.M. Best is quick to caution, however, that although BCAR is an important tool in the rating process, it isn't sufficient to serve as the sole basis of a rating assignment. BCAR, like other quantitative measures, has some limitations and doesn't necessarily work for all companies. Consequently, capital adequacy should be viewed within the overall context of the operating and strategic issues surrounding a company. Business profile and operating performance are important rating considerations in evaluating a company's long-term financial strength and viability as well as the quality of the capital that supports the BCAR result. In addition, any holding company considerations also will play a key role in evaluating the financial strength of an insurance company.

In closing, A.M. Best believes that well-managed and highly rated insurers will continue to focus on the fundamentals of building future economic value and financial stability, rather than on managing one, albeit important, component of A.M. Best's rating evaluation.

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METHODOLOGY

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Related Reports

Criteria:
Evaluating Country Risk

Insurance Holding Company and Debt Ratings

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www.ambest.com/ratings/methodology

Measuring Transfer And Convertibility Risk

A.M. Best defines transfer and convertibility risk (T&C risk) as the risk that capital and exchange controls may be imposed by government authorities that would prevent or materially impede the private sector's ability to convert local currency into foreign currency and/or transfer funds to nonresident creditors.

A.M. Best determines the T&C risk present in each of the countries in which ratings are assigned. The final result of this analysis is a T&C ceiling on the credit rating scale. Nevertheless, a T&C risk evaluation is not a rating; rather, it is a factor applied to all holding company and debt ratings.

A.M. Best's approach to measuring T&C risk evaluates the likelihood that a sovereign would disrupt the ablility to convert local currency into foreign currency and/or transfer funds to nonresident creditors. The base assumption is that such restrictive controls would be undertaken only in the event that the sovereign was facing default. Thus, T&C ceilings are always equal to or higher than a country's sovereign rating. With all else being equal, a country with a lower sovereign rating (i.e., a higher probability of default) will have higher T&C risk. However, the likelihood of a country implementing capital and exchange controls in a default scenario depends on the disposition of the government and the political situation.

The application of T&C risk ceilings is separate and distinct from the application of country risk in the rating process, although A.M. Best incorporates country risk and T&C risk into all of its ratings. A.M. Best's definition of country risk and its approach to country risk analysis are summarized briefly on page 3. More information on the country risk methodology, *Evaluating Country Risk*, is available at *www.ambest.com/ratings/methodology*.

Evaluating a Sovereign

The first step in estimating T&C risk is measuring the creditworthiness of a sovereign. A.M. Best does not assign credit ratings to sovereign entities. However, for purposes of developing T&C ceilings, A.M. Best evaluates the sovereign using publicly available information, including third-party assessments and ratings.

If the country's sovereign debt is rated by the other major credit rating agencies, A.M. Best relies on an equal-weighted average of these ratings. If only one agency rates the country, then that one agency's rating is used.

If the other major credit rating agencies do not rate the country's sovereign debt, A.M. Best evaluates the country's creditworthiness and develops an internal sovereign estimation based on por-

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tions of A.M. Best's Country Risk criteria, as well as a more detailed look at the country's debt and deficit positions.

If there is insufficient information available to determine the creditworthiness of a sovereign, then A.M. Best does not make a T&C determination and therefore will not assign a rating to a holding company or debt issuance in that country.

Determining the T&C Score

Once a country's sovereign rating is established, A.M. Best determines the likelihood of the country implementing currency controls given default. To estimate this risk, A.M. Best applies a quantitative model to provide a baseline score of the T&C risk and then conducts qualitative analysis to determine the final T&C risk evaluation.

The quantitative model is a weighted average of four components that impact the level of T&C risk in a country. The four components of the model are described below.

Degree of Capital and Trade Controls

The first category measures the degree to which the government currently uses capital, exchange and/or trade controls in the economy. This measure indicates the government's proclivity to intervene in the economy. If a country already uses capital controls, it is likely that, if faced with a default, it would increasingly apply restrictive controls. The indicators used in this section include the freedom to invest in financial assets, short- and long-term financial transaction risk, and the extent of current trade barriers and exchange controls.

Integration in World Economy

The second category measures the degree to which the country is integrated into the global economy. A sovereign more integrated into the global economy, including, but not limited to, memberships in international organizations and reliance on trade, would experience higher costs of implementing capital and exchange controls. The increased cost of these policies, all else being equal, reduces the probability that the government would use such controls. The indicators used in this section include number of memberships in world organizations; a government's attitude toward globalization; and the relative importance of import markets in the country's economy.

Rule of Law

The third category measures the strength and soundness of the rule of law in a country. Fundamental respect for property rights and investor rights lessens the likelihood that a sovereign would impede its currency from being transferred or converted. Indicators used in this section include protection of investors' rights, property rights and the degree of corruption.

Price Controls and Stability

The fourth category measures the degree to which a sovereign uses price controls and how susceptible a country is to bouts of high inflation. Price controls and high inflationary periods indicate the government's willingness to use the price level to generate desired political outcomes. Indicators used in this section include historical perspective on periods of high consumer price inflation and the degree to which the sovereign uses price controls.

Determining a Notch Increase

Each category of risk is scored, squared and summed using a weighted average (see **Exhibit 1**). The result of this calculation is a score between 1 and 5. A score of 5 denotes the highest likelihood that given default, a country would institute these restrictive capital controls.

Exhibit 1
Estimating Transfer and Convertibility Risk

The quantitative model used to estimate the probability of a country implementing these controls is described by the following equation.

$$\sqrt{((\omega_1(CONT^2))+(\omega_2(GLOB^2))+(\omega_3(RL^2))+(\omega_4(INF^2)))}$$

Where:
CONT = Degree of capital and trade controls
GLOB = Integration in world economy
RL = Rule of law
INF = Price controls and stability
ω = Weight applied to each component

Country Risk

A.M. Best defines country risk as the risk that country-specific factors could adversely affect an insurer's claims-paying ability. Country risk is evaluated and factored into all A.M. Best ratings. As part of the country risk evaluation process, A.M. Best identifies the various factors within a country that may directly or indirectly affect an insurance company. In doing so, A.M. Best separates the risks into three main categories: economic risk, political risk and financial system risk. Given A.M. Best's particular focus on and expertise in the insurance industry, financial system risk is further divided into two sections: insurance risk and non-insurance financial system risk.

A.M. Best's approach to country risk analysis employs a data-driven model that scores the level of risk present in a given country, plus a qualitative analysis of country-specific conditions that affect the operating environment for an insurer. Countries are placed into one of five tiers, ranging from countries with a "CRT-1" [Country Risk Tier 1], denoting a stable environment with the least amount of risk, to "CRT-5" [Country Risk Tier 5] countries that exhibit the most risk and, therefore, offer the greatest challenge to an insurer's financial stability, strength and performance. More complete definitions of each of the Country Risk Tiers are as follows.

CRT-1: Predictable and transparent political environment, legal system and business infrastructure; sophisticated financial system regulation with deep capital markets; mature insurance industry framework.

CRT-2: Predictable and transparent political environment, legal system and business infrastructure; sufficient financial system regulation; mature insurance industry framework.

CRT-3: Developing political environment, legal system and business infrastructure with developing capital markets; developing insurance regulatory structure.

CRT-4: Relatively unpredictable and non-transparent political, legal and business environment with underdeveloped capital markets; partially to fully inadequate regulatory structure.

CRT-5: Unpredictable and opaque political, legal and business environment with limited or nonexistent capital markets; low human development and social instability; nascent insurance industry.

This score provides a baseline view. After the quantitative model is run, the results are evaluated, and a final determination is made.

The final result is a number of notch increase from the sovereign rating between 0 notches and 3 notches.

- A 0-notch increase implies a very high likelihood that, given default, a sovereign will implement restrictive controls.

- A 1-notch increase implies a high likelihood that, given default, a sovereign will implement restrictive controls.

- A 2-notch increase implies a moderate likelihood that, given default, a sovereign will implement restrictive controls.

- A 3-notch increase implies the least likelihood that, given default, a sovereign will implement restrictive controls.

Special Cases

Certain countries, such as those in monetary unions or that exclusively adopt another sovereign's currency, do not lend themselves to this standard analysis. These countries are considered special cases and analyzed separately.

Monetary Unions

All countries in a monetary union are analyzed collectively and assigned the same T&C ceiling. This T&C determination is based on an analysis of the strength and stability of the monetary union and the associated currency. An example of this type of monetary union is the euro zone. While the sovereign ratings and country risk may differ among the member countries, the T&C ceiling would be the same across the group.

Using Another Sovereign's Currency

A second type of special case is a country that uses another sovereign's currency as legal tender in lieu of issuing its own. A country that uses another sovereign's currency is not subject to T&C risk in the traditional sense. However, the risk of a disruption to this currency system remains, which will be reflected in the

country's T&C ceiling. These countries are evaluated individually, and depending on the results of the analysis, the number of notches increase from the sovereign rating may exceed the standard maximum of 3.

Monitoring

The T&C risk evaluations are monitored on a regular basis. Changes in a sovereign rating could impact the T&C ceiling assigned, and changes in the political and economic situation could change the number of notch increase. These changes, under normal conditions, will be relatively slow-moving. However, in a period of stress, the changes could happen quickly.

Applying T&C Ceilings

This section will discuss how A.M. Best incorporates T&C ceilings into its rating process for operating companies, holding companies and debt, and then conclude with two practical examples of the application of the T&C ceiling.

Insurance Operating Companies

A.M. Best does not apply T&C ceilings to its insurer Financial Strength Ratings (FSRs), which provide an opinion of an insurance company's ability to satisfy its policyholder claims. Typically, the majority of an insurance company's policyholder claims are denominated in the country's local currency, and thus there is no transfer or convertibility risk.

Moreover, T&C ceilings are not applied to an insurance operating company's Issuer Credit Rating (ICR), which provides an opinion of the rated entity's ability to meet its senior-most obligations. Assuming that the senior-most creditors for insurance operating companies are policyholders, the ICR for that entity would remain an evaluation of the insurer's ability to pay local currency obligations. Therefore, it would not be appropriate to use a T&C ceiling on an operating company's ICR. The T&C ceiling does not affect the translation between an insurance operating company's ICR and FSR.

Holding Companies

T&C ceilings are applied to A.M. Best's Issuer Credit Ratings (ICR) on holding companies. For more information on A.M. Best's rating process for holding companies, please see *Best's Credit Rating Methodology – Global Life & Non-Life Insurance Edition* and *Insurance Holding Company and Debt Ratings*.

Debt Ratings

T&C ceilings are applied to A.M. Best's ratings of debt. For more information on A.M. Best's rating process for debt, please see *Insurance Holding Company and Debt Ratings*.

Ratings Application of T&C Risk: Hypothetical Case Studies

Case 1: Country with a T & C Ceiling of BBB-
Operating Company A operates in a country with a T&C ceiling of BBB-

• Operating Company A receives an "a" ICR and an "A" FSR rating
• Both of these ratings incorporated country risk, however, neither was impacted by the T&C ceiling.
• Operating Company A is owned by Holding Company B
• Typical notching from the operating company to the holding company is 3 notches, implying an ICR of "bbb"
• At this point the T&C ceiling is applied to the rating of Holding Company B and the rating is reduced to "bbb-", which is the highest possible holding company rating in this country due to the T&C ceiling

The final ratings are:
• Operating Company A FSR = "A"
• Operating Company A ICR = "a"
• Holding Company B ICR = "bbb-"

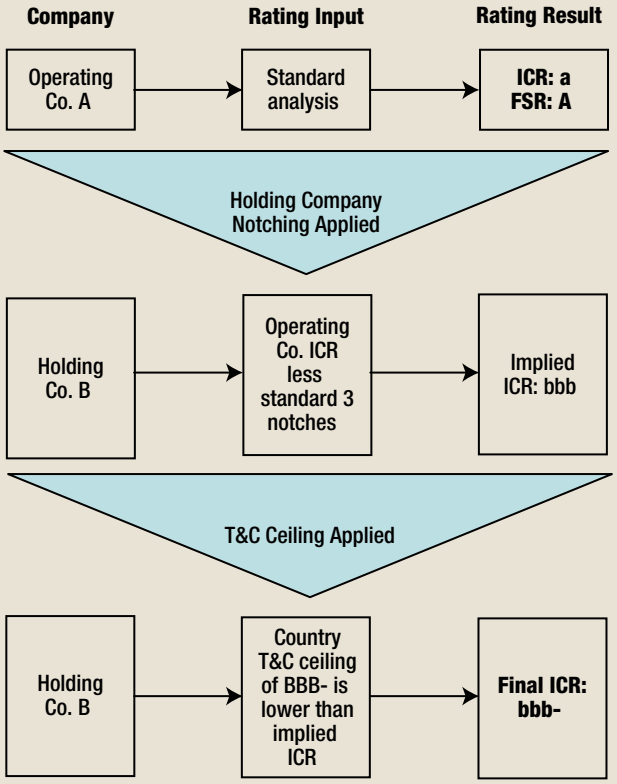
Case 2: Country with a T & C Ceiling of BB+
Operating/Holding Company[1] A operates in a country with a T&C ceiling of BB+

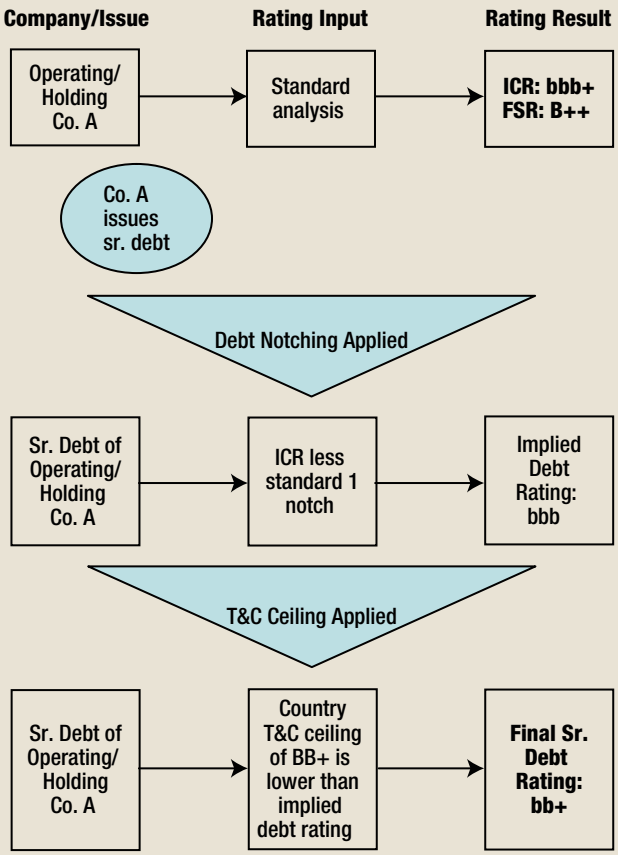
• Operating/Holding Company A receives a "bbb+" ICR and a "B++" FSR rating
• Operating/Holding Company A issues senior debt and receives standard 1 notch to senior debt implying a senior debt rating of "bbb"
• At this point the T&C ceiling is applied to the rating of the debt and the rating is moved to "bb+"

The final ratings are:

• Operating/Holding Company A FSR = "B++"
• Operating/Holding Company A ICR = "bbb+"
• Operating/Holding Company A's senior debt rating = "bb+"

1 In some regions, Europe for example, some groups are structured with an ultimate parent that is both a holding company and insurance operating company.





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Methodology

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Insurance Holding Company And Debt Ratings

Insurance holding companies (IHCs) and their associated capital structures can have a significant impact on the overall financial strength of insurance company subsidiaries by providing subsidiaries with a level of financial flexibility via capital infusions, access to capital markets and, in some cases, additional cash-flow sources from other operations. Likewise, debt and other securities are typically obligations of an IHC, which, depending on the magnitude of these obligations, can reduce the financial flexibility of the enterprise and potentially place a strain on future earnings and inhibit growth in surplus at a subsidiary. This criteria report describes the approach for analyzing and rating IHCs and debt. For more information on the process for analyzing non-insurance holding companies, see *Evaluating Non-Insurance Ultimate Parents*.

The analysis performed in the assignment of Best's Credit Ratings incorporates an assessment of material sources of risk to the rated entity, including the exposure to risk generated by activities at the parent/insurance holding company (IHC) and non-rated affiliates. Understanding the potential effect on a rated entity of the activities of the ultimate parent/IHC is integral to developing a comprehensive view of the rated entity's risk profile. As a result, all ultimate parents are reviewed and analyzed to determine, at a minimum, whether the parent's activities could reasonably be expected to place a call on the capital of the rated operating company, or expose the rated entity to material risk – even in cases where no public rating is assigned to the parent.

A.M. Best's fundamental rating approach for the assignment of any Best's Credit Rating is to examine an organization from both the top down and the bottom up. The foundation of the top-down analytical approach is the assessment of the IHC on a consolidated basis. A.M. Best's analysts also may assess the IHC on a parent-only basis to understand the parent's own direct activities. A.M. Best reviews the parent and consolidated entity to capture the entire group's performance, capital position, financial leverage, fixed-charge coverage, liquidity, asset quality and diversification, as well as other factors to ensure that the organization as a whole is in good financial standing. Also, if the IHC issues debt or hybrid securities to the public market, A.M. Best analyzes and may publicly rate these securities.

Metrics Applied to Analyze the IHC

Financial Leverage

When an insurer borrows at either the operating or IHC level, this changes its risk profile. To assess the level of debt within the capital structure, A.M. Best uses several financial leverage ratios that compare the level of debt to the level of capital. Accordingly, A.M. Best has developed guidelines for the impact of borrowing levels and servicing ability on an insurer's ratings. This analysis is part of the rating process, regardless of whether the insurer issues public debt (see **Exhibit 1**).

For complex organizations with multiple operating subsidiaries below an IHC, an analytical judgment is made of the extent to which each subsidiary is, in practice, supporting the borrowing and, as a result, the levels of leverage relevant to each subsidiary's Best's Credit Rating.

Additional Information

Criteria:
Understanding Universal BCAR

Evaluating Non-Insurance Ultimate Parents

A.M. Best's Perspective on Operating Leverage

Analyzing Insurance Holding Company Liquidity

Understanding BCAR For Property/Casualty Insurers

Understanding BCAR for Life/Health Insurers

Risk Management and the Rating Process for Insurance Companies

Equity Credit for Hybrid Securities

Measuring Transfer and Convertibility Risk

Rating Members of Insurance Groups

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In addition to leverage, A.M. Best considers the quality of the capital structure and the permanency of capital. As part of its quality-of-capital analysis, A.M. Best reviews the terms and conditions of securities issued, the maturity schedule of the capital structure, and the level of goodwill, value in force, deferred acquisition costs and other intangible assets relative to reported equity and total capitalization. The level of intangible assets is of particular importance when such items constitute a significant portion of an organization's capital base, thereby distorting financial leverage ratios relative to its peers.

Coverage Ratios

In evaluating an IHC's ability to service its financial obligations, A.M. Best considers several coverage ratios, including interest and fixed-charge coverage. In evaluating coverage levels, A.M. Best factors the current and expected interest rate environment into consideration of the strength of coverage.

Exhibit 1
Typical Holding Company Financial Leverage & Interest Coverage Guidelines

ICR Category	Debt/Capital*	Interest Coverage**
aaa	<15%	>10x
aa	<25	>7x
a	<35	>5x
bbb	<45	>3x
bb	<65	>2x
b	>65%	<2x

* Long-term + Short-term Debt (adjusted for hybrid securities)/ [(Total Shareholder's Equity + Minority Interest and Other + Preferred Stock (Non Equity) + Long-term Debt + Short-term Debt) net of AOCI]
** Pretax Operating Income + Interest Expense/Interest Expense + Preferred Dividends
A.M. Best's economic view of capital in any given organization can differ significantly from reported capitalization.

The ability to service financial obligations over time is a function of the organization's current capitalization and ability to generate earnings from operations. Unencumbered cash, cash equivalents and short-term investments held at the IHC also may support the parent company's debt service and other short-term obligations. Management's track record of share repurchases and shareholder dividends is considered as part of the assessment of the IHC's prospective creditworthinenss and expected coverage ratios.

Operating Leverage

To supplement its assessment of financial leverage, A.M. Best also reviews a company's operating leverage. A.M. Best broadly defines operating leverage as debt (or debt-like instruments) used to fund a specific pool of matched assets. Cash flows from the pool of assets are expected to be sufficient to fund the interest and principal payments associated with the obligations, substantially reducing the potential call on an insurer's earnings and cash flow. Generally, debt obligations viewed by A.M. Best as eligible for operating leverage treatment would be excluded from the calculation of financial leverage, unless one of the tolerance levels is exceeded. (See *A.M. Best's Perspective on Operating Leverage*.)

Liquidity

An IHC's liquidity depends upon the degree to which it can satisfy its financial obligations through operating cash flow or by holding cash and investments that are sound, diversified and liquid. The source of cash flow available to an IHC with few operations relies primarily on the dividend-paying capacity of its subsidiaries. Dividend capacity, in turn, depends in part on the organizational structure, recognizing that a generally flat structure is preferable to a stacked structure. The presence of profitable, nonregulated subsidiaries is viewed positively, as there are no limitations on the amount of dividends that may be sent upstream. Additional sources of cash, including bank credit facilities, also can enhance a holding company's liquidity. A high degree of liquidity enables an insurer to meet unexpected needs for cash without the untimely sale of investments or fixed assets, which may result in substantial realized losses due to temporary market conditions and/or tax consequences. For more information on A.M. Best's liquidity analysis, see *Analyzing Insurance Holding Company Liquidity*.

Asset Allocation/Investment Risk
The quality and diversification of assets contribute to a company's financial stability. Invested assets (principally bonds, common stocks, mortgages and real estate) are evaluated to assess the risk of default and the potential impact on capital and surplus if the decline in market value of these assets occurred unexpectedly. The higher the liquidity, diversification and/or quality of the asset portfolio, the less uncertainty there is in the value to be realized upon an asset sale and the lesser the likelihood of default. Therefore, a company's investment guidelines are reviewed to identify a lack of diversification among industries or geographic regions, with particular attention paid to large, single investments that exceed 10% of a company's total capital. Companies that hold illiquid, undiversified and/or speculative assets, and that have significant underwriting exposure to volatile lines of business that are vulnerable to unfavorable changes in underwriting and/or economic conditions, can jeopardize capital and surplus.

Off-Balance-Sheet Risk
If an IHC is exposed to off-balance-sheet items, including balances associated with non-controlled assets, guarantees for affiliates, contingent liabilities, unfunded pension plan obligations, long-term lease obligations and interest-rate swaps, the off-balance-sheet items are analyzed to determine the potential effect on the group's financial flexibility, liquidity, surplus or loss exposure.

Capital Adequacy
As part of its analysis of the organization's financial strength as a whole, A.M. Best may use a consolidated Best's Capital Adequacy Ratio (BCAR) to evaluate the risk-adjusted capitalization using the consolidated financial statements of the IHC or the operating insurance parent company if no IHC exists. For more information, see *Understanding Universal BCAR*, *Understanding BCAR for Property/Casualty Insurers* and *Understanding BCAR for Life/Health Insurers*.

A consolidated BCAR is calculated based on the ratio of the organization's available capital relative to net required capital.

$$\text{Consolidated BCAR} = \frac{\text{Available Capital}}{\text{Net Required Capital}}$$

Available capital represents the capital available to the entire organization to absorb adverse deviations in its investment, credit, underwriting and off-balance-sheet risks.

A.M. Best's capital formula uses a risk-based capital approach whereby net required capital is calculated to support three broad risk categories: investment risk, credit risk and underwriting risk. A.M. Best's capital adequacy formula also contains an adjustment for covariance, reflecting the assumed statistical independence of the individual components. A company's available capital is divided by its net required capital, after the covariance adjustment, to determine its BCAR.

A.M. Best makes a number of adjustments to a company's reported capital within its capital model to provide a more economic and comparable basis for evaluating capital adequacy. After gaining an understanding of the inherent risk relating to off-balance-sheet items, the analyst will make qualitative assessments of off-balance-sheet liabilities that might encumber a company's growth or preservation of surplus and may modify the capital charge in a consolidated BCAR to reflect the appropriate level of risk.

Different accounting frameworks and regulatory requirements across the world require numerous adjustments to a company's reported capital. Goodwill and other intangible assets are adjusted. Pre-event catastrophe reserves are removed from the loss reserves and moved into available capital on a tax-effected basis. Adjustments for any embedded value in unearned premium reserves, loss reserves and fixed-income securities are made if the company has not already reflected these in its reported capital. Further adjustments are made to capital to reflect other non-balance-sheet risks, including catastrophe exposures and debt-service requirements.

Exhibit 2
Available Capital Components

Reported Capital

Equity Adjustments:
- Unearned Premiums
- Assets
- Loss Reserves
- Reinsurance

Debt Adjustments:
- Debt/Hybrid Securities
- Debt-Service Requirements

Other Adjustments:
- Potential Catastrophe Losses (net of reinsurance)
- Future Operating Losses
- Future Dividends
- Contingent Capital
- Contingent Reserves
- Value in Force (life business)
- Deferred Acquisition Costs
- Goodwill
- Other Intangible Assets

The BCAR model produces an absolute score, which is the ratio of the company's adjusted capital to its own net required capital. This company-specific capital ratio indicates whether its capital strength aligns with A.M. Best's "Secure" or "Vulnerable" rating categories and is based on the specific risk profile of a company's operations.

Enterprise Risk Management

A.M. Best believes that enterprise risk management (ERM) – establishing a risk-aware culture, using sophisticated tools to consistently identify, manage and measure risk and risk correlations – is an increasingly important component of an insurer's risk management framework. This includes the improvement of and ongoing effort to refine an ERM framework, including the development of internal economic capital modeling at the consolidated or group level. When analyzing an IHC, A.M. Best will assess an organization's risk management practices relative to the risk profile of the company based on volatility of earnings and capital over time. (See *Risk Management and the Rating Process for Insurance Companies*.)

Non-Rated Affiliates

Another important part of A.M. Best's top-down rating approach is the review and analysis of non-rated affiliates. This typically will be incorporated into the assessment of the ultimate parent's activities through the analysis of information – such as the organizational chart and consolidated financials – with company management. A.M. Best reviews the group for the potential benefit or drag any affiliate can represent. To gain comfort with a group's non-insurance affiliates, A.M. Best's analysts hold discussions with management to determine these entities' strategic fit. Additionally, A.M. Best's analysts use public information, third-party analytical studies and industry reports, as well as their own analysis of management-provided information, to assess a non-insurance affiliate's financial condition.

Double Leverage

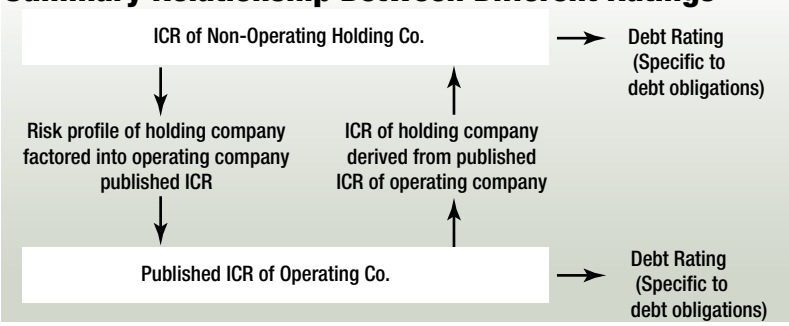
Another measure used to assess capitalization is double leverage, or the ratio of a holding company's investments in subsidiaries to its adjusted equity. Double leverage is used to determine the extent to which debt issued at the holding company is contributed as equity to one or more operating companies. High double leverage not offset by mitigating factors can lead to an unfavorable view of an organization's capital structure and/or the quality of capital at the operating company.

Rating the IHC

The rating of the IHC is determined by reference to the ICR of the operating insurer and reflects analysis of both the credit risk implications of the IHC being a separate legal entity from the operating insurer, and the normal subordination of IHC creditors to operating company policyholders (see **Exhibit 3**).

Exhibit 3

Summary Relationship Between Different Ratings



Since an IHC typically does not generate significant earnings independent from subsidiary operations, its legal separation from the operating company represents an added degree of risk, especially in terms of the actual or potential control a regulator may apply to the movement of funds from an operating insurer to an IHC. Moreover, the policyholders of the operating insurer usually have seniority over creditors of the IHC.

Due in part to the greater degree of risk taken by senior unsecured creditors of the IHC relative to that of the operating company, the IHC normally is assigned a lower ICR than the operating company (see **Exhibit 4**). Maximum dividend levels or other constraints on the movement of funds from the operating company to the IHC also are reflected in the notching between operating and IHC ICRs.

Exhibit 4

ICR to ICR Typical Notching

Operating Co.	Holding Co.
aaa	0-2
aa+	2-3
aa/aa-	3
a+/a/a-	3
bbb+/bbb	3
bbb-	3-4
bb+/bb	4
bb-	4-5

For highly rated operating insurers, IHC ICRs usually are two or three notches lower. Farther down the rating scale, this may extend to four or five notches. Conversely, for the very strongest organizations, with diversified operations, this notching could be reduced to zero (i.e., if after taking into account the risks highlighted above, the credit profile of the IHC still was consistent with a rating of "aaa").

For more complex organizations, with multiple insurance or non-insurance operations owned by an IHC, the same analytical logic is applied. Additional judgment is used as to which operating subsidiaries the IHC primarily depends upon to meet its obligations and, hence, which operating company ICRs are most relevant to the notching process (see **Exhibit 5**).

An IHC may provide rating enhancement to an operating company (see *Rating Members of Insurance Groups*). If an IHC maintains significant liquid assets, these will be factored into the operating company's published ICR, if it is considered these funds would be available to meet its ongoing insurance obligations. If these funds are not considered available to meet policy and contract obligations but appear to be a sustainable feature of the IHC's balance sheet, the liquidity at the IHC may be factored into the degree of notching between the IHC and the operating company ICR.

Similarly, if an IHC maintains weak leverage or coverage measures relative to the operating company's ICR, then this will be factored into the operating company's published ICR. In both cases, the ICR of the IHC is notched from the published ICR of the operating company.

Debt & Preferred Stock Ratings

If an insurance organization issues public debt, A.M. Best may assign a rating specific to its view of the credit quality of the debt issue. The debt rating is established by reference to

Exhibit 5
Summary of Relationship Between Different Ratings for Complex Organizations

a) The ICR of the holding company is derived from the published ICRs of the operating companies via A.M. Best's analysis of the degree of impact each operating company has on the holding company's creditworthiness and any benefits it gains from diversified sources of funds from operations.

b) The published ICRs of the operating companies reflect A.M. Best's analysis of the extent to which each is supporting debt, or other obligations, of the holding company or of affiliated companies.

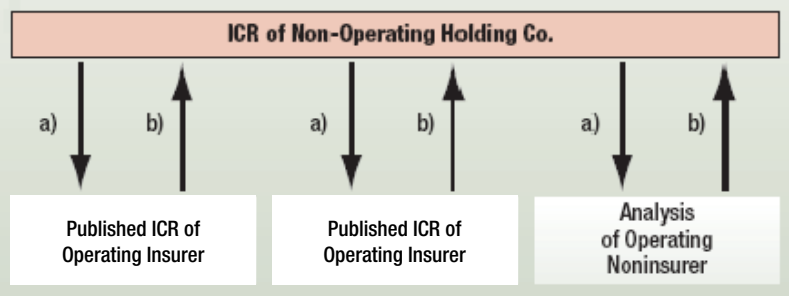


Exhibit 6
Notching

Security Type	Notches From Non-Operating Holding Company
Senior Debt	0
Subordinated Debt	-1
Junior Subordinated Debt, Trust Preferred, Capital Trust Securities, Preferred Securities/Stock	-2

the ICR of the issuing entity, whether it is an operating holding company or an IHC.

Ratings of debt issued by an IHC are notched from the IHC ICR. A.M. Best views the subordination of the security in the capital structure of the IHC as the primary factor for notching. The rationale is that in the event the IHC becomes bankrupt, senior obligations theoretically must be repaid before subordinated creditors receive any payment. The contractual subordination in the capital structure is emphasized rather than the name of the security. Securities described in the indenture agreement as being senior to all other unsecured obligations receive 0 notches from the ICR of the IHC. Securities contractually subordinated only to senior debt receive 1 notch. Securities contractually subordinated to senior debt and subordinated debt receive 2 notches. Additionally, aggressive loss-absorption features can influence notching. Features such as contingent write-downs or conversions to equity can result in wider notching if in a stressed scenario the debt would convert to a more subordinated type of security. On the other hand, features that do not affect subordination (e.g. interest deferral) do not have an effect on notching. If a company with an existing issue of subordinated debt issues additional subordinated debt ranked senior to the existing issue, then the rating of the prior issue may be downgraded. This approach is consistent with a rating assignment based primarily on structural subordination.

Generally, only three levels of notching (0, 1, or 2) are assigned to securities in an IHC, irrespective of the number of securities in the capital structure. A.M. Best's view is that in a bankruptcy scenario for an IHC, the recovery differences among securities with 2 or more notches are not likely to be significant. As such, it is possible for instruments with different subordination to have the same level of notching (see **Exhibit 6**).

Although preferred and trust-preferred securities are viewed as having creditworthiness less than that of junior subordinated debt, each security is generally rated two notches below the IHC's ICR. In cases where a trust or special-purpose entity issues securities backed by a different class of securities, the securities issued by the trust are notched one below the securities issued by the insurance entity to fund the obligation, subject to the cap on notching. For example, if A.M. Best rates trust-preferred issues that are backed by subordinated debt, the instrument is rated at the same level as the trust-preferred securities, given that the trust-preferred securities are further

removed from the cash flows of the operating company. Modifications to this can occur, depending on the details of the issue. If debt subordinated to senior debt were to be issued, and no senior debt exists, then the debt would be notched 1 from the holding company, effectively allowing a placeholder in the event senior debt were issued.

Exhibit 7

Typical Notching from Operating Company ICR to Operating Company Debt Instrument

Issuer Credit Rating	Senior Unsecured Debt	Subordinated Debt	Preferred Stock*
aaa/aa/a	1	2	3
bbb+/bbb	1	2	3
bbb-	2	3	4
bb+ or below	3 or more	4 or more	5 or more

* This also applies to junior subordinated debt, trust preferred and capital trust securities.

Ratings of debt issued by operating companies are notched from the published ICR of the operating company. For debt issued by operating companies, the degree of contractual subordination of the rated issue to the most senior creditors (usually policyholders) is reflected in the rating level. For higher rated insurers, senior unsecured debt most frequently would be one rating notch below the ICR (reflecting debt-holder subordination to policyholders), subordinated debt two notches, and so forth. However, for issuers at the lower rating levels, notching between policyholder and senior debt-holder obligations may be expanded as the ICR moves farther down the rating scale. The increase in notching at the lower ICR levels reflects the generally increased probability for regulatory intervention (see **Exhibit 7**).

In certain jurisdictions, the seniority of policyholders and senior debt holders are pari passu. In that scenario, senior debt would receive 0 notches instead of 1, subordinated debt would receive 1 notch instead of 2, and preferred stock would receive 2 notches instead of 3.

Equity Credit for Hybrids

The issuance of nontraditional debt securities by either an IHC or an insurance operating company may receive favorable treatment of hybrid securities relative to traditional debt instruments due to the existence of equity-like features or characteristics. A.M. Best's assessment of these securities, and the resulting impact on financial leverage and coverage ratios, focuses on the use of the instruments within an entity's capital structure and the impact on financial ratios and financial flexibility.

In ranking equity-credit-afforded securities along the continuum, A.M. Best places straight debt and securities with a cash put option at one end and common stock at the other end. All other securities fall between, based on loss-absorption characteristics and cash-flow flexibility. In general, the longer the maturity, the longer interest/dividend payments may be deferred, and the deeper the subordination, the higher the equity credit given to a hybrid security. However, these instruments can be extremely complex and require extensive rating analysis. As such, determination of equity credit for hybrid securities will be made on a case-by-case basis. Generally, A.M. Best grants equity credit, comprising up to 20% of a company's total capital, for hybrid securities that exhibit the characteristics of common equity. The amount of credit given to hybrid securities is based on A.M. Best's belief that the insurance industry, as well as the broader financial services sector, is very sensitive to changes in the market's perception of an issuer's financial health (see *Equity Credit for Hybrid Securities*).

Transfer & Convertibility Ceilings

IHC ratings are subject to transfer and convertibility (T&C) ceilings. A.M. Best defines transfer and convertibility risk as the risk that capital and exchange controls may be imposed by government authorities that would prevent or materially impede the private sector's ability to convert local currency into foreign currency and/or transfer funds to nonresident creditors. A.M. Best employs a two-step process to calculate the

T&C ceiling. The process starts with a sovereign rating and then estimates the likelihood of a government implementing currency restrictions given default. Thus T&C ceilings are always equal to or higher than a country's sovereign rating (see *Measuring Transfer and Convertibility Risk*).

Factoring In Government Support

Government support, either through explicit forms (e.g., written guarantee) or via implicit (noncontractual) support, can increase the published ICR of the IHC. Explicit financial support demonstrates the government's commitment to an organization. Such support comes in the form of a capital contribution or a contractual arrangement that exhibits the commitment. The level of benefit afforded to an IHC's rating depends on the type of explicit financial support provided. Guarantees that offer full protection can provide rating enhancement.

An IHC also may receive rating enhancement based primarily on the level of implicit support expected from the government. However, the amount of explicit support already provided to the IHC also influences the level of implicit support A.M. Best anticipates and the level of benefit in a rating. These judgments are subjective and are decided by a rating committee following a formal rating analysis, which includes the evaluation of information gathered through detailed discussions with government officials/management to gain a complete understanding of the government's relationship to the organization.

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Evaluating Country Risk

A.M. Best defines country risk as the risk that country-specific factors could adversely affect an insurer's ability to meet its financial obligations. Country risk is evaluated and factored into all A.M. Best ratings. As part of evaluating country risk, A.M. Best identifies the various factors within a country that may directly or indirectly affect an insurance company. In doing so, A.M. Best separates the risks into three main categories: economic risk, political risk and financial system risk. Given A.M. Best's particular focus on the insurance industry, financial system risk is further divided into two sections: insurance risk and non-insurance financial system risk.

A.M. Best's evaluation of country risk is not directly comparable to a sovereign debt rating, which evaluates the ability and willingness of a government to service its debt obligations. Though country risk analysis does consider the finances and policies of a sovereign government, the final determination is not guided by this sole purpose. Additionally, A.M. Best's country risk evaluation does not impose a ceiling on ratings in a given domicile.

A.M. Best's approach to country risk analysis employs a data-driven model that scores the level of risk present in a given country, plus a qualitative determination of country-specific conditions that affect the operating environment for an insurer. Countries are placed into one of five tiers, ranging from "CRT-1" (Country Risk Tier 1), denoting a stable environment with the least amount of risk, to "CRT-5" (Country Risk Tier 5) for countries that pose the most risk and, therefore, the greatest challenge to an insurer's financial stability, strength and performance. The conceptual relationship between the relative level of country risk and the rating of an insurer is depicted in **Exhibit 1** below.

In short, as country risk increases (measured by a higher assigned tier), the distribution of ratings migrates down the rating scale. This same relationship effectively applies to any significant category of risk an insurer faces, i.e. higher risk exposure pressures financial stability.

Exhibit 1
Relationship Between Ratings and CRTs

Above Average Rating
Average Rating
Below Average Rating

CRT-1	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-2	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-3	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-4	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
CRT-5	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-

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Key elements of country risk can be managed or mitigated, effectively reducing the impact on an insurer's rating. As a result, it is possible for an insurer in any country to achieve A.M. Best's highest Financial Strength Rating (FSR). Country risk is not a ceiling or cap on insurer ratings; it is one of many rating factors.

Country Risk Tier (CRT) assignments are reviewed annually, though significant events and developments are tracked continuously and may cause an interim change to a country's tier assignment. CRTs are evaluations of the current conditions in a country, but they are designed to remain stable through the business cycle. Therefore, political and industry outlooks as well as economic forecasts are integrated into the analysis.

Elements of Country Risk

The three risk categories in A.M. Best's country risk analysis – economic risk, political risk and financial system risk – will be defined below, and some of the key variables used will be discussed (see **Exhibit 2**).

Economic risk is the likelihood that fundamental weaknesses in a country's economy will cause adverse developments for an insurer. A.M. Best's determination of economic risk evaluates the state of the domestic economy, government finances and international transactions, as well as prospects for growth and stability.

Political risk is the likelihood that governmental or bureaucratic inefficiencies, societal tensions, an inadequate legal system or international tensions will cause adverse developments for an insurer. Political risk comprises the stability of a government and society; the effectiveness of international diplomatic relationships; the reliability and integrity of the legal system and business infrastructure; the efficiency of the government bureaucracy; and the appropriateness and effectiveness of the government's economic policies.

Financial system risk (non-insurance) is the risk that financial volatility may erupt due to inadequate reporting standards, weak banking systems or asset markets or poor regulatory structure. Non-insurance financial system risk considers a country's banking system, accounting standards and government finances, and it assesses how vulnerable the financial system is to external or internal volatility. Basel II, World Bank Insolvency Principles and International Accounting Standards all are referenced in the analysis, as are the performances of banks, equity indices and fixed-income securities.

Insurance risk is the risk that the insurance industry's levels of development and public awareness; transparency and effectiveness of regulation; reporting standards; and regulatory sophistication will contribute to a volatile financial system and compromise an insurer's ability to pay claims. Insurance risk, which A.M. Best considers as a distinct subsection of financial system risk, is addressed separately because of the importance of and A.M. Best's specific focus on the industry. The determination is based heavily on the Insurance Core Principles (ICP) of the International Association of Insurance Supervisors (IAIS). A.M. Best employs a sizable subset of the 28 ICPs by organizing them into three categories: 1) government commitment to an open and well-regulated insurance industry; 2) adequacy of supervisory authority and its supporting infrastructure; and 3) insurer accountability.

Calculating Country Risk

The country risk determination begins with the running of the Country Risk Model to generate a "score." The score is a weighted average of the three risk categories. The score then is squared, representing the nonlinear relationship between the score and the actual country risk present in the country. The main equation for calculating the Country Risk Score is as follows:

$$\text{CR Score} = [\omega_E I_E + \omega_P I_P + \omega_{FS}(I_{FSi} + I_{FSni})]^2$$

Where I_E = Economic Risk
I_P = Political Risk
I_{FSi} = Financial System Risk (insurance component)
I_{FSni} = Financial System Risk (non-insurance component)
ω = weight applied to each category of risk

In special circumstances, such as where a given domicile has a particularly strong relationship with another – such as Guernsey with the United Kingdom – an additional cal-

culation is added that integrates the larger domicile's influence on the stability of the smaller.

The country risk score provides a baseline of evaluation for each country. A country with a higher country risk score indicates a more risky environment as compared with a country that has a lower country risk score. After the model is run, the Country Risk Group evaluates additional qualitative factors that would influence the overall score, or one particular category of risk.

Country Risk Tiers

The assignment of CRTs to score ranges is based on A.M. Best's assertion that the risk in countries can be categorized loosely to provide a basis of comparison, provided that country-by-country differences are acknowledged. Therefore, CRTs can be classified, in a typical scenario, by the following:

CRT-1: Predictable and transparent political environment, legal system and business infrastructure; sophisticated financial system regulation with deep capital markets; mature insurance industry framework.

CRT-2: Predictable and transparent political environment, legal system and business infrastructure; sufficient financial system regulation; mature insurance industry framework.

CRT-3: Developing political environment, legal system and business infrastructure with developing capital markets; developing insurance regulatory structure.

CRT-4: Relatively unpredictable and non-transparent political, legal and business environment with underdeveloped capital markets; partially to fully inadequate regulatory structure.

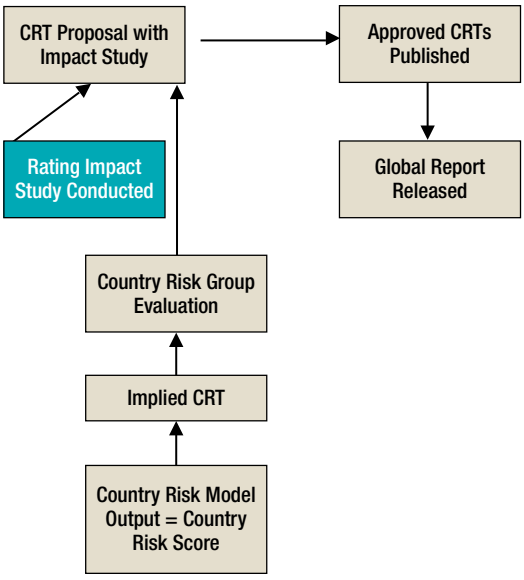
CRT-5: Unpredictable and opaque political, legal and business environment with limited or nonexistent capital markets; low human development and social instability; nascent insurance industry.

Countries with characteristics of a stable insurance industry environment are highly correlated with those countries that are economically large, stable, diverse and efficiently regulated, with stable political regimes supported by a strong and credible legal system.

Exhibit 2
Components of Country Risk Analysis

Economic Risk	Macroeconomy
	Prospects
	International Transactions
	Government Finance
Political Risk	Economic Policy
	Business Environment
	Government Stability
	Social Stability
	International Diplomacy
	Legal System
Financial System Risk	**Non-Insurance Financial System Risk:**
	Banking System
	Vulnerability
	Reporting Standards & Regulations
	Sovereign Debt
	Insurance Financial System Risk:
	Government & Legislation
	Supervisory authority
	Insurer Accountability

Exhibit 3
Country Risk Evaluation Process



Annual and Event-Driven Reviews

Each country that is assigned a Country Risk Tier is reviewed annually. This review includes the model-driven score, the qualitative analysis, a rating impact study and the committee process each year. During the interim period, the Country Risk Group continually monitors world events and developments and assesses their potential impact on tier assignments. This process is facilitated through the maintenance of a watch list that identifies countries that are experiencing a significantly increased level of volatility that has the potential to impact the CRT.

It is unusual for a country to be moved up or down the scale outside of the annual review cycle, as the CRTs are designed to remain stable through the business cycle and are not subject to frequent upgrades or downgrades. Therefore, while recent developments are factored into the analysis of country risk, they often are not significant enough to warrant an off-cycle change in the tier assignment. In the event of a change in CRT, the ratings of the companies domiciled in that country will be subject to review.

Exhibit 4
Incorporating Country Risk

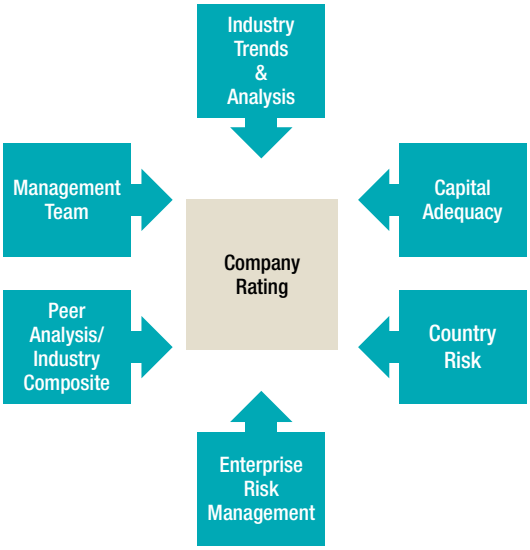


Exhibit 5
Rating Translation
Financial Strength Ratings (FSR) and Issuer Credit Ratings (ICR)

	FSR	ICR	
Secure	A++	aaa aa+	Investment Grade
	A+	aa aa-	
	A	a+ a	
	A-	a-	
	B++	bbb+ bbb	
	B+	bbb-	

	FSR	ICR	
Vulnerable	B	bb+ bb	Non-Investment Grade
	B-	bb-	
	C++	b+ b	
	C+	b-	
	C	ccc+ ccc	
	C-	ccc- cc	

Applying Country Risk to Ratings

A.M. Best's ratings are independent opinions based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile. Country risk is one of many factors considered in evaluating a company according to these three characteristics. The level of consideration given to country risk (i.e. the potential impact on the determination of a rating for a company) is determined on a case-by-case basis for each insurer, based on its financial strength, position in the market and ability to mitigate or manage its exposure to country risk.

A.M. Best's Country Risk analysis seeks to identify those aspects of a country that may create a difficult or unpredictable environment for an insurer. For example, a poorly regulated banking system, poorly executed monetary policy or illiquid equity market could leave a financial system more prone to collapse. On average, most companies in CRT-1 or CRT-2 countries would not be impacted adversely by their operating environments (i.e. country risk). In CRT-3, CRT-4 and CRT-5, there is an increasing probability that environmental factors will affect a company's ability to fulfill policyholder obligations.

A.M. Best employs neither a notching process nor a ceiling in applying country risk to ratings. Country risk is one of many factors that are integrated into a Best's Rating. The integration of country risk into a rating outcome is comparable to the integration of other components of the rating analysis such as enterprise risk management (ERM); senior management discipline and track record; capital management; and competitive market position, among others (see **Exhibit 4**). Analysts are able to ascertain during the rating process whether an insurer is subject to country risk issues. To aid analysts in this process, the Country Risk Group offers internal briefings and mapping guides that serve as benchmarks when comparing insurers across countries and regions.

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A.M. Best's Perspective On Operating Leverage

In forming an overall opinion of a company's balance sheet strength – the most important area in determining a company's ability to meet its current and ongoing obligations to policyholders – A.M. Best Co. reviews the organization's total leverage, which includes financial leverage and operating leverage. Financial leverage, through debt or debt-like instruments, may place a call on an insurer's earnings and strain its cash flow. Also, excessive leverage at the operating or holding company can lead to financial instability.

Operating leverage is broadly defined as leverage utilized in normal business operations (insurance or non-insurance) to support liquidity or to provide additional sources of operating income with tight duration or cash-flow matching characteristics. These activities may be program specific (i.e., spread lending) or support non-economic reserves with low levels of liquidity risk, credit risk and duration mismatch risk. Regardless of its form, leverage may impact an insurer's liquidity, cash flow and operating profile and could lead to financial instability, particularly during times of systemic capital market distress.

Generally, the debt portion of an insurer's capital structure is utilized as working capital for its insurance lines. For organizations with debt-issuing holding companies, dividends from the insurance subsidiaries typically represent a major source of debt service. Diversified enterprises that possess significant non-insurance operations, such as consumer finance, asset management, equipment leasing and mortgage banking, may require additional funding. If the financing of other operations is to be serviced solely by the non-insurance businesses and meets the eligibility requirements outlined on the following pages, A.M. Best likely would consider the debt as operating leverage rather than financial leverage. These businesses usually are not guaranteed by the lead insurance company, and the debt typically is match-funded with corresponding assets such as credit card receivables or mortgages. However, for organizations with highly leveraged non-insurance operations, A.M. Best will consider extraordinary (i.e., wider) notching of debt securities issued by holding companies as well as the potential impact on the insurance company's ratings.

For organizations that issue debt or debt-like instruments directly from an operating insurance company, amounts eligible for operating leverage treatment generally would involve cases where residual risk to the insurer is insignificant. Because financial instruments may be issued either by holding companies or by operating companies (or by both), A.M. Best will apply specific tolerances at each operating company, as well as on a consolidated basis. If the tolerance is exceeded at an individual operating company or in aggregate, A.M. Best would monitor closely the issuer's appetite for additional forms of leverage (for example, retail notes and/or institutional spread-based [ISB] products) and would contemplate lowering the entity's rating if growth trends vary substantially from previous expectations.

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(Please see **Step 1** on page 5 for operating company examples.) Ultimately, debt obligations viewed by A.M. Best as operating leverage would be excluded fully from the calculation of consolidated financial leverage, unless the tolerance level is exceeded. (Please refer to **Step 2** for a consolidated view.)

Eligibility for Operating Leverage Credit

A.M. Best broadly defines operating leverage as debt (or debt-like instruments) used to fund a specific pool of matched assets, finance non-insurance operations or fund non-economic reserves. Cash flows from the pool of assets should be sufficient to fund the interest and principal payments associated with the obligations. Additionally, the insurer must possess sound asset/liability and investment risk management capabilities, adhere to low-duration mismatch tolerances, and maintain negligible repayment and liquidity risk related to these obligations. Some examples of activities that typically would be viewed as operating leverage include:

- Securities lending programs
- Repurchase and reverse repurchase agreements (repos)
- Federal Home Loan Bank (FHLB) borrowings
- Guaranteed investment contracts (GICs) and funding agreements
- Funding agreement-backed securities programs (FABS)
- Retail note programs
- Premium financing operations utilized by property/casualty insurers
- Letters of credit (LOCs), debt or parental guarantees related to Regulation XXX or Guideline AXXX (XXX or AXXX) securitizations
- Term Asset-Backed Loan Facilities (TALF) or similar future government programs that introduce leverage to an insurer's balance sheet
- Other off-balance-sheet liabilities

Given that capital market financing solutions will continue to evolve, this listing is not meant to be exhaustive, and A.M. Best reserves the right to interpret new forms of capital market financing as operating or financial leverage based on its assessment of their underlying, fundamental characteristics.

With respect to closed-block monetizations, A.M. Best would tend not to view the debt associated with these transactions as operating leverage, particularly if the debt is with recourse. A.M. Best recognizes the stable, long-term nature of closed-block liabilities and the steady earnings generated by the assets supporting the business, along with the flexibility to reduce future dividends to meet closed-block liabilities. The impact on an organization's business profile of eliminating the closed block's future earnings and deploying the debt proceeds in higher risk, higher return businesses will be incorporated in the overall financial strength evaluation. However, A.M. Best's tolerance for financial leverage for that company likely would increase, depending on the characteristics of the in-force block.

Generally, securities lending programs maintain liquid, high-quality investments with tightly matched asset/liability durations and are governed by formal investment guidelines that have established limits for interest rate, reinvestment and counterparty risks. The recent financial crisis highlighted potential areas of credit risk associated with insurers' investment of cash collateral received from securities lending transactions that subsequently deteriorated in value, resulting in additional credit risk from a presumed "low-risk" activity. Given that the industry has reduced the scope and complexity of these programs while enhancing risk management governance practices, A.M. Best will continue to permit operating leverage treatment. However, should an insurer demonstrate over-reliance on securities lending or have a track record of incurring collateral-related losses, A.M. Best may disallow full operating leverage credit.

FHLB programs provide financial flexibility for insurance company members and are an attractive source of capital because of the low rates offered on advances. For compa-

nies that invest the loan proceeds in their core businesses for working capital, these obligations would be viewed as financial leverage. However, more recently, insurers have utilized these borrowings to enhance investment yields and as a potential liquidity source. If FHLB borrowings are being utilized for spread enhancement activities (i.e., similar to securities lending in purpose) and the insurer can demonstrate strong asset/liability and liquidity management expertise, A.M. Best would view these activities as qualifying for operating leverage treatment. The rationale for this is that these borrowings are similar to other ISB products such as GICs (general account, separate account and synthetic), funding agreements, FABS and retail notes. However, if FHLB programs are being used as a liquidity or capital backstop, A.M. Best would view such borrowings as financial leverage, particularly longer term FHLB borrowings that are not being match-funded.

Another type of debt obligation that A.M. Best has treated as operating leverage is one that is a component of a securitization (e.g., debt issued to fund XXX and AXXX [non-economic] reserve redundancies). In these structures, the assets are segregated and placed in a Regulation 114 trust for the benefit of the policyholders. The cash flows generated are projected to be more than sufficient to fund the debt payments, i.e., the securitization structure typically contains some overcollateralization. Also, these structures regularly involve the issuance of debt that is nonrecourse to the direct writer through a special-purpose vehicle. Moreover, in recent years companies have increasingly utilized senior unsecured debt issuances to self-fund XXX and AXXX reserves. In this case, only debt issued by the holding company will be afforded 100% operating leverage credit. However, if there is some recourse to the issuer (i.e., a holding company issues unsecured debt but it contains a feature requiring the posting of additional collateral if the issuer's credit default swap [CDS] spreads widen), these types of issues will not be afforded full operating leverage credit.

In recent years, XXX and AXXX funding solutions have been utilizing LOCs to fund these reserves. These LOCs have rollover risk, which may increase an insurer's cost or may no longer be available during times of severe dislocations in the capital markets. A.M. Best will only consider full operating leverage treatment for LOCs that have a remaining maturity of five years or longer. If LOCs have near-term rollover risk (i.e., less than five years), they will be considered financial leverage. More recently, some regulators are permitting the utilization of holding company guarantees to XXX and AXXX captives in lieu of external financing. In these instances, A.M. Best will qualitatively incorporate these holding company guarantees as part of its operating leverage tolerance.

The Term Asset-Backed Securities Loan Facility (TALF) program was implemented during the financial crisis and is currently in runoff. The TALF program was nonrecourse to the borrower, with funds provided by the Federal Reserve to purchase asset-backed securities. These collateralized securities could be delivered back to the Federal Reserve's special-purpose vehicle in full defeasance of the loan; therefore, credit risk was not material absent a modest amount of capital initially contributed by the insurer. Given these characteristics, A.M. Best would tend to view these facilities, or future government-sponsored facilities with similar terms, as operating leverage.

Other Considerations

A.M. Best will employ a "look-through approach" for off-balance-sheet liabilities as disclosed in the financial statement footnotes in its calculation of operating leverage tolerance. Specific examples could include the speculative selling of naked CDS on corporate debt obligations by a holding company. Although these transactions are not widely utilized by insurers, these types of speculative transactions will be reviewed and considered on a qualitative basis. The purpose of this review is to look only at speculative-type CDS transactions and exclude bonafide CDS transactions utilized for investment management or enterprise risk management purposes. These types of transactions could also include the purchase of credit default swaps on fixed-income investments to mitigate credit risk or the sale of a CDS as part of an insurer's replicated investment strategy (i.e., to obtain credit exposure to an issuer not available in the cash market).

Another type of off-balance-sheet liability can arise from variable interest entities (VIEs),

which are utilized for investment and asset management purposes. VIEs may or may not be consolidated on an insurer's balance sheet, depending upon whether or not the VIE is seen as a passive-type investment activity (i.e., nonconsolidated) or where the company is deemed a primary beneficiary of the VIE (i.e., consolidated). Similar to speculative CDS, VIEs on an insurer's balance sheet will be reviewed qualitatively in an assessment of an insurer's operating leverage. If the VIE is consolidated and reflected as debt on the insurer's balance sheet, it will be removed from the financial leverage calculation, assuming that the debt is nonrecourse to the insurer and risk of loss is limited to the insurer's investment in the VIE.

Accordingly, A.M. Best typically would view financings resulting from the aforementioned activities as operating leverage if the insurer possesses strong asset/liability, liquidity and investment management skills, and if duration mismatch is kept to a minimum. In addition, nonrecourse debt would be viewed more favorably when calculating a company's financial leverage. For financings to receive operating leverage treatment in the financial leverage ratio calculation, A.M. Best must be able to (1) analyze the assets supporting these debt issuances, (2) understand management controls and the structure of the funding mechanism and (3) review specific provisions related to debt covenants. Moreover, A.M. Best will consider the potential volatility of the assets supporting the debt fundings, as well as prospective operating leverage at all rated insurance subsidiaries.

Operating Leverage Limits

A.M. Best views operating leverage-related activities as reasonable for highly rated companies with diverse lines of business, considerable expertise in asset/liability and investment management, and sufficient financial flexibility. However, the greater an insurer's exposure to these liabilities, the greater the potential stress on its liquidity profile, particularly in certain situations such as a rating downgrade or a contract containing negative covenants or adverse put options. Given the sizable amount of deleveraging that has taken place since the financial crisis, A.M. Best expects consolidated and operating company leverage to be maintained at reasonable levels that reflect current capital market conditions. With respect to insurance operating company leverage, A.M. Best is most comfortable when operating leverage activities such as institutional investment products and spread lending do not constitute a large proportion of general-account liabilities.

A.M. Best has developed specific guidelines for each rated statutory insurance operating company of a group and all statutory insurance operating companies combined (statutory view; see **Step 1**). In short, A.M. Best would be uncomfortable with a statutory entity or group if the sum of ISB product liabilities, retail notes outstanding, liability for securities lending and FHLB loans exceeds 50% of general account "reserves" (defined here as lines 1 through 6.3 of the Life/Health Annual Statement). As mentioned previously, A.M. Best would monitor closely the issuer's appetite for these products and contemplate lowering the entity's ratings if growth trends vary substantially from previous expectations.

A.M. Best also will perform a test at the consolidated holding company level (GAAP basis; see **Step 2**) to determine the full impact of operating leverage treatment on an organization's published debt-to-capital ratio. Credit for operating leverage will be reduced if the sum of activities qualifying for operating leverage (see above examples) exceeds 30% of consolidated (GAAP) liabilities, excluding separate-account liabilities. Therefore, debt issued under qualifying operating leverage activities that exceeds this ratio will be subject to treatment as financial leverage in A.M. Best's debt-to-capital calculations.

Finally, for analytical purposes, A.M. Best will consider the impact of this analysis on the organization's interest coverage ratios.

Operating Leverage Definitions and Examples

STEP 1

Example 1 - ABC Insurance Co.:

Product	Amt. O/S ($ Millions)
GICs	-
FABS	-
FAs	3,600
Retail Notes	-
Securities Lending	1,000*
FHLB Borrowings	800
Total OCB	5,400
General Account (GA) Reserves (Annual Statement lines 1-6.3)	9,000
OCB/GA Reserves	60%

This exceeds A.M. Best's 50% tolerance for a statutory entity. Hence, A.M. Best would closely monitor the company's appetite for these products and contemplate lowering the issuer's stand-alone rating if growth trends vary from A.M. Best's expectations.

Example 2 - XYZ Insurance Co.:

Product	Amt. O/S ($ Millions)
GICs	400
FABS	1,400
FAs	200
Retail Notes	-
Securities Lending	950
FHLB Borrowings	650
Total OCB	3,600
General Account (GA) Reserves (Annual Statement lines 1-6.3)	10,000
OCB/GA Reserves	36%

This does not exceed A.M. Best's 50% tolerance for statutory entities.

Operating Company Borrowings (OCB) = GICs, FABS, funding agreements (FAs), retail notes, securities lending and FHLB advances
Total Balance Sheet Leverage = Consolidated balance sheet debt-to-capital ratio (unadjusted)
Financial Leverage = Debt-to-capital ratio assuming full operating leverage credit
Total Operating Borrowings = Operating company + Holding company operating borrowings (i.e. Operating Corporate Debt)
Composition Ratio = Total Operating Borrowings/Consolidated GAAP liabilities less separate-account liabilities
Adjusted Financial Leverage Ratio = Ratio that reflects the financial leverage + any operating leverage amounts exceeding the holding company tolerance

STEP 2

Example 1 - ABC Holding Co., Inc.:

Balance Sheet Item	Amt. ($ Millions)	
Short-Term Debt	600	
Long-Term Debt	1,500	
Oper. Corp. Debt	1,000*	
Total Debt	3,100	
Total Equity	7,900	
Total Capital	11,000	
Total GAAP Liabilities	25,000	
Total OCB	5,400	
Total Operating Borrowings	6,400	(5,400 + 1,000)
Total Balance Sheet Leverage	28%	(3,100/11,000)
Financial Leverage	21%	(3,100-1,000)/ (11,000-1,000)
Composition Ratio	26%	(< 30%)
Tolerance	7,500	(.30)(25,000)
Amount Exceeding Tolerance	-	(6,400-7,500)
Adjusted Financial Leverage	21%	(3,100-1,000)/ (11,000-1,000)

For analytical purposes, this group's financial leverage ratio will reflect full credit for $1 billion in operating leverage (*)

Example 2 - XYZ Holding Co., Inc.:

Balance Sheet Item	Amt. ($ Millions)	
Short-Term Debt	600	
Long-Term Debt	1,500	
Oper. Corp. Debt	2,300**	
Total Debt	4,400	
Total Equity	5,600	
Total Capital	10,000	
Total GAAP Liabilities	15,000	
Total OCB	3,600	
Total Operating Borrowings	5,900	(3,600 + 2,300)
Total Balance Sheet Leverage	44%	(4,400/10,000)
Financial Leverage	27%	(4,400-2,300)/ (10,000-2,300)
Composition Ratio	39%	(> 30%)
Tolerance	4,500	(.30)(15,000)
Amount Exceeding Tolerance	1,400	(5,900-4,500)
Adjusted Financial Leverage	38%	(4,400-2,300+1,400)/ (10,000-2,300+1,400)

For analytical purposes, this group's financial leverage ratio will reflect partial credit ($0.9 billion) for its $2.3 billion in operating leverage (**)

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Analyzing Contingent Capital Facilities

A primary concern for an insurance organization is its need to maintain an amount of capital that is commensurate with the entity's risk profile. For companies with strong balance sheets, robust earnings and limited opportunities for growth, effective capital management may involve returning a portion of that capital via stock buy-backs or the retirement of debt. While A.M. Best does not advocate aggressively removing capital from the balance sheet, too much capital can be problematic in that it exerts pressure to grow and expand operations at a pace that may not be prudent under certain market conditions.

During periods when the market is flush with capital, stock buy-backs become a popular mechanism for companies to achieve an appropriate balance between capital and risk. However, with a diminished capital cushion, management teams become concerned with their ability to take advantage of future market opportunities. A favorable business opportunity such as an acquisition or new line of business may not wait for the company to raise capital. Moreover, under a shock-loss scenario such as a catastrophe, companies may find it difficult to recapitalize afterward at a reasonable cost. This refers to the concept of financial flexibility, which goes hand in hand with capital management and is a key component of A.M. Best's rating analysis.

BCAR Credit for Contingent Capital Facilities

- SPV fully funded
- Mandatory exercise of put option
  - Date specific or event trigger
- Funds downstreamed to operating company

- Credit cap is 10% of equity capital
- Counts toward financial leverage calculation

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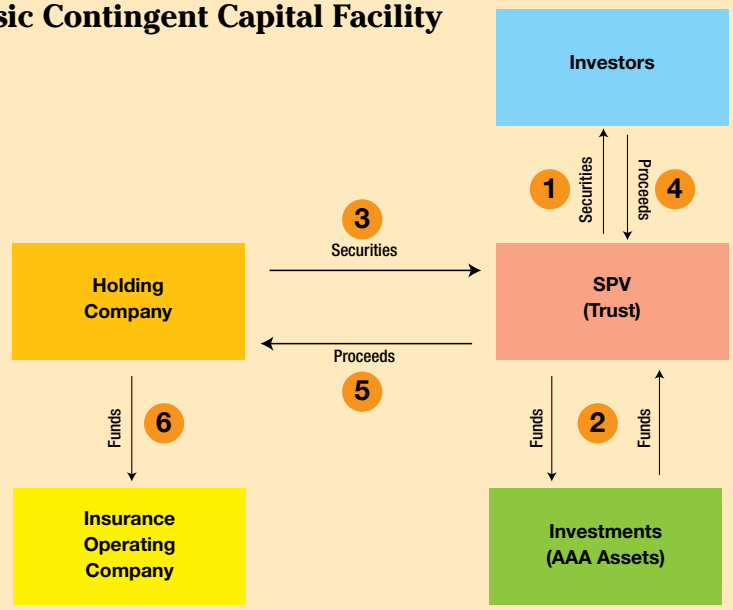
Basic Contingent Capital Facility



1. SPV is formed and issues contingent notes to investors.

2. SPV invests funds in highly rated, liquid assets.

3. Holding company excercises put option, issues securities to SPV.

4. Contingent notes replaced with newly issued securities.

5. SPV liquidates asset and proceeds transferred to holding company.

6. Funds downstreamed to operating company.

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Credit for Contingent Capital Facilities

Some management teams have taken proactive steps toward enhancing their financial flexibility. One popular approach is through contingent capital facilities, which allow companies to preset the terms and conditions of future capital-raising initiatives. Based on the provisions of the facility, A.M. Best will consider giving qualitative and, in some cases, quantitative credit for contingent capital. It should not be inferred, however, that A.M. Best expects all highly rated companies to maintain contingent capital facilities. This is simply one of many ways insurance organizations can demonstrate their financial flexibility.

Considering the recent interest in contingent capital, A.M. Best has determined which provisions likely would warrant credit in Best's Capital Adequacy Ratio (BCAR), which measures risk-adjusted capital available to meet policyholder obligations. Generally, more credit is given to fully funded facilities, where the special-purpose vehicle (SPV) holds highly rated, liquid securities that the sponsor can access on short notice. A.M. Best also looks favorably on facilities that require put options to be exercised when certain events occur, such as a catastrophe loss (i.e. natural, man-made or pandemic). If the put option rests with the holding company, credit is given if the holding company is obligated contractually to downstream the funds to its insurance operating subsidiary. In cases where the put option involves a hybrid issuance at the operating company level, the maximum available credit would be 90%. This could reach 100%

Case Study – Treatment of Contingent Capital Facility

Holding Company Capital Structure

Debt	$600
Hybrid	$200
Equity	$1,800
Total Capital	**$2,600**
Contingent Capital	$400*

*operating company has put option to issue a hybrid security

Operating Company BCAR Treatment

Assuming facility meets guidelines for receiving credit in BCAR (see Table).

	Baseline	Add Contingent Capital Credit
Adjusted Capital	$2,800[1]	$3,060[3]
Required Capital	$2,000[2]	$2,050[4]
BCAR Score	140	149

1 Adjusted Capital – Baseline: Starting Equity Capital is $2600 (assumes all holding company capital downstreamed as equity to operating subsidiary) plus Adjustments totaling $200 (loss-reserve equity, fixed-income equity, deduction for after-tax net PML) = Adjusted Capital of $2800.
2 Required Capital based on the risk profile of the company.
3 Figure reflects addition of $260 (90% of $400 from contingent capital hybrid issuance is $360; subject to cap of 10% of equity capital = $260).
4 Required Capital with Contingent Capital Credit includes additional investment risk of new assets.

Financial Leverage Treatment

Assume security issued via contingent capital facility qualifies as a hybrid and gets 90% credit – subject to 20% total capital cap ($600).

Unadjusted for Equity Credit	
Debt + Hybrid + Contingent/Total Capital	600+200+400/3,000 = 40%

Adjusted for Equity Credit	
Debt + Hybrid charge + Contingent charge/Total Capital	600+20+40/3,000 = 22%

20% cap on equity credit not applicable because $540 < $600.

if the facility involves the issuance of equity securities. However, since limitations are placed on all forms of soft capital, in cases where credit is given in the published BCAR model, the maximum credit allowance is 10% of equity capital. Also, where credit is given on a pro forma basis – that is, prior to exercising the put option – the securities to be issued pursuant to the contingent capital facility will count toward the financial leverage calculation.

Facilities that do not conform to these specifications (i.e. the SPV is not fully funded; triggering the facility is subject to management discretion) still can receive credit on a qualitative basis, and on a quantitative basis toward the stress-tested capital requirement. Here, the securities to be put to the SPV would not count toward the financial leverage calculation until actually issued. The cap on credit given in the stress-tested BCAR would be increased to 35% of equity capital.

Conclusion

Contingent capital facilities provide companies with financial flexibility and protect the balance sheet against the unexpected. Alternatively, they can enable a company to seize a market opportunity in a timely fashion, without first having to test the appetite of the capital markets. Plus, they allow a company to establish the terms and conditions of future capital-raising activities up front, which reduces the chances of having to pay a risk premium under adverse conditions. A.M. Best's rating analysts are available to discuss required capital levels and can give feedback on the rating implications of utilizing a contingent capital facility.

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Analyzing Insurance Holding Company Liquidity

An analysis of insurance holding company liquidity is an integral part of understanding potential stresses on an insurance operating company, because the key source of holding company liquidity is generally the dividends received from owned insurance operating companies.

A.M. Best analysts will review current and projected sources and uses of cash for the holding company. An assessment will be made on the sustainability of the current sources of funds and access to any alternative funding. In addition, the analysts will review the certainty of cash uses such as fixed charges and maturing debt. Holding companies with well-laddered liability profiles will be viewed more favorably than those with large concentrations of maturities that place additional stress on sources of liquidity.

Holding companies possessing a good liquidity profile generally are viewed more favorably by A.M. Best analysts because of perceived improved financial flexibility. Diverse sources of funds, including the maintenance of assets identified as cash equivalents, will assist holding companies in meeting their operating needs, funding subsidiaries to support growth initiatives, meeting short-term debt obligations of both principal and interest expense, and potentially returning cash to shareholders in the form of cash dividends and/or share repurchases. However, A.M. Best analysts will analyze both the various sources and demonstrated sustainability of liquidity, in addition to just measuring the current absolute level of liquidity a holding company maintains.

A.M. Best's analysis of overall holding company liquidity risk incorporates all of its near-term claims on cash, both direct and contingent. A detailed, quantitative and qualitative review of sources and uses of liquidity, market conditions and contingency plans is necessary, since the ability to generate immediate and near-term cash flow can vary significantly among holding companies.

Properly understanding relevant issues, such as the short-term funding risk and debt-service requirements of a holding company, requires an in-depth dialogue between A.M. Best's analytical team and senior management of the holding company. This analysis generally focuses on the typical sources and uses observed at the holding company level.

In addition, each organization generally will have its own unique profile around maintaining liquidity. One enterprise may keep a specified target amount of liquidity at the holding company level, for example two times annual fixed-charge coverage. At the other end of the spectrum, another enterprise may elect to keep most of the liquidity at the operating company level and only require dividends to be sent up to the holding company "as needed." Still other holding companies may have alternative liquidity sources where dividends are divided between subsidiaries with, and without, restrictions on dividends paid to the holding company. The analyst needs to understand, on a case-by-case basis, what

Additional Information

Criteria:

Evaluating Non-Insurance Ultimate Parents

Insurance Holding Company and Debt Ratings

A.M. Best's Perspective on Operating Leverage

Understanding Universal BCAR

Understanding BCAR for Property/Casualty Insurers

Understanding BCAR for Life/Health Insurers

Equity Credit for Hybrid Securities

A. M. Best's Liquidity Model for U.S. Life Insurers

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are a holding company's projected sources and uses over the next 12-18 months to help assess overall strength or weakness of liquidity.

Note: Most of this criteria report focuses on non-operating holding companies. To the extent the holding company is also an operating company, the analyst needs to account for the additional sources and uses that may be due to a company's operating activities, including invested assets and policyholder liabilities.

Utilizing *Best's Credit Rating Methodology*, the analyst generally assigns a holding company issuer credit rating that reflects the company's ability to meet its financial obligations. This rating generally reflects notching off of the rating of the operating companies. The holding company's rating is important because it often dictates the company's ability and cost to access the capital markets. This criteria supports that approach with an overall qualitative assessment of a company's liquidity position.

Most holding companies first rely on their own internal funding sources, which include cash and securities maintained at the holding company level. This generally is supported by dividends received from owning operating subsidiaries. However, by virtue of being regulated, there are usually restrictions on insurance operating company dividends paid to the parent holding company. Each jursidiction has its own restrictions for regulated insurance operating companies with respect to availability of dividends. For example, in the United States, the most typical requirement is to limit the annual dividend to either the "greater of" or "lesser of" 10% of total surplus, or the amount of statutory operating earnings in the prior calendar year, without additional state approval. Therefore, A.M. Best analysts need to be aware of the specific state requirements for each regulated operating subsidiary that could dividend funds to the holding company.

Currently, holding companies have been relying less on short-term borrowings such as commercial paper and are maintaining higher liquidity directly at the holding company level. This is to avoid scenarios where holding companies became over-reliant on commercial paper and cannot meet short-term obligations if the market freezes. A.M. Best believes holding companies are in an overall better credit position by maintaining cash buffers and thereby reducing potential future dividend calls from insurance operating companies if adverse situations arise.

Analysis of Sources and Uses

Holding companies generally issue both short- and long-term financing instruments. In evaluating a holding company's liquidity risk, the holding company's potential near-term obligations are considered and compared with all likely near-term sources of cash. The analysis of an issuer's short-term creditworthiness begins with a careful assessment of its liability structure, including an array of maturing obligations over the short term; the maturity profile/liquidity of any invested assets held at the issuer level; and the exposure of the assets and liabilities to market risk. The purpose of the assessment is to determine the magnitude of short-term funding and any maturing long-term funding utilized in the capital structure, in addition to any other potential short-term obligations that the company's alternative liquidity arrangements may be required to fund. Outstanding commercial paper is a component of near-term obligations, while bank credit facilities often are viewed as a component of the potential near-term sources of cash until drawn.

Sources and uses also change over time. In times of financial crisis, many funding sources can dry up and become unavailable even for highly rated entities. On the

other hand, a company's maturing debt may not be properly laddered, thereby presenting a sizable refinancing risk in the near term when the ability to refinance may not be available, whether for company-specific or general capital market reasons. A company's liquidity policy should not only address known uses but represent a strategy for handling stress scenarios. Liquidity is the first line of defense against adverse pressures from either internal or external forces.

A.M. Best's analysis includes a critical evaluation of an issuer's sources and uses of cash. To assess the company's ability to meet both operating needs and debt obligations, a variety of plausible stress scenarios are analyzed. Next, contingency funding plans for a sustained period of stress, caused by either company-specific concerns or capital or general market disruptions, are examined. In the case of an operating company issuer, general disruptions could be event driven, such as large catastrophic claims following an earthquake or hurricane; a "run on the bank" following a credit event; or declines in investment portfolio valuations due to volatile securities markets. Capital market disruptions usually are related to broader, systemic dislocations such as a financial crisis, when an issuer's ability to roll commercial paper or refinance maturing debt is nonexistent. Tightening or absolute capital market seizures can lead to a contagion effect, which can create difficulties for all issuers. During times of systemic financial stress in which market downturns can exceed the most severe downside projections, A.M. Best anticipates that virtually all commercial paper programs, although backed by committed bank lines of credit or other, alternative sources of liquidity, will be shut down with no new issuance.

Access to alternative liquidity usually occurs with larger, highly rated issuers that have considerable financial flexibility. In these cases, analytical principles that are emphasized include the matching of cash flows for short-term assets and liabilities; the quality of assets with intrinsically high cash flows; and the availability of financial and other assets that can be monetized quickly at close to par.

A.M. Best notes that property and casualty risk characteristics are largely uncorrelated with market risk, as short-term concerns over liquidity likely would be triggered by a catastrophic loss event. Property/casualty insurers generally make more use of contingent financing arrangements to protect against such event-driven stresses. Life insurance companies, particularly annuity writers, have a higher correlation with market movements, as their products carry equity and interest rate risks. In either case, the ability to readily access alternative sources of short-term funding is crucial in determining a holding company's liquidity position.

Liquidity Analysis

The purpose of the analysis is for A.M. Best to become comfortable that the holding company can smoothly gain access to funds to meet known obligations, with an additional buffer to cover potential unknown situations, and limit the reliance on insurance operating company dividends.

Therefore, a thorough understanding of each issuer's liquidity profile should be considered in the context of immediacy, quality and diversity. The following depicts, at a high level, the elements of A.M. Best's liquidity analysis:

• Discuss topics such as management's philosophy with regard to liquidity and financial flexibility and how short-term borrowings fit into an insurer's overall funding strategies.

• Determine the minimum required cash position (with buffer) to meet short-term liabilities.

• Evaluate operating cash flow, including premiums from in-force business and the degree of volatility of operations.

• Determine all short-term sources of financing available to the issuer (including the availability of subsidiary dividends) and review all short-term funding arrangements such as commercial paper programs.

• Evaluate the degree of dependence on the various sources of liquidity.

• Consider the loyalty and financial strength of banking relationships and other backup arrangements.

• Calculate the company's current and prospective interest coverage and cash coverage ratios to evaluate earnings coverage.

• Determine overall financial leverage and the ability to repay current liabilities.

• Determine the company's dependence on operating leverage and the ability to liquidate assets to repay "matched" obligations.

• Discuss stress scenarios and contingency plans should commercial paper and similar funding suddenly become unavailable.

Sources of Liquidity

Insurance holding companies have internal and external sources of liquidity. In general, the most reliable source of liquidity is from internally generated sources of funding. This includes the following:

Internal Sources of Liquidity

Cash on Hand

In evaluating an insurance holding company's cash on hand, A.M. Best may consider:

• Possible restriction due to minimum bank balance requirements.

• Possible complications related to cross-border repatriation, currency conversion, tax issues, regulatory concerns and sovereign risks.

Near-Term Cash Resources

In evaluating an insurance holding company's near-term cash resources, A.M. Best considers:

• Liquidity of any investments held at the holding company by investment type. Under potential stress market conditions, A.M. Best will assess a potential range of market values and potential timing of conversion to cash for any investments held at the holding company.

• Operating cash flow.

• Dividend capacity of subsidiaries (including non-insurance or non-regulated entities). Some insurers have placed invested assets into non-regulated subsidiaries that do not have dividend restrictions, enabling an unrestricted source of interest income that is viewed more favorably in terms of liquidity.

• Alternative value scenarios for liquidity in a stress situation (i.e., mark-to-market).

• Strength, diversity and availability of cash flows, with higher emphasis placed on unregulated, near-term cash flows.

• Assets that may already be pledged or posted as collateral (i.e., under a derivative agreement [ISDA] with a Credit Support Annex) may be returned or freed up based on market moves.

External Sources of Liquidity

Commercial Paper

Commercial paper is defined as a short-term, negotiable, unsecured promissory note, generally issued to meet a corporation's current cash liquidity needs. It often is seen as a prudent source of funding when matched with a corporation's operating needs, providing a diversified and cost-effective source of funding compared with bank loans.

Although large, highly rated issuers can access the commercial paper market directly, commercial paper often is issued through dealers that specialize in buying commercial paper from issuers and then selling it to investors. The dealer market primarily consists of large securities firms, often affiliated with bank holding companies. There is no real secondary market for commercial paper, but dealers generally will make a market in paper that they have helped issue.

For example, in the United States, most commercial paper is exempt from registration with the Securities and Exchange Commission (SEC), as its maturity rarely exceeds 270 days. The majority of commercial paper has a maturity of 30 days or less. Commercial paper is considered a money market security and generally is issued on a discount basis (actual/360). Insurers generally issue commercial paper to finance premiums and cover other operating expenses.

The two main risks with commercial paper are the credit risk of the issuing entity and rollover risk, or the inability of the issuer to fund maturing commercial paper with ongoing issuances. Commercial paper generally is considered a low-risk security for the investor, as it typically is issued only by highly rated entities for short maturities. A lesser risk is interest rate risk, although this is minimized by the short maturity profile of the paper.

Exhibit 1

Short-Term Rating Matrix

Issuer Credit Rating	Short-Term Ratings				
aaa	AMB-1+				
aa+					
aa					
aa-					
a+					
a		AMB-1			
a-			AMB-2		
bbb+					
bbb				AMB-3	
bbb-					
bb+					AMB-4
bb					
bb-					
b+					
b					
b-					
ccc+					
ccc					
ccc-					
cc					
c					
rs					

A.M. Best's Commercial Paper Rating Scale

The evaluation of an issuer's commercial paper reflects A.M. Best's opinion of the issuer's overall credit quality. As a result, the analytical approach is very similar to that of assigning a long-term rating. However, the long-term rating will not fully determine a commercial paper rating because of the overlap in rating categories. In these cases, further testing of liquidity and cash flows, together with other short-term credit-quality metrics, is necessary. **Exhibit 1** shows the linkage between a short-term and a long-term rating.

AMB-1+

Issuers accorded an AMB-1+ rating have, in A.M. Best's opinion, the strongest ability to repay short-term debt obligations. Characteristics of this rating category include exceptional capital management, as well as significant liquidity and financial flexibility. Management's strategy ensures strong earnings and sustainable operating trends. Financial management is conservative, with low debt-to-capital and excellent fixed-charge coverage ratios. Significant liquidity is available internally from a diverse earnings base, as well as from excess cash available on the company's balance sheet. External sources of liquidity include committed bank lines of credit and access to cash through the capital markets.

AMB-1

Issuers rated AMB-1 have, in A.M. Best's opinion, an outstanding ability to repay short-term debt obligations. Most credit characteristics discussed in AMB-1+ will be similar for AMB-1, with slightly lesser strengths. Issuers in this rating category will have a strong capability to service short-term debt. Fixed-charge coverage, liquidity and capital structure also are favorable. The issuer displays ready access to the capital markets and has significant alternative liquidity available to repay short-term debt obligations.

AMB-2

Issuers rated AMB-2 have, in A.M. Best's opinion, a satisfactory ability to repay short-term debt obligations. While alternative liquidity remains adequate, companies in this category have more variability in earnings, cash flow and fixed-charge coverage. Companies at this rating level may not be able to rely consistently on the capital markets to fulfill liquidity needs. However, they maintain adequate alternative liquidity protection.

AMB-3

Issuers rated AMB-3 have, in A.M. Best's opinion, an adequate ability to repay short-term debt obligations. However, adverse economic conditions likely will reduce the issuer's capacity to meet its financial commitments.

AMB-4

Correlates to the non-investment-grade long-term rating category. The commercial paper market will not accept issuers with this rating.

U.S. Commercial Paper Programs

As stated above, in general, all U.S. commercial paper programs are exempt from SEC registration as long as the final maturity is less than 270 days. Below are three types of programs, of which the first is most widely used by insurers.

<u>3(a)(3)</u>

- Maturities limited to 270 days.
- Proceeds must be utilized for current transactions.

<u>4(2)/144A</u>

- Does not limit maturities, but generally less than one year.
- There is no limit on the use of proceeds.
- Exemption based on the private placement nature of this note offering.

3(a)(2)

• This exemption is available for bank obligations, both direct and via a letter of credit (LOC).

• LOC-backed commercial paper that is issued by a corporation or institution and "guaranteed" by a commercial bank.

• LOC programs carry the credit rating of the LOC bank.

• The obligation of the LOC bank is irrevocable and unconditional, regardless of the issuer's financial condition.

Bank Credit Facilities

In assessing an insurance holding company's bank credit facilities, A.M. Best considers both quantity and quality. Uncommitted credit facilities, bilateral (one-off) lines of credit or facilities syndicated with very few banks may be more risky when the banking system is stressed. High levels of participation in a syndicated credit facility could lead to majority control by a few banks. This could work against a company in stressful situations when amendments or waivers are required to avoid default. However, in practical terms it may be easier to negotiate an amendment/waiver with fewer lenders than with more. The analysis also considers the financial strength of each lender and relationship factors.

Borrowing options should include same-day funding, as adverse markets may cause the company to suddenly need same-day funds to roll over maturing commercial paper. Alternative liquidity is examined to ensure that swing lines – portions of a credit facility that can be accessed on very short notice – are available for immediate coverage on commercial paper issued. A.M. Best seeks to become comfortable that the company has sufficient immediate liquidity to repay all commercial paper that comes due on any given day.

Documentation of credit facilities (usually the term sheet) is reviewed carefully to determine how much flexibility a company is allowed within the provisions. These include:

• Covenants

• Material adverse change (MAC) clauses (including rating triggers)

• Events of default

• Cross-default and cross-acceleration provisions

• Maturity date

• Conditions of funding

• Changes in control or management

• Renewal procedures for multiyear or 364-day revolving credits

Due consideration is given to contractually committed bank lines compared with an

uncommitted credit facility such as advised and/or guidance facilities, which the lender can withdraw at will. A.M. Best also places greater value on relationship-based, committed bank facilities than on transactional or arms-length arrangements, and factors the remaining duration into its assessment.

A.M. Best can request a copy of the credit agreement to assess this alternative source of holding company liquidity. For example, often a portion of a credit facility will be allocated to backstop commercial paper borrowings. Additionally, insurers will use a portion of a facility to issue irrevocable Standby Letters of Credit. Both of these uses will reduce the overall borrowing capacity for the holding company.

Letters of Credit (LOCs)

While the practice is not prevalent among insurance holding companies, occasionally they may enhance their liquidity by issuing commercial paper backed by a LOC from a bank. To provide true liquidity, the LOC has to be an irrevocable and unconditional guarantee that will pay off all commercial paper at maturity in all cases. However, while the LOC provides current liquidity to the company, the bank – not the issuer – bears credit risk. In such cases, A.M. Best may rate the commercial paper program higher than the stand-alone debt rating because of the credit enhancement from a bank of stronger credit quality.

Insurance holding companies that own a Lloyd's corporate member are able to use letters of credit to support their underwriting at Lloyd's, and more recently, insurance holding companies have been obtaining letters of credit to fund captive operating companies or even issuing guarantees counted as assets in certain jurisdictions. Although not directly linked to liquidity, they are potential significant uses of cash that should be addressed in any liquidity analysis.

Federal Home Loan Bank Borrowings

In the United States, many insurance operating companies have joined their local Federal Home Loan Bank (FHLB) networks through investment in capital shares. In turn, the FHLB will allow the insurer to leverage this investment through the advancement of funds. This alternative access to liquidity generally provides insurance companies with a diversified source of funding, stopgap liquidity, support for match-funding programs and the ability to enhance yields through more robust liquidity management. A.M. Best generally views borrowed funds used for institutional match-funding programs as operating leverage. Alternative uses are more likely than not to be treated as financial leverage. From a liquidity standpoint, analysts should ensure that if a holding company is borrowing directly from an FHLB, assets are properly matched to the tenor of the borrowing and the quality remains investment grade.

Uses of Liquidity

The general uses of liquidity for an insurance holding company are retiring direct obligations such as short-term borrowings or maturing long-term borrowings. In addition, liquidity generally is necessary to fund working capital needs such as covering operating expenses, debt service requirements or funding growth at the subsidiary level. Finally, outside investors generally are looking for a return on their investment either from common or preferred stock dividends and/or share repurchases.

Evaluating Cash Outflows

The analysis first considers the cash sources available to meet obligations. Then the analysis lists forthcoming claims on cash, including operating uses of cash; the maturity profile for servicing debt and other financial claims; claims that could become payable at the option of the creditor; and reasonably possible contingencies. A.M. Best also will factor in manage-

ment's track record of reducing discretionary cash outflows in periods of increasing financial stress.

Note: Most use of securities lending and/or repurchase agreements is undertaken at the operating level and therefore is not usually done at the holding company. However, these activities could be direct obligations of the holding company, and any funding issues at the subsidiary level on these activities may eventually be a call on cash from the holding company. Additionally, if the insurance holding company itself is under an ultimate parent, any additional cash sources or uses due to this relationship may be reviewed and included in the analysis.

Potential Near-Term Claims on Cash

Direct Obligations

• Fixed-charge servicing (including interest expense and preferred dividends)

• Short-term debt

• Current portion of long-term debt

• Contingent obligations

• Funding arrangements (including the use of reverse repos)

• Financial and commodity derivatives contracts (including the posting of additional collateral)

• Off-balance-sheet financing obligations

• Potential litigation settlements or judgments

• Margin requirements

Other Claims on Cash

• Operating expenses

• Capital spending commitments or investment commitments

• Common stock buybacks

• Common stock dividends

• Guarantees made by the holding company (i.e., more recently many holding companies have received a permitted practice in certain states to capitalize their captive insurance companies through the use of a parental guarantee)

• Funding shortfalls from subsidiary operations (i.e., collateral calls for obligations originating at the subsidiary level such as derivative counterparty exposure or liabilities from settling securities lending or repurchase obligations)

• Funding of potential lawsuits, which are often difficult for the company to quantify

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Methodology

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Additional Information

Criteria:
Rating Members of Insurance Groups

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This criteria report can be found at
www.ambest.com/ratings/methodology

Evaluating Non-Insurance Ultimate Parents

Understanding the potential effect on a rated entity from the activities of the ultimate parent/holding company is an important component in developing a comprehensive view of the risk profile. The financial flexibility of an insurance company's owner(s), management effectiveness and strategy, and the importance of the insurance company compared with other subsidiary organizations and businesses within the consolidated organization all are incorporated into the published rating of the insurance company. It is important to understand the owner's ability and willingness to support the insurance company during times of stress. This becomes interesting and complex when the insurance company is owned by a parent that is engaged primarily in a business other than insurance.

This criteria report outlines a two-step rating process that is employed when a rated insurer has a non-insurance owner and describes how non-insurance ultimate parents are evaluated by A.M. Best. The first step contemplates gathering information to derive a stand-alone assessment of the insurance company that is to be rated. This stand-alone assessment utilizes many of the analytical procedures and techniques used to analyze any insurer that A.M. Best rates. The second step contemplates whether an adjustment is necessary to distill a published rating to be assigned to the insurer, after incorporating information related to the non-insurance parent and its intended incorporation of the insurance company in the consolidated organization's business plan. With this information, A.M. Best determines whether or not the individual insurance subsidiary qualifies for enhancement or drag to its stand-alone assessment. More information regarding the specifics of this process can be found in A.M. Best's *Rating Members of Insurance Groups* criteria report.

The analysis of the non-insurance owner of a rated insurer includes assessment of publicly available credit measures, market-based credit measures and independently performed financial analysis. The relative weight of the approaches utilized to generate an assessment of the non-insurance owner is assessed at the rating committee.

The publicly available credit measures of non-insurance owners include the credit ratings assigned to the company or group by other credit rating agencies (CRAs) that have developed expertise in that particular industry. The credit analysis performed by major CRAs is a tool that incorporates quantitative and qualitative information from public and nonpublic sources, in addition to the CRA's proprietary expertise derived from the processes and people involved in assigning a rating. A.M. Best utilizes an approach that averages the major credit ratings publicly available.

The market-based credit measures of non-insurance owners incorporate tracking and use of market-based measures of default risk

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indicated by credit default swap (CDS) prices ("spreads"), as an example. If credit default swaps are not available, the credit spreads on issued debt instruments may be utilized. CDS spreads contain valuable and timely information regarding the market's perception of an issuer's credit quality. While they can be volatile and need to be monitored over an extended period, CDS spreads act as a good early warning system that can act as a catalyst for the analytical team to initiate immediate conversations with company management. As appropriate, the rating committee would assess the current rating level and adjust it as needed.

When an insurance company is owned by an individual(s), the analysis may require personal financial statements of the owners. In these cases, enhanced scrutiny of the stockholder dividend track record and the components of the expense ratio of the insurance company will take place.

In the case of a sovereign parent, A.M. Best conducts a similar analysis on the creditworthiness of the government entity, taking into account credit rating information, the sovereign's financial health (including debt and fiscal position) and market-based default probability information. In addition, the analysis incorporates an assessment of the political environment of the sovereign entity (including government stability and the degree of corruption).

The analytical team performs a detailed, relevant, independent financial analysis that could be generic enough to apply to most companies, or the team may utilize an industry-specific approach if warranted. Peer analysis of non-insurance owners also can be a valuable tool to the analytical team. Last, to the extent that a non-insurance owner has financial and nonfinancial information available in the public domain, it can be utilized by the analytical team. Information such as news reports and stock analysts' reports and recommendations can provide valuable insight. In addition to the independent financial analysis, the analytical team also may incorporate an opinion of a non-insurance owner's enterprise risk management and corporate governance policies and procedures.

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Catastrophe Analysis In A.M. Best Ratings

Additional Information
Criteria:
Understanding BCAR for Property/Casualty Insurers

Understanding BCAR for Canadian Property/Casualty Insurers

Understanding Universal BCAR

Rating Members of Insurance Groups

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A.M. Best Co. considers catastrophic loss to be a primary threat to the financial strength and credit quality of property and casualty insurers because of the significant, rapid and unexpected impact that can occur. While many other exposures can affect solvency, no single event can affect policyholder and debt-holder security more instantaneously than catastrophes. Moreover, immediately following a significant event, the company retains its exposure base, and subsequent events can occur prior to the implementation of any risk mitigation strategies.

Given the increased frequency and severity of catastrophic events in recent years, insurers and reinsurers have been challenged to further improve their catastrophe risk management systems and controls, and to provide stronger capitalization to support the risk. Experts in the fields of climatology and meteorology have submitted that global warming is contributing to the unprecedented number of severe events occurring worldwide in recent years, representing a fundamental shift in frequency expectations.

Furthermore, as nations develop, population growth becomes more concentrated in urban and suburban settings, and supply chains increase in complexity. As a result, insurable values are rising rapidly. This is leading to the very real potential for increased severity from both meteorological and seismic events.

Accordingly, A.M. Best continues to assess catastrophe risk management capabilities of primary insurers and reinsurers alike. Regardless of the underlying reasons for changes in the environment, insurers knowingly accept risk with the intent of diversifying the loss, and to maintain their ratings, must demonstrate their ability to effectively manage catastrophe risk and the financial wherewithal to absorb potential losses.

Catastrophe Risk Management: Models and More

The increased frequency and severity of natural catastrophes in recent years has heightened the importance of catastrophe risk management for insurers and reinsurers worldwide. Recent events include:

- The tumultuous Gulf Coast hurricane seasons of 2004 and 2005
- Hurricanes Ike and Gustav in 2008
- Frequency of significant tornado/hail events
- Significant earthquake, tsunami, wildfire and flood activity

While most companies modeled their catastrophe exposures in some fashion before these events, there have been many meaningful lessons learned in the past decade about both the quantitative and qualitative elements of measuring and managing catastrophe risk exposure. Not the least of these is the significant variability in model output based on the quality of the data, assumptions used in the models or parameters utilized in running the models.

In the aftermath of events such as the trio of hurricanes – Katrina, Rita and Wilma (KRW) – that battered the Gulf Coast in 2005, some larger carriers decided that a gradual withdrawal from the exposed areas was a better strategy than purchasing additional reinsurance. Some

This criteria report can be found at *www.ambest.com/ratings/methodology*

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carriers were surprised that these weather events produced losses across multiple exposures that were thought to be uncorrelated. As a result, an important lesson learned, regardless of the magnitude of losses, is that companies not only need to measure and model catastrophe risks after the business has been bound, but also need to mitigate the risk on the front end by using a more proactive and integrated underwriting approach where all risks and risk relationships are considered.

Since good catastrophe risk management is specific to every company, A.M. Best believes that managements need to be acutely aware of the specific issues that relate to their own geographic exposures and have the ability to properly manage those risks with accurate data. In addition, A.M. Best expects that company managements will be able to articulate their risk tolerance levels, given their importance in the assignment of ratings.

Data Quality

Proper coding of loss exposure is essential to ensure meaningful model output is developed. Key items are quality data, accurately mapped locations, property coding and the models used to assess property values. Once the location of the property is collected, property attributes need to be obtained, such as the structure of the building and how many floors there are, what year the building was built, what type of roof the building has and what types of roofs are on the surrounding buildings. Given the sophistication of the many risk management and underwriting tools, A.M. Best strongly believes that all insured properties must be properly coded in all of these key metrics. As additional information improves loss estimates, properly capturing as many secondary modifiers as possible within the model will allow management to more effectively utilize the output in its risk management decisions.

Regardless of the methods used or the approach taken, the information capture has to be as timely as possible to allow for true valuation of the risks at hand. How does management assess the value of a building? What insurance-to-value model and version is used, with special consideration to the age of the parameters that were used in the model? How often are insured values updated, and are the values based on new construction or reconstruction costs?

Capturing the information is one thing, but verifying these data on a timely basis is integral. For primary carriers, site reviews are especially necessary. For instance, what once was a small restaurant might now have outdoor seating with significant upgrades in lighting, landscaping and furniture. Without this updated information, the rate doesn't reflect the potential exposure, putting the insurer at a possible disadvantage.

Safeguards must be implemented to prevent an underwriter or an agent from manipulating the system by miscoding business to get a more favorable classification. Auditing of underwriting information is critical to ensure errors and/or bulk coding are not occurring. These auditing controls and their verification also are important to reinsurers to ensure they are receiving quality information.

The importance that company management places on the quality of the data is a critical factor in the rating assessment. A.M. Best expects higher rated companies to be those that emphasize strong catastrophe management with a superior understanding of and emphasis on quality of underwriting data.

Monitoring Exposures and Controls

Today, most insurers utilize sophisticated catastrophe modeling tools, primarily those provided by specialized firms with extensive meteorological, seismological, statistical and technological resources to provide loss estimates. The models depend on the veracity of the data input, subject to manipulation through the use of various options that can add to or reduce the net probable maximum loss (PML).

While catastrophe models are extraordinarily useful in the analytical and underwriting process, they are only tools and cannot be solely relied upon for the management of maximum exposures. A.M. Best believes the catastrophe models are valuable tools in monitoring an estimated distribution of potential catastrophe losses, and will continue to utilize modeled output in its evaluation of capitalization through Best's Capital Adequacy Ratio (BCAR). However, A.M. Best also believes that careful monitoring of zonal and other specific aggregates, including "what-if" scenario testing using severe events in areas with concentrated exposures, is critical to understanding maximum potential loss and is a critical component of strong catastrophe risk management.

In using any catastrophe model, after ensuring quality data are entered, the user must be concerned with the parameters of the model. In using models to assess catastrophe loss exposure, there are many model options that can be set at varying levels of conservatism. A.M. Best expects companies to be realistic in their use of these tools. Demand surge, storm surge, loss-adjustment expenses and additional living expenses historically have contributed to losses and are expected to be included in any loss estimate. Depending on what coverages are underwritten, fire following earthquake, property structure and contents, business income, workers' compensation, ocean and inland marine, energy, flood, auto physical damage and crop losses also are expected to be included. An additional estimate should be considered for any unmodeled losses such as assessments from guaranty funds, involuntary pools, etc. In addition, model output should be based on the "near-term"/warm sea-surface temperature (WSST) event set. If this information is excluded, A.M. Best analysts will make conservative assumptions that would impact their view of the company's risk-adjusted capitalization.

Since there are several viable specialized tools available for modeling catastrophes, there is a range of perspectives on a company's loss exposure. Determining which tool to use in assessing catastrophe exposure will require an understanding of the differences specific to each modeling tool, as well as the risks unique to the insurer. A.M. Best expects that a company's management will be able to explain why it has utilized the output selected to best represent its catastrophe exposure. This would be true in the case of companies utilizing multiple models, but also true for those companies that have chosen to use only one model to assess their exposure and/or have recently changed which model they rely on to produce their estimates. A.M. Best expects those companies with strong risk management to have considered the quality of the models they are using, as well as other techniques to monitor exposure within their catastrophe management programs.

A.M. Best believes those companies that utilize models to merely manage to the lowest-case loss estimates, rather than realistic loss scenarios, have demonstrated weakness in business practices that will be reflected in their ratings, regardless of apparent capitalization. A.M. Best expects those companies that are considered strong risk managers to also review aggregate loss-exposure accumulation. Aggregate loss exposure should be used in scenario testing as a secondary test of the catastrophe modeling tools. Specific zonal aggregate exposure limits need to be established using a reasonable and defensible basis. Are limits based on actual loss events, or are they the result of robust scenario testing? A company may have "dodged the bullet" for one event, but that doesn't mean that it will miss a similar event the next year. Companies need to consider potential scenarios in

addition to model output to ensure they are not overexposed to unforeseen events. While zonal aggregate limits are a useful tool in managing catastrophe exposure, they have their weaknesses. One such limitation is that at an aggregate level, individual risk underwriting is ignored. A better risk is treated the same as a poor risk. Still, zonal aggregate limits can be valuable.

The final key to strong catastrophe risk management is the integration of the monitoring of exposure into the underwriting process. Are exposure data integrated directly into the underwriting process, and do underwriting decisions include the latest aggregate exposure position? For those companies with material catastrophe exposure, the management of that exposure should be a continual process, not just an annual run of catastrophe models.

Catastrophe risk management is evaluated relative to these standards and considered along with the financial flexibility of a company to determine its ability to first, avoid a material loss to capital, and second, respond to any significant capital deterioration from such an event. Those companies that have demonstrated strength in both of these areas will be afforded the greatest amount of flexibility within A.M. Best's stress test of catastrophe exposure.

Catastrophe Risk: Treatment in BCAR

As mentioned above, A.M. Best believes that catastrophe models are valuable tools and will continue to utilize modeled output in its evaluation of capitalization through BCAR. As part of this process, analysts gather information through A.M. Best's Supplemental Rating Questionnaire (SRQ) or other similar requests regarding which items and parameters are included in the company-provided modeled output. As indicated, A.M. Best requires the options for demand surge, storm surge, fire following earthquakes, secondary uncertainty and the "near-term" event set to be selected for inclusion in the loss estimates. Material sources of catastrophe risk, such as property structure and contents, additional living expenses, business interruption, flood, auto/motor physical damage, workers' comp, energy, ocean and inland marine, crop and unmodeled losses such as loss adjustment expenses also are required to be included in the loss estimate. These requirements enhance the standardization of the assumptions underlying the PMLs utilized in A.M. Best's determination of capital requirements. If these items are not included in the PML estimate, the expected loss estimate will be increased by a conservative margin for inclusion in the BCAR. A.M. Best analysts also review aggregate insured value data by territory and engage management in discussions regarding maximum exposure and risk appetite. Where modeled data are unavailable, the aggregate zonal information is necessary to develop an appropriate stress test.

For companies with natural catastrophe exposure from property or workers' comp business, A.M. Best includes a reduction to surplus in its calculation of a company's standard BCAR score, which is published in its company report. The baseline treatment in BCAR is to reduce surplus using the larger of a 1-in-100-year per occurrence hurricane/windstorm PML, a 1-in-250-year per occurrence random time earthquake PML, or a recent actual large loss, net of reinsurance and of a 35% tax rate. The PML should be based on world wide exposures, not regional exposures. The analyst may increase the loss estimate to reflect a more severe event in cases where the modeled loss estimate appears to be inconsistent with overall exposures.

While BCAR focuses on the estimated net exposure to a 1-in-100-year hurricane/windstorm and a 1-in-250-year earthquake, the level of reinsurance protection purchased by a

company also is reviewed. A.M. Best expects that company management will explain their level of risk tolerance in establishing the amount of reinsurance protection purchased. The amount of protection purchased beyond the exposure included in A.M. Best's capital model is considered in the overall assessment of a company's capital position. Analysts look beyond a specific number to consider the volatility in the output to determine the true risk in the capitalization. In theory, if an insurer prudently manages its risk accumulations and is conservative in its appetite for surplus or earnings exposure, it should be able to withstand a reasonably severe event without a change to its ratings.

When companies provide output from multiple catastrophe models, A.M. Best's baseline approach is to take the straight average. This, however, can be adjusted to a weighted average in cases where more refined information is available that supports greater reliance being placed on a given model. In either case, A.M. Best expects a company's management to be able to explain why it has utilized the output selected to best represent its catastrophe exposure.

Natural Catastrophe Stress Test

In addition to requiring a company to maintain capitalization that can withstand the net after-tax impact to surplus from a severe event, A.M. Best analysts perform a further stress test on the capitalization. To reflect the notion that the company's net exposure is similar after an event and that the organization remains exposed to additional events, a second net after-tax loss is included. This should not be interpreted as A.M. Best requiring a company to withstand two major events but instead is intended to be a reasonable reflection of the stressed risk profile shortly after a catastrophic event.

As the stress test reflects the financial condition following an event, A.M. Best may allow the stress-tested score to fall below the guidelines. This tolerance is intended to reflect the expectation that improvement will occur as reinsurance recoverables and reserves are reduced and, in some cases, capital restored. As discussed later, the level of deterioration allowed from a standard risk-adjusted capital level to a stress-tested level will be based on a number of quantitative and qualitative factors.

Stress Test Methodology

The following calculations are completed in the BCAR model for the natural catastrophe stress test:

1) The after-tax net per-occurrence probable maximum loss (PML) of the first event, including retention, co-participation and reinstatement premiums on catastrophe reinsurance contracts, is subtracted from surplus.

2) Reinsurance recoverables are increased by 40%** of the difference between the gross and net pretax loss and LAE (retention and co-participation) of the first event.

3) 40%** of the net pretax loss and LAE (retention and co-participation) of the first event is added to existing reserves to capture the potential for adverse development. Companies protected from any adverse development would not require this adjustment.

4) The after-tax net PML (retention, co-participation and reinstatements) for an additional event is deducted from risk-adjusted surplus.

5) The PML used for the second event is the same as for the first event where hurricanes/windstorms are the major risk, as the occurrence of a major hurricane/windstorm has no

influence on the potential severity of subsequent events. Where earthquakes are the major exposure, the second event is reduced to a 1-in-100 year loss, given the lower probability of a second major earthquake following the first event in the same year.

Capital Adequacy Levels

A.M. Best's published BCAR guidelines for financial strength ratings are shown in **Exhibit 1**. To be considered for a particular rating level, an insurer's standard (non stress-tested) BCAR generally must meet or exceed the guidelines for that rating level. However, if an entity has a volatile operating history, a weak business profile or poor risk management, the standard BCAR must be maintained substantially higher than the indicated guidelines for the given rating level.

Since the stress test is intended to represent a company's financial position shortly after a catastrophe event, and in theory risk-adjusted capitalization should recover over the intermediate term, the stress-tested BCAR score can fall to a maximum of 30 points below these published guidelines. The level of tolerance will be based on A.M. Best's assessment of a number of factors.

Exhibit 1

BCAR Guidelines

BCAR	Implied Balance Sheet Strength
Secure:	
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
Vulnerable:	
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

Key among the factors regarding A.M. Best's tolerance is the organization's perceived financial flexibility. Companies that are able and willing to replace lost capital immediately following an event will be afforded greater leeway with regard to the disparity in the standard BCAR and the natural catastrophe stress test. The source and type of funds available will play an important part in this determination. The capital markets' willingness to provide the necessary funding also will be considered and will vary depending on market conditions. An assessment of financial flexibility also will include parent and subsidiary relationships and will incorporate A.M. Best's expectation of the level of commitment to the catastrophe-exposed subsidiary on both a current and a prospective basis (see methodology, *Rating Members of Insurance Groups*).

In the event that debt is issued to facilitate the replenishment of capital, the holding company analysis will be updated to assess the impact on financial leverage and coverage ratios.

A second key factor regarding the level of decline in the stress-tested scenario is an assessment of historical volatility in terms of both the balance sheet and operating performance. Companies with significant volatility in results will be afforded less tolerance in A.M. Best's view, as replenishing capital through earnings could prove difficult. Conversely, companies with consistently stable results and proven track records of favorable earnings and corresponding growth in surplus will be afforded greater tolerance in the stress-test scenario.

Another important consideration is a company's exposure to multiple events in a season. As was evident over the past several years, this exposure to frequency applies to both hurricane and tornado/hail exposed regions. Those with exposure to more frequent severe

events will be afforded less tolerance in the application of the stress test. An accumulation of losses associated with multiple events is an important consideration, particularly as it applies to net retention levels relative to surplus. A high frequency of events combined with even a modest net retention potentially could generate a significant accumulation of losses. Accordingly, the ability to absorb subsequent events could become a rating issue, leading to less tolerance relative to capital requirements.

A.M. Best considers the overall level of catastrophe exposure relative to surplus as part of the stress test application. Those companies that have relatively high catastrophe exposure, either gross or net of reinsurance, likely will have higher capital requirements, given the inherent risks associated with elevated dependence on reinsurance and greater exposure to credit risk.

Underlying all these factors is A.M. Best's assessment of each company's catastrophe risk management capabilities. As noted, A.M. Best believes companies that possess strong catastrophe risk management continually focus on data quality, regularly monitor exposures and have specific controls in place to manage their exposures on an ongoing basis. Accordingly, companies that have these characteristics likely will mitigate the overall loss associated with severe events and avoid material declines in risk-adjusted capitalization.

Exhibit 2

Hypothetical Company Comparison

	Company A	Company B	Company C	Company D
Profile	Personal Auto/Homeowners in Several Midwestern States	Personal/Commercial Auto, Homeowners & Small Commercial in Western U.S.	Start-Up Primary Property Along Gulf Coast	Start-Up Commercial & Primary Property in Southeast U.S.
Standard BCAR	170	145	180	300
Stressed BCAR	135	104	130	185
Financial Flexibility	Limited	Strong	Average	Average
Historical Volatility (Balance Sheet & Operating Performance)	Yes	No	Not Applicable	Not Applicable
Frequency Exposure	Yes	No	Yes	Yes
Primary Cat Exposure	Tornado	Earthquake	Hurricane	Hurricane
Catastrophe Exposure to Surplus	Modest Gross & Net Exposure	High Gross, Low Net	High Gross, Modest Net	High Gross, Low Net
Catastrophe Risk Management Capabilities	Average (somewhat concentrated)	Above Average (geographic spread, diversification by line)	Average but untested (concentrated exposures but adequate reinsurance program)	Average but untested (concentrated exposures, adequate reinsurance program, management history in region & lines of business)
	Annual catastrophe model runs	Models and aggregate exposure used in underwriting process		
	Minimal data verification	Data verification process used		
Maximum Allowance in Stress Test (Below Guideline)	0 points	30 points	N/A – margin required until catastrophe management process in place	N/A – margin required until catastrophe management process in place
Resulting FSR	A- Stable	A- Stable	B++ Stable	A- Stable

As indicated, the level of tolerance regarding the decline under the stress test will be based on a qualitative assessment of these factors and will be determined via the rating committee process, as there is no one BCAR score that equates to a given rating level for all companies. While the stressed scenario for some companies may fall below the guidelines, for others this evaluation may result in no allowance relative to the guidelines. Via the rating committee process, the interplay of risk-adjusted capitalization, operating performance and business profile ultimately determines the rating.

Conclusion

A.M. Best continues to believe that understanding each entity's financial condition after a catastrophe, as well as its ongoing ability to respond to subsequent events, is a critical component of the rating assignment. In addition, each company's catastrophe management capabilities and level of data quality play an extremely important role in the assessment of capital required to offset catastrophe risk. Accordingly, A.M. Best will continue to put significant emphasis on catastrophe risk management, using both the standard and stress-tested view of risk-adjusted capitalization.

Note: All information on the stress test and assumptions can be shared with management on request. Published BCAR scores do not include stress tests.

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April 2, 2014

Evaluating U.S. Surplus Notes

Surplus notes, also referred as surplus debentures, contributed certificates or capital notes, are unsecured indentures that may be issued directly by insurance operating companies domiciled in the United States. Surplus notes are closely regulated and deeply subordinated to policyholder claims, and therefore are reported as part of policyholders' surplus despite their debt-like features.

Surplus notes have been part of U.S. insurance companies' capital and surplus component since the 1960s. The early 1990s witnessed an increase in the face value amount and maturity period of this type of capital instrument. The 2003-04 period also saw a spike in issuance of surplus notes as insurers raised capital to support market opportunities. Surplus notes' contribution to the U.S. insurance industry's policyholders' surplus generally has been around 5% for the past five years. On average, among U.S. issuers of surplus notes, roughly 10% of policyholders' surplus consists of surplus notes.

The authority to issue surplus notes and make interest payments is generally part of state insurance statutes or regulations. Although surplus notes' legal characteristics vary slightly from state to state, most state regulation provides that such capital instruments be reported as policyholders' surplus and not debt only if the surplus note is subordinate to policyholders' claims, other claimants and all other classes of creditors other than surplus note holders in the event of liquidation. In addition, interest payments and principal repayments require prior regulatory approval in the insurer's state of domicile. Generally, U.S. statutory accounting principles (SAP) allow insurers' investments in surplus notes to be treated as admitted assets, with their value determined by the Securities Valuation Office of the National Association of Insurance Commissioners (NAIC). They also are part of an insurer's total adjusted capital under risk-based capital ratio calculations.

Given the historical context of surplus notes and their unique place in an insurance company's capital structure, this criteria report highlights:

I. Considerations in determining the equity and debt characteristics of surplus notes issued by insurance companies;

II. Treatment afforded to surplus notes in Best's Capital Adequacy Ratio (BCAR);

III. Treatment of surplus notes in A.M. Best's financial leverage calculations; and

IV. A.M. Best's approach to rating surplus notes issued by insurance companies.

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I. Considerations

Surplus Notes Features

The starting point in the process is to evaluate the specific terms and conditions of the surplus notes. This entails comparing the surplus note features to the characteristics of pure equity and clean debt instruments. The features and provisions evaluated include but are not limited to the following (See **Exhibit 1**):

- Term – Maturities/scheduled maturities
- Call provisions

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- Subordination
- Step-up rates
- Deferral features – Optional/mandatory payment of interest or principal
- Cumulative/non-cumulative coupon payments
- Replacement language
- Alternative payment mechanism
- Conversion feature
- Default event language
- Other investor/creditor covenants

A.M. Best will review the above features of the surplus notes in a collective way to assess the equity content of the issue. This is dictated by:

- Permanency of capital – is the note available to pay losses when needed?

- Ability to defer interest or dividend payment – are payments deferrable when a company is in distress?

- Subordination in an issuer's capital structure, i.e., loss protection provided to policyholders and other creditors.

Surplus notes that A.M. Best typically views as equity-like based on characteristics are:

- Long term, typically with a remaining maturity of more than 10 years;

- Subordinate to policyholders, claimants, beneficiary claims and other classes of creditors, other than surplus note holders; and

- Subject to regulatory approval of interest payments and principal repayments.

Regulatory View

A.M. Best recognizes the regulatory view and environment of the issuer's domicile as part of the assessment of the equity content of the surplus notes. A.M. Best will take into account: a) whether regulatory approval is sought before the issuance of the surplus notes; b) the amount of surplus notes allowed as policyholders' surplus by the regulator; c) provisions for regulatory approval of interest and principal payments; and d) provisions for regulatory approval to redeem and replace surplus notes. A.M. Best takes a positive view where the above items are reflected in state insurance statutes of the issuer's domicile. Also viewed positively is a history of regulatory actions during a period of an insurance company stress/default, where the surplus notes performed the role of equity capital with respect to priority of claims during liquidation, and served as a form of loss-absorbing capital.

Management Intent

A.M. Best will examine both management intent and the intended use of funds in evaluating surplus notes. It should be management's intent that the surplus notes will be part of the company's long-term capital to be used to satisfy policyholder claims and other senior claims during a stress period, and that the surplus note holder may be subject to potential loss. A.M. Best will look more favorably at surplus notes issued as part of available capital by a new company with a clean balance sheet – a start-up with no business activity – or by an active company to fund profitable business while maintaining conservative underwriting leverage, as opposed to a troubled company using the proceeds

Exhibit 1

Surplus Notes Features

Feature	Description	Comments
Term	The remaining time to maturity or scheduled maturity period of the issue.	Notes with remaining time to maturity of 10 years or more, and notes with no stated maturity create more financial flexibility with minimal refinancing risk. Thus they act more like equity capital.
Call Provisions	The option but not the obligation to redeem the outstanding note balance by the issuer at some point in time.	Call provisions with call periods five years or more after issuance may provide financial flexibility depending on the issuer's financial position and the financial environment. Issues with longer call periods provide more equity characteristics compared with those having shorter call periods after issuance.
Subordination	Determines the payment priority of the notes. Generally payment of principal and interest is subordinate and junior to policyholder claims, other beneficial claims and other issuer's liability at liquidation.	Subordination of notes to policyholder claims and other senior creditors, and interest and principal payments subject to regulatory approval, make the notes loss absorbing during liquidation. Note holders then are subjected to losses like equity holders before policyholders and other senior creditors.
Step-up	The number of basis points that the security coupon increases over the initial credit spread if the note is not called at a predetermined date, usually the first call date.	Step-up rates usually are capped at a level with regulatory approval. The step-up provision by itself generally will not impact the equity-like nature of the notes. Step-up provisions subject to regulatory approval and not legally binding may allow for some financial flexibility.
Deferral – Optional/ Mandatory	May be optional, which gives the issuer the option to defer interest payments on the notes, or mandatory where certain triggers will force deferral of interest payments or distributions.	The option to defer interest and principal payments, subject to regulatory approval, without triggering a default provides flexibility for the issuer. Mandatory deferral of interest payments and principal does not necessarily impact the equity-like characteristics, especially in cases where the issuer is in financial distress and has to maintain some form of minimum regulatory capital.
Cumulative/ Non-cumulative	*Cumulative:* Arrangements where coupon payments that have been accumulated can be paid at a later date. *Non-cumulative:* Arrangements where skipped coupon payments are canceled and not paid.	Non-cumulative provisions are more equity like compared with cumulative provisions. Cumulative notes based on the issuer's discretion and subject to regulatory approval provide issuers with flexibility and the ability for long-term planning.
Replacement Language	Generally describes how the note will be replaced at the call date. A more binding replacement language is the use of a replacement capital covenant by which the issuer is legally obligated to replace the notes with similar equity-like features to the benefit of senior creditors.	New instruments replacing the original issued notes should maintain the same equity characteristics as the replaced notes in terms being permanent capital and being subordinated to policyholders' claims, other beneficial claims and other senior debt. The dollar amount of the replacement instrument should equal that of the initial outstanding notes.
Alternative Payment Mechanism	Specifies how the issuer will settle omitted coupon payments – generally through the market issuance of securities (common stock, preferred shares, etc.).	Generally, alternative payment mechanisms may be positive, negative or neutral, depending on the new security type; time period; issuer's ability to control the issue date; and impact on default of the original issue.
Conversion	Specifies how the note will be converted to some form of equity, generally at a premium. This is generally at the option of the note holder. If converted to common stock, it increases the equity amount in the issuer's capital structure. Conversion may be optional or mandatory.	Notes with the option to convert into common stock at some future time simply become the equity of the issuer, and thus increase the equity amount in the capital structure. This may be viewed as a positive.
Default Event Language	Determines what constitute the occurrence of a default event, the issuer's obligations, and note holders' remedies during and after a default event.	Generally default event language, which covers interest and principal payments and is subject to regulatory oversight and force majeure situations, may provide some direction and flexibility. The impact of this provision may be neutral in most cases as to the equity features of the note.

of surplus notes to repair an unprofitable book of business. The rationale for this is that although capital has improved in the short run, the inherent defects in the book of business, if unaddressed, plus the added interest obligation, could create further problems for the troubled insurer.

Financial Guarantors

Surplus notes have been issued by new and active financial guaranty insurance companies, making the ratio of outstanding surplus notes to policyholders' surplus higher than for other property/casualty insurance issuers. The financial guaranty insurance business is characterized by upfront, nonrefundable premium, generating sizable unearned pre-

mium due to bonds/instruments with long-dated maturities (20-30 years); no loss payment acceleration – only interest and amortized principal payments are made; and high leverage reflecting the low-frequency/high-severity nature of the risks, with policyholders' surplus components being a backstop for periods of extremely high losses.

In addition to the unearned premium reserves and liability of the unpaid losses and loss-adjustment expenses, financial guaranty insurers are required by law to maintain a liability referred to statutory contingency reserves. The purpose of these reserves is to protect policyholders during periods of extreme economic contraction. Regulators generally have allowed surplus notes to be part of a financial guarantor's available capital, but with restrictions on interest and principal repayments because of the unique nature of this line of business. Historically, surplus notes have performed the role of equity capital with respect to permanence, with regulators stepping in to determine when interest and principal repayments can be made by the insurer, as well as subordination to policyholder claims for financial guarantors during both regular business cycles and stress periods. Start-up financial guarantee insurers with clean balance sheets and active financial guaranty insurers with profitable books of business can expect favorable treatment compared with active financial guaranty insurers that have deteriorating books of business.

Health Care Consumer Operated and Oriented Plans (CO-OPs)

The Consumer Operated and Oriented Plan (CO-OP) under the Patient Protection and Affordable Care Act creates a new type of nonprofit health insurer directed toward individuals and small-business customers. The CO-OPs must meet minimum capitalization requirements. Solvency loans to be offered by the federal government will provide the new CO-OPs with enough capital to not only comply with the statutory minimums but also be financially viable. A solvency loan will be repayable over 15 years at 2% below the average rate earned by Treasury securities. The solvency loan will be structured such that a CO-OP will pay no interest and principal until its net worth exceeds a certain threshold based on NAIC risk-based requirements, namely, a multiple of the authorized control level.

The design of the solvency loans takes on the characteristics of a capital instrument with high equity value content – namely requiring no ongoing payments at a minimum level or payments that could lead to distress or default; long-dated maturity creating a permanent capital component of the entity; and loss protection for claimants and other senior creditors. A.M. Best will view solvency loans as surplus notes when evaluating the capital structure of a CO-OP.

Insurance Start-Ups

New insurance entities (start-ups) with clean balance sheets (no business written), where the surplus notes are issued as part of the initial capital and exhibit high equity content features, will be treated positively by A.M. Best if the surplus notes are approved by the regulator in the issuer's state of domicile.

II. Treatment of Surplus Notes in BCAR

The baseline BCAR model initially deducts all surplus notes from the operating insurer's reported statutory surplus. After reviewing the surplus note's features and other qualitative considerations mentioned earlier, A.M. Best will determine how much capital credit should be given for the surplus note in the BCAR analysis. The maximum amount of capital credit that can be given in BCAR is 90% for third-party (externally held) notes and 95% credit for notes held by affiliates. The higher credit for notes held by affiliates is based on the assumption that affiliated companies would be more willing to

modify the terms of the original surplus note to prevent a credit event. A.M. Best views surplus notes as a permanent form of statutory capital, recognizing the regulatory protection in the event of adverse conditions. The maximum amount of capital credit granted in BCAR will be allowed for up to five years before the surplus note's stated maturity. Credit then will be reduced 20% per year on a straight-line basis until the surplus note reaches its maturity date. Reduced credit recognizes the fact that as maturity approaches, the notes represent less of a company's surplus as they must be repaid in full or substituted with other forms of capital at that time.

While the surplus note may receive substantial capital credit in the BCAR analysis of the operating insurer, the actual rating of the operating insurer may be limited by the evaluation of a number of factors, including volatility of earnings, financial leverage, financial coverage, operating performance, business profile and risk management. However, poor or negative coverage ratios would be reflected in the ratings of the operating insurer rather than the amount of credit the surplus note receives in BCAR.

III. Treatment in the Financial Leverage Calculation

Operating Insurance Companies

Financial leverage at an operating insurer is evaluated on an adjusted and unadjusted basis. On an adjusted basis, surplus notes in the operating company financial leverage calculation may receive equity capital credit equal to the credit the surplus note received in the BCAR calculation. The portion of the surplus note considered debt, plus preferred stock, plus any other borrowed money, is evaluated relative to capital. **Exhibit 2** illustrates A.M. Best's typical tolerance levels for adjusted financial leverage at an operating company. On an unadjusted basis, the entire amount of the surplus note, plus preferred stock, plus any other borrowed money, is evaluated relative to capital.

However, due to the regulatory framework and control that insurance regulators have over surplus notes, the determination of the rating will encompass an evaluation of other factors, which may supersede the adjusted and unadjusted leverage guidelines. These factors include interest coverage, quality of capital (recognizing the deep subordination and the regulatory control of surplus notes compared with straight debt), financial performance, business profile and risk management.

Non-Operating Holding Companies

When financial leverage is evaluated on a consolidated (non-operating) holding company basis, surplus notes receive zero equity credit because assets at a U.S. insurance operating company are not readily available to fulfill holding company obligations, given the control exercised by the insurance company's regulator.

Additionally, surplus notes held at an operating company within a holding company structure may be eliminated when consolidating financial data up to the holding company. However, any obligations to service surplus notes anywhere within the organization need to be reviewed as part of overall balance sheet strength.

Exhibit 2

Guidelines for Operating Company Financial Leverage

Issuer Credit Rating	(Borrowed Money + Preferred Stock + Surplus Notes (Debt Portion))/Capital
aaa	<25%
aa+	<35
aa/aa-	<50
a+/a/a-	<65
bbb+/bbb/bbb-	<80
bb+/bb/bb-	>80

IV. Rating the Surplus Notes

Ratings of surplus notes are notched from the published Issuer Credit Rating (ICR) of the operating

company. The notching reflects the subordination of the surplus note holders to the most senior creditors of the insurance company, the policyholders. For higher rated insurers, surplus note ratings are typically rated two or three notches below the operating company ICR. However, for issuers at the lower rating levels, notching between policyholder and surplus note obligations may be expanded as the ICR moves farther down the rating scale. The increase in notching at the lower ICR levels reflects the generally increased probability for regulatory intervention (see **Exhibit 3**).

Exhibit 3

Guidelines for Notching From Operating Company Issuer Credit Rating to Surplus Note

Issuer Credit Rating	Surplus Note
aaa/aa/a/a-	2 or 3
bbb+/bbb/bbb-	3 or 4
bb+ and below	5 or more

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Methodology

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Understanding BCAR for U.S. And Canadian Life/Health Insurers

The objective of A.M. Best Co.'s financial strength ratings is to provide an opinion of an insurer's financial strength and ability to meet its ongoing obligations to policyholders. The assignment of an interactive rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile, as compared with A.M. Best's quantitative and qualitative standards. A.M. Best's life/health BCAR model is designed to capture major life and health insurance risks of U.S. and Canadian life/health (L/H) companies and quantifies the level of capital needed to support them.

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing obligations to policyholders, the most important area to evaluate is its balance sheet strength, since it is the foundation for policyholder security. Performance then determines how that balance sheet strength will be enhanced, maintained or eroded over time. Balance sheet strength measures the exposure of a company's surplus to its operating and financial practices. A.M. Best's analysis also encompasses a thorough review, using various financial tests and ratios, of historical trends over a five-year period of a company's:

- Reported capital and surplus, including a comparison of the growth rate of statutory capital to the growth rate in assets and net premiums written;
- Exposure to various types of leverage, such as operating leverage (net premiums written to capital or capital to liabilities), financial leverage (debt and debt-like instruments to capital) and reinsurance leverage (reserves ceded to capital);
- Historical sources of growth in capital, such as operating gains, capital gains, capital contributions, etc.; and
- Quality and diversity of invested assets through a review of trends in asset allocations, exposure to higher-risk assets, and asset concentrations by class, issuer and industry.

Additional Information

Criteria:
Understanding Universal BCAR

Rating Members of Insurance Groups

A.M. Best's Perspective on Operating Leverage

Risk Management and the Rating Process for Insurance Companies

Insurance Holding Company And Debt Ratings

Equity Credit for Hybrid Securities

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This publication release updates the version issued April 22, 2015. Restructured mortgage loans are now reported in the AVR schedule of the annual statement, consistent with other mortgage loans. Total Risk charges on a restructured mortgage loan remains at 7%. Additionally, all references to "secure" and "vulnerable" ratings were removed.

Structural Overview – Best's Capital Adequacy Ratio

$$\text{BCAR} = \frac{\text{Adjusted Surplus}}{\text{Net Required Capital}}$$

Adjusted Surplus Components

Reported Surplus

Equity Adjustments
- Asset Valuation Reserves
- Unearned Premiums
- Dividends Payable

Debt Adjustments
- Surplus Notes

Other Adjustments
- Operating Losses
- IMR Amort.Following Year
- Off-Balance Sheet Derivatives
- Negative Reserves (Canada Only)

Net Required Capital (NRC) Components

(C-1-Non Eq)	Fixed Income Securities
(C-1-Eq)	Equity Securities
(C-2)	Mortality/Morbidity
(C-3-Int)	Interest Rate
(C-3-Mkt)	VA Market
(C-4)	Business

Covariance

$$\text{NRC} = \sqrt{(\text{C-1-Non Eq} + \text{C-3-Int})^2 + (\text{C-1-Eq} + \text{C-3-Mkt})^2 + (\text{C-2})^2} + \text{C-4}$$

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A.M. Best's assessment of balance sheet strength also includes an analysis of an organization's balance sheet under GAAP at both the operating insurance company and holding company levels.

The holding company analysis includes an assessment of the organization's consolidated capital structure, financial leverage, fixed-charge coverage (ratio of earnings or cash in relation to fixed charges, such as interest on debt) and other key ratios.

A.M. Best notes that although BCAR is an extremely useful tool in evaluating a company's balance sheet strength, it is only one component of that analysis. Although it is a valuable tool in the rating process, it is not the sole determinant of a rating assignment. In addition, balance sheet strength is only one component of the overall rating, which also includes operating performance and business profile. BCAR establishes a guideline to support a rating, but other factors driving expectations of future balance sheet strength drive the rating as well. All of these factors are important to the overall rating process.

Overview of BCAR

A.M. Best's life/health BCAR model computes required capital to support four broad risk categories: asset risk, insurance/underwriting risk, interest-rate/VA market risk and business risk. The BCAR model also contains an adjustment for covariance, reflecting the assumed statistical independence (mutually exclusive nature) of the individual components. A company's adjusted surplus is divided by its net required (risk-based) capital, after the covariance adjustment, to determine its BCAR score.

Structural Overview:

The BCAR ratio is one measure of a company's capital position and an integral component of an ongoing concern's rating. The BCAR model allows flexibility as an interactive tool; analysts can use discretion in making adjustments to the model based on their knowledge of the company. Such adjustments within A.M. Best's capital model provide a more economic and comparable basis for evaluating capital adequacy. They serve to level the playing field and compensate for certain economic values not reflected in regulatory (U.S. statutory and Canadian Life-1) financial statements. In addition, A.M. Best analysts may supplement their initial assessment of a company's baseline capital position by performing various sensitivity calculations. These analyses might incorporate the capital required to support future business plans; reflect the impact of pro forma transactions on the current capital position; or reflect changes in the business mix or investment portfolio. These sensitivity calculations help quantify the extent of the capital cushion or shortfall relative to a company's current rating level. The ability of the model to respond to these market issues makes it a robust tool that assists in the evaluation of the company's balance sheet strength.

Over time, A.M. Best will modify the BCAR model to enhance its accuracy in measuring balance sheet strength and operating risk. A.M. Best will continue to closely monitor industry experience, product trends and regulatory changes impacting the level of capital required to support life and health insurance company operations.

Integration of BCAR In the Rating Process

BCAR is an important quantitative tool that allows A.M. Best to differentiate the financial strength of companies and determine whether a company's capitalization is appropriate for its rating. However, BCAR is not the sole basis for determining a company's rating. In many cases, companies with similar risk-adjusted capital positions may be assigned different ratings based on the integration of other important considerations unique to each insurance company, such as operating performance and business profile.

In addition, the quality of capital may differentiate one rating from another, even though companies may have similar BCAR scores. Many soft capital transactions, for example, are admitted as surplus under statutory accounting rules but ultimately drain cash, place a drag on earnings or only provide contingent capital, thereby compromising policyholder security and negatively impacting financial strength.

Availability of BCAR Output

Because of the sensitive nature of the underlying adjustments and qualitative information incorporated in a company's BCAR calculation, detailed BCAR output for a particular company is made available only to that company's management. Often, a discussion of A.M. Best's capital model is included in rating meetings. Upon a rated entity's request, A.M. Best's analysts generally are available to run a limited number of scenarios to aid management in understanding the impact of their decisions on their BCAR and ultimately on A.M. Best's view of capital strength.

Technical Review of the BCAR Formula

A.M. Best's BCAR analysis is performed on a stand-alone basis as well as throughout various levels of insurance groups. In each risk category, capital charges are applied to key risks, then adjusted by a covariance formula to produce the required capital for these key risks. The BCAR result is the Adjusted Capital divided by the Required Capital. Companies deemed to have "adequate" balance sheet strength normally generate a BCAR score exceeding 110% and usually will carry a "B+" or better Financial Strength Rating.

Where detailed information is not readily available, A.M. Best will request the information directly from the company. For example, itemization by credit rating or National Association of Insurance Commissioners (NAIC) class for certain assets may not be available in the annual statements. A.M. Best's Supplemental Rating Questionnaire (SRQ) is used to collect more detailed information for inclusion in the BCAR model.

Treatment of Key Risk Components

C-1: Asset Risk

Capital charges are applied to asset classes based on the risk of default, illiquidity and market value declines. A.M. Best does not assign asset classes but uses those reported on the statutory statements as assigned by the NAIC's Capital Markets & Investment Analysis Office for U.S. life and health companies. For Canadian companies, A.M. Best relies on credit ratings assigned to assets.

Life/Health BCAR Guidelines

BCAR	Implied Balance Sheet Strength
175%	A++
160%	A+
145%	A
130%	A-
120%	B++
110%	B+
100%	B
90%	B-
80%	C++
70%	C+
60%	C
50%	C-
<50%	D

Source: A.M. Best Co.

Base Default Risk. Within the C-1 section, a company's investment portfolio is segregated by asset class. The major asset classes are bonds (short-term and long-term), preferred stock, common stock, mortgage loans, real estate and other invested assets. The model is updated as new asset categories emerge within the regulatory environment. Within each asset class, further distinctions reflect the varying levels of credit quality, liquidity and volatility within a particular class of assets. A.M. Best's risk factors were developed after reviewing industry default statistics and proprietary empirical data. Risk charges vary by the designated NAIC and credit rating classes and are applied to invested assets, adjusted for amounts that are assumed or ceded through funds withheld or modified coinsurance (MODCO) arrangements.

Exhibit 1
C-1 Asset Risks – Asset Categories Subject to Spread-of-Risk Factor

	Base RBC Factor	Other RBC Factor
BONDS (Including Short-Term): United States[1]		
AVR Exempt Obligations	0.0010	0.0015
NAIC Class 1	0.0080	0.0120
NAIC Class 2	0.0250	0.0375
NAIC Class 3	0.0600	0.0900
NAIC Class 4	0.1200	0.1800
NAIC Class 5	0.2500	0.3750
NAIC Class 6	0.3000	0.4500
Affiliated Bonds (additional risk charge)	0.2500	
PREFERRED STOCK:		
NAIC Class 1	0.0080	0.0120
NAIC Class 2	0.0250	0.0375
NAIC Class 3	0.0600	0.0900
NAIC Class 4	0.1200	0.1800
NAIC Class 5	0.2500	0.3750
NAIC Class 6	0.3000	0.4500
MORTGAGE LOANS		
Residential – Insured/Guaranteed	0.0030	0.0060
Residential – All Other (Non-Guaranteed)	0.0050	0.0360
Farm	0.0300	0.0600
Commercial – Insured/Guaranteed	0.0050	0.0600
Commercial – All Other (Non-Guaranteed)[2]	0.0500	0.2400
Restructured	0.0200	n/a
Other Unaffiliated	n/a	0.2400
60 Days Overdue	0.1500	n/a
Interest Due & Unpaid: 60 Days Overdue	1.0000	n/a
Taxes Due: 60 Days Overdue	1.0000	n/a
In Process of Foreclosure	0.2000	n/a
Interest Due & Unpaid: In Process of Foreclosure.	1.0000	n/a
Taxes Due: In Process of Foreclosure	1.0000	n/a
OTHER ASSETS		
Cash (Balance)	0.0015	n/a
Short-Term Investments – Excluding Bonds	0.0030	n/a
Premium Notes (Net Admitted)	0.1000	n/a

1. Canada Categories:
Government Obligations
Highest Quality – AAA to A-
High Quality – BBB+ to BBB-
Medium Quality – BB+ to BB-
Low Quality – B+ to B-
Lowest Quality – CCC+ to C
In or Near Default – D or Below
Affiliated
2. Subject to mortgage quality factor.
Source: A.M. Best Co.

Default risk charges applicable to unaffiliated preferred stock are the same as those applicable to bonds. This calculation assumes that investors expect preferred stock to perform like fixed-income securities with fairly stable valuations, and that the credit ratings will reflect the relative subordination within an issuer's capital structure.

Default risk factors applied to amounts reported as having similar characteristics to bonds and unaffiliated preferred stock, but not reported in standard fixed income schedules (i.e., Schedule D for U.S. companies), are 50% higher, assuming that these assets may be less liquid and have more price volatility than typical fixed-income assets.

For those companies that have a material amount of foreign investments in a particular investment category, the risk charge for that asset category may be increased to reflect the increase in volatility and/or decrease in liquidity associated with those foreign markets, financial systems and economies.

Mortgage Loans. Risk charges applied to mortgage loans vary based on the type of property and reflect the risk of inappropriate valuations. Residential loans backed by guarantees have slightly lower risk charges than those not guaranteed. Commercial mortgage loans have the highest charge, as these tend to have low liquidity. Additional risk charges are applied to amounts that are 60 days overdue or are in the process of foreclosure.

Mortgage Quality Factor. To reflect factors specific to an insurer's mortgage loan portfolio, A.M. Best's BCAR model adjusts the risk charges applicable to commercial mortgage loans using a weighted average of diversification and performance components. Diversification is determined by the type of mortgage as well as the geographical distribution of mortgages. Performance components include mortgages overdue, restructured or foreclosed, loan-to-market values, debt-service coverage and tracking of the current outstanding balance relative to the original issue balance. A.M. Best reviews current market conditions to determine weightings used in calculating a company's mortgage quality factor.

Cash and Short-Term Investments. Modest risk charges are applied to cash balances, reflecting the risk of insolvency of the banking institution. Slightly higher risk charges are applied to other assets expected to mature within one year.

Unaffiliated Common Stock. Risk charges applied to common stock reflect A.M. Best's view that life insurers have a longer term, buy-and-hold view compared with other insurers, which may have a shorter time horizon. Stock-market volatility with respect to unrealized gains and losses warrants higher capital charges when compared with other assets. Common stock holdings may include investments in Federal Home Loan Bank (FHLB) stock. FHLB holdings are shown as a separate component within unaffiliated common stock. FHLB stock exhibits characteristics similar to bonds, and there is government backing. FHLB stock is treated as having characteristics similar to medium- to high-quality bonds.

In addition to the base risk charges mentioned above, certain asset classes are subject to specific treatment in the BCAR model as explained below.

Treatment of Affiliated Investments. Charges on affiliated investments in bonds and stocks account for potential diminished liquidity and possible double leverage in the organization. Affiliated asset risk charges may be subject to adjustment based on the liquidity of the investment, for example if the investment is traded on a stock exchange and has a supportable market value. Independent, external valuations are reviewed by analysts to determine appropriate risk charges for affiliated, non-insurance, fixed-income or equity holdings.

If the company owns a large proportion of a publicly traded affiliate, regulatory or shareholder approval may be necessary before a sale, making it less liquid. Additionally, the sale of an affiliated investment in a stress situation could give the buyer leverage during the price negotiation, which may result in a realized value less than the reported value. The lower liquidity of these assets results in risk that resembles that of a privately held subsidiary.

Exhibit 2
C-1 Asset Risks – Asset Categories Exempt From Spread-of-Risk Factor

	RBC Factor[1]
PREFERRED STOCK	
Affiliated	1.000
COMMON STOCK	
Unaffiliated	0.300
Federal Home Loan Bank	0.050
Affiliated	1.000
REAL ESTATE	
Occupied by Company – Including Encumbrances	0.100
Held for Production of Income – Including Encumbrances	0.150
Held for Sale – Including Encumbrances	0.150
OTHER INVESTED ASSETS	
Common Stock:Unaffiliated	0.360
Common Stock: Affiliated	1.000
Total Real Estate: Schedule BA	0.240
Guaranteed Low-Income Housing Tax Credits	0.006
Non-guaranteed Low-Income Housing Tax Credits	0.060
Collateral Loans: Schedule BA	1.000
Other Invested Assets: Schedule BA	1.000
Other Invested Assets: Schedule DA All Other	1.000
REINSURANCE	
Recoverable-Paid Losses[2]	0.008
Recoverable-Unpaid Loss[2]	0.008
Unearned Premium Reserve Ceded[2]	0.008
Accident & Health Reserve Ceded[2]	0.008
Life & Annuity Reserve Ceded[2]	0.008
Reinsurance in Unauthorized Companies	-0.005
Funds Held With Unauthorized Reinsurers	-0.005
DERIVATIVES – Potential Exposure	
Exchange-Traded	0.002
Class 1 Category	0.016
Derivative FV Collateral	0.016
Class 2 Category	0.050
Class 3 Category	0.120
Class 4 Category	0.240
Class 5 Category	0.500
Class 6 Category	0.750
High-Risk Collateralized Mortgage Obligations	0.150
OTHER ASSETS – Miscellaneous	
Derivatives Not Included Above	0.100
Aggregate Write-Ins Invested Assets	0.100
Receivables-Uninsured Plans	0.050
EDP Equipment and Software	0.100
Furniture & Equipment	0.100
Health Care Receivables	0.050
Corporate-Owned Life Insurance – Write-In Asset	0.008
Aggregate Write-Ins Other Than Invested Assets (excl. COLI)	0.100

1. Risk charges applicable to similar assets held in separate accounts.
2. May be subject to reinsurance dependence factor.

The initial risk charge for non-insurance affiliates is the statutory carrying value, i.e., a 100% capital charge. A.M. Best assumes the net asset value of the affiliate is needed to support its own operations and is not available to support the insurance operations. Risk charges may be subject to adjustment pending analysts' review.

For life insurance affiliates, subgroup BCAR models may be created to determine the impact of subsidiary capital positions on the parent company. Such subgroups reflect eliminating entries that typically would be made only at the ultimate parent level.

For property/casualty (P/C) affiliates, the net required P/C BCAR capital is added to the parent company's required capital in the L/H BCAR model.

Spread-of-Risk Factor. The asset risk assessed for each insurer also is subject to a spread-of-risk (SOR) factor, based on the relative size of the investable portfolio. The spread of risk is a sliding-scale factor that is applied to the aggregate, nonaffiliated investments in bonds, preferred stock, mortgages, cash and short-term investments. The asset portfolio is adjusted to reflect the impact of funds withheld and/or MODCO reinsurance arrangements. Assets assumed under these arrangements will increase the base used in determining the factor, while assets ceded will decrease the asset base. This approach coincides with the assumption of the transfer of risks in the underlying reinsurance treaties. Asset classes with higher risk charges (common stock, real estate and assets reported in Schedule BA) are excluded from the SOR, as their original risk charges sufficiently cover the risks inherent in these assets.

The SOR factor decreases as the portfolio of qualifying assets increases, reflecting the ability of a larger organization to diversify its risk across a broader range of issuers and asset classes. By applying the SOR factor to this pool of qualifying assets, A.M. Best recognizes the benefits of dispersing risk across all major asset classes. The SOR factor in the BCAR model is calculated for each entity based on its asset size, as well as for each group/rating unit or other composite based on the aggregate asset size. For analytical purposes, the stand-alone SOR factor for each entity is used for purposes of stand-alone risk assessments. Companies that are members of groups with common investment management may receive the benefit of a lower SOR factor based on aggregate assets of the group, at the discretion of the analysts.

Concentration Risk. A.M. Best's BCAR model applies increased risk factors to investments that exceed 10% of the company's reported capital and surplus including the asset valuation reserve (AVR). The additional charge is assessed only on that portion of the investment exceeding the 10% limit.

Separate Accounts. Assets backing guaranteed interest liabilities held in separate accounts are assessed risk charges similar to those applied to assets backing general account guarantees. Assets backing guaranteed interest contracts held in Canadian segregated accounts are included in the reported invested assets, sorted by credit rating with appropriate risk charges assessed. These risk charges assume the company bears risk through crediting rate guarantees on these liabilities. It is important to note, however, that separate-account assets will not be included in the invested asset total used to determine SOR factors, and the SOR factor will not be applied to these risk charges.

Other Invested Assets. Other assets with characteristics of common stock are assessed risk charges that are higher than the baseline common stock charge to reflect the fact that these investments may be more difficult to value and may have lower liquidity since they are not traded on a known exchange. Higher risk charges also are applied to other real estate assets for similar reasons (valuation and liquidity). All other invested assets reported in Schedules BA and DA of the NAIC Annual Statement are reviewed by the analyst to determine the proper risk charge to apply to these assets. As other asset classes emerge, A.M. Best's BCAR model will reflect these classes along with appropriate risk charges. Various types of tax-favored assets related to low-income housing, for example, have been added to insurance companies' portfolios in recent years. The BCAR model assesses higher risk charges to those assets that are non-guaranteed versus those that have guarantees.

Reinsurance Risk Charges. The BCAR model assesses risk charges to reinsurance amounts recoverable and to reserves ceded to reflect the credit risk of specific reinsurers.

Risk charges are applicable only to those amounts related to unaffiliated companies. The life reinsurance market is dominated by mostly highly rated companies, and as such, the average credit quality of reinsurers is assumed to approximate that of Class 1 bonds. Lower credits against such risks are given to amounts ceded to unauthorized reinsurers when the direct writer retains assets, as in funds-withheld or MODCO arrangements. The credit is subject to adjustment by the analyst following a review of the company's largest exposures to unauthorized reinsurers. A.M. Best requests additional information in its Supplemental Rating Questionnaire (SRQ) to aid analysts in assessing concentration risk and counterparty risk for a company's largest exposures.

A.M. Best is concerned with companies that may be overly dependent on reinsurance. The BCAR captures reinsurance dependency using a reinsurance leverage ratio, defined as the reinsurance ceded reserves and recoverables divided by capital and surplus. The base reinsurance risk charge is increased on a graded basis for companies having a reinsurance leverage ratio of 500% or more and is capped for reinsurance leverage ratios in excess of 900%.

Derivatives/High-Risk Collateralized Mortgage Obligations (CMOs). Risk charges for derivatives are based on the reported NAIC class; however, amounts held as acceptable collateral are treated as Class 1 assets, with the balance of the exposure based on reported NAIC risk classes. Risk charges applied are higher than for typical fixed-income assets because of the volatility and liquidity issues. The BCAR model also applies additional risk charges to higher risk CMO assets. These assets are typically held in tranches that are of lower priority and thus bear characteristics of equity-type investments.

Other Miscellaneous Assets. Risk charges are assessed for write-in assets (net of amounts reported as derivatives), admitted portions of furniture, equipment and electronic data processing (EDP) assets and for receivables related to reinsurance arrangements and health-care plans. The baseline risk charge applied to write-in assets is 10%. However, certain write-in assets with lower risk characteristics may be assessed lower charges. Corporate-owned life insurance (COLI) policies typically reported as write-in invested assets, for example, are subject to risk charges of 0.8%, reflecting the higher quality of insurance carriers that sell these products. Higher charges may be applied depending on the credit quality of the counterparties involved. A 5% risk charge is applied to reinsurance and health-care receivables, as well as to admitted portions of furniture, equipment and EDP assets.

C-2: Mortality and Morbidity (Insurance) Risk

The insurance risk capital charges are based on the integration of the risk inherent in a particular line of business and the company's size. The BCAR divides insurance risks into mortality and morbidity components. Mortality risks are assessed based on volume of insurance, net of reserves and reinsurance, with risk charges graded lower for higher volumes. These charges reflect the surplus needed for excess claims and pricing or reserve inaccuracies. Federal Employees' and Servicemembers' Group Life Insurance (FEGLI/SGLI) risk charges are assessed based on the lowest risk charge for group life business, reflecting the high volume of business and its concentration in a few large carriers.

A.M. Best capital charges for morbidity risks are determined by a detailed evaluation of the risks of different accident-and-health business lines, premium inflation and the quality of reserves. The risk profiles of certain individual and group health lines are substantially different, with the individual lines generally bearing higher risk. Risk charges are applied to net earned premiums, reflecting the benefits of scale for certain lines of business. For

Exhibit 3
C-2 – Mortality/Morbidity Risk

	RBC Formula/Factor*
MORTALITY (United States & Canada)	
Industrial Life In-Force (Less) Indust. Life Reserve= Industrial Life Net Amount at Risk	0.0015 for 1st 500m, 0.0010 next 4500m, 0.00075 next 20000m, 0.0006 over 25000m
Ordinary Life In-Force (Less) Ord. Life Reserve (Less) Ord. Variable Life Reserve= Ordinary Life Net Amount at Risk	0.0015 for 1st 500m, 0.0010 next 4500m, 0.00075 next 20000m, 0.0006 over 25000m
Credit Life In-Force (Less) Credit Life Reserve= Credit Life Net Amount at Risk	0.0012 for 1st 500m, 0.0008 next 4500m, 0.0006 next 20000m, 0.0005 over 25000m
Group Life In-Force (Less) FEGLI/SEGLI In-Force (Less) Group Life Reserve (Less) Group Variable Life Reserve= Group Life Net Amount at Risk	0.0012 for 1st 500m, 0.0008 next 4500m, 0.0006 next 20000m, 0.0005 over 25000m
FEGLI/SEGLI In-Force	0.0005
*Mortality risk charges calculated net of reinsurance	
MORBIDITY (United States)	
Individual Accident & Health:	
Hospital & Major Medical**	0.25 for 1st 50m 0.15 thereafter
Hospital Indemnity/Accidental Death & Dismemberment	0.08
Medicare Supplement**	0.12 for 1st 50m 0.07 thereafter
Medicare Choice**	0.20 for 1st 75m 0.125 thereafter
Medicaid**	0.20 for 1st 50m 0.125 thereafter
Medicare Part D**	0.11 for 1st 50m 0.07 thereafter
Medicare Part D Supplemental Benefits	0.35
Fee-for-Service	0.01
Disability – Non Cancellable	0.45 for 1st 50m 0.20 thereafter
Disability – Other	0.30 for 1st 50m 0.10 thereafter
Long-Term Care	0.30 for 1st 50m 0.18 thereafter
Dread Disease	0.12
Group Accident & Health:	
Hospital & Major Medical**	0.15 for 1st 75m 0.09 thereafter
Hospital Indemnity/Accidental Death & Dismemberment	0.08
Federal Employee Health Benefit Plans	0.05
Dental**	0.12 for 1st 25m 0.076 thereafter
Vision	0.10 for 1st 25m 0.06 thereafter
Disability – Long-term	0.20 for 1st 50m 0.05 thereafter
Disability – Short-term	0.07 for 1st 50m 0.05 thereafter
Long-Term Care	0.25 for 1st 50m 0.15 thereafter
Dread Disease	0.12
Stop Loss & Minimum Premium	0.30 for 1st 100m 0.25 thereafter
Limited Benefit	0.15
Student	0.10
**Risk charges adjusted for claims experience	
Credit:	
Credit Accident & Health	0.12
Other:	
Premium Equivalent – Administrative Services Only/Stop Loss	0.005
Workers' Compensation Carve-Out Liability	0.386
Other Claim Liability	0.050
Workers' Compensation Carve-Out Premium	0.400
Other Premiums Not Allocated	0.300 for 1st 50m 0.180 thereafter

Note: Managed Care Credit adjusted for provider contract arrangements may apply (Health companies only).

(continued on page 9)

U.S. health lines of business, company-specific claims experience is utilized for the risk exposures of hospital and major medical, Medicare (including Medicare+Choice, Medicare Supplement and Medicare Part D), Medicaid and dental lines of business. Claims experience may result in risk charges of between 80% and 120% of the baseline risk charges for these lines of business. A.M. Best continues to monitor claims experience for all health insurance lines of business. In addition, the range of net risk charges may be modified based on future claims experience.

Other Risks. Morbidity risk charges also apply to administrative service premium equivalents. Although little morbidity risk generally is associated with premium equivalents, these charges reflect A.M. Best's view of the capital needed to support the significant investment required in technology and systems for this administrative fee-based business. The BCAR model also applies risk charges for workers' compensation carve- out premiums and reserves.

Claim Liabilities. Claim reserve levels on accident and health (A&H) products also are given considerable attention as another exposure on the balance sheet. Risk charges are established to cover the possibility of negative reserve development due to adverse claims experience. In addition, A.M. Best reviews historical reserve development and current reserve margins above any third-party estimate. A.M. Best also evaluates a company's policy for the desired level of margin and premium-stabilization funds and whether these percentages are maintained consistently.

Credit Charge for Provider Contract Arrangements. This charge reflects the risk a managed care organization (MCO) faces when making capitation payments to providers and intermediaries that don't provide the insured member with the agreed-upon services. Additionally, in this case, the (MCO) might incur additional, unforeseen costs in arranging for alternative services coverage for its insured.

Managed Care Credit. This credit reflects the reduction in the overall premium risk charge for companies with managed care arrangements that reduce uncertainty regarding future claim payments. This credit is reduced for the risk that the MCO will pay the capitation to a provider but not receive the agreed-upon services and will encounter unexpected expenses in arranging for alternative coverage. The credit risk charge is based on the contractual relationship between the MCO and a provider. Higher credit risk charges apply to capitation payments made to unaffiliated or third-party care providers than to capitation payments made to affiliated care providers. In the case of capitation arrangements backed by letters of credit or funds-withheld treaties, analysts will review such arrangements to determine any credit-risk reductions.

Exhibit 3

C-2 – Mortality/Morbidity Risk *(continued)*

	RBC Formula/Factor
MORBIDITY (Canada)	
Individual Accident & Sickness:	
All Noncancellable A&H	0.55 for 1st 50m 0.25 thereafter
Accidental Death & Dismemberment	0.08
Medical	0.12
Dental	0.12
Income Replacement Cancellable	0.15
Other	0.25 for 1st 25m 0.15 thereafter
Group Accident & Sickness:	
Medical	0.12
Accidental Death & Dismemberment	0.08
Dental	0.12
Income Replacement	0.15
Other	0.15 for 1st 50m 0.07 thereafter
Creditor Disability:	
Creditor Disability	0.12
Property/Casualty	0.50
Other:	
A&S Claim Reserves	0.05
A&S Claim Reserves (Life-1 less above amount)	0.05
Property/Casualty Reserves	0.40

Source: A.M. Best Co.

C-3: Interest Rate/VA Market Risk

A.M. Best's BCAR model includes risk charges for interest-rate risks on fixed annuities and for market risks on variable annuities. Risk charges reflect changes in interest rates, including the potential impact of asset/liability mismatches. Risk charges also are assessed to reflect the impact of changes in equity markets and volatility on variable annuities with living benefit guarantees sold by U.S. companies.

Interest-Rate Risk. The C-3 interest risk charges are based on the level of reserves in both annuity and life insurance products. Risk charges on annuity reserves vary by withdrawal characteristics, surrender-charge expiration and the insurer's ability to make market-value adjustments to the crediting rates.

Each of these characteristics allows the insurer to better manage its investment portfolio relative to its liabilities, thereby limiting capital risks. The level of surrender charge protection is the primary factor in determining interest-rate risk for fixed deferred annuities. Annuities with market-value adjustment (MVA) features, in addition to surrender-charge protection, are assessed slightly lower capital charges in the BCAR model. MVA features provide better matching of assets to liabilities when policies are surrendered; however, it is assumed that surrender charge protection is the primary driver of policyholders' behavior. Contracts with MVAs are segregated by year-of-surrender charge protection, rather than based on the MVA protection period. Lower interest rate risk charges are applied to life insurance reserves (net of policy loans), as these liabilities tend to be less interest rate sensitive.

Exhibit 4
C-3 Interest/VA Market Risk

INTEREST RATE RISK

	RBC Factor
GENERAL ACCOUNT/SEPARATE (SEGREGATED) ACCOUNT ANNUITIES	
1. Not Subject to Discretionary Withdrawal:	
- General Account Individual Annuities Excluding Structured Settlements	0.0075
- Separate Account & Segregated Account Individual & Group Annuities	0.0075
- Structured Settlements	0.0175
- G/A Guaranteed Investment, Experience Rated & Index Group Pensions	0.0150
- All Other General Account Group	0.0150
- General Account Liabilities Maturing in 1 Year	0.0100
2. Subject to Discretionary Withdrawal With Market Value Adjustments:	
Individual and Group Annuities	
- Surrender Charges Expiring in 1 Year	0.0165
- Surrender Charges Expiring in 2 Years	0.0100
- Surrender Charges Expiring in 3 Years	0.0085
- Surrender Charges Expiring After 3 Years	0.0075
3. Subject to Discretionary Withdrawal With Surrender Charges > 1%:	
Individual and Group Annuities	
- Surrender Charges Expiring in 1 Year	0.0235
- Surrender Charges Expiring in 2 Years	0.0175
- Surrender Charges Expiring in 3 Years	0.0160
- Surrender Charges Expiring after 3 Years	0.0150
4. Subject to Discretionary Withdrawal With NO Surrender Charges:	
- Individual and Group Annuities	0.0300
LIFE INSURANCE RESERVES (Net of Policy Loans)	
Non-Interest-Sensitive Reserves	0.0050
Interest-Sensitive Reserves	0.0050

VA MARKET RISK:

C-3 PHASE 2 AMOUNT (From Supplemental Rating Questionnaire), PLUS, ADDITIONAL RBC - Margin applied to assets used in C-3 Phase 2 testing*	
* Margin based on risk profile as determined by analysts. Current margins as follows:	
Low Risk	10 basis points (.10%)
Medium Risk	25 basis points (.25%)
High Risk	50 basis points (.50%)

(Margins subject to change based on market conditions.)
Source: A.M. Best Co.

VA Market Risk. The market risk captures the required capital for variable annuities with living benefit guarantees sold by U.S. companies under the NAIC C-3 Phase II rules. With policyholders bearing most of the risk of variable annuities without secondary guarantees, the risks of variable annuity guaranteed death benefits and living benefits are assessed market risk charges. A.M. Best determines an asset-based margin to be added to each company's C-3 Phase II results. The margin depends on the risk profile of the block of business based on factors such as the level of benefits guaranteed, extreme tail risks, risk-mitigation techniques and fund mix. Extreme tail risk can be viewed by analysts through information requested in the SRQ. C-3 Phase II requires companies to hold capital using a conditional tail expectation (CTE) 90 metric (average of the worst 10% of scenarios). Through the SRQ, companies are requested to provide CTE 98 (average of the worst 2% of scenarios) results to provide analysts a better view of extreme tail risks. A.M. Best assesses an additional asset-based charge of 0.10% to low-risk companies, 0.25% to medium-risk companies and 0.50% to high-risk companies. The risk profile is determined by the analysts for each company. In addition to tail risk, equity-market volatility, interest rates and hedge effectiveness are considerations for assessing the overall risk profile of a variable annuity book of business.

C-4: Business Risk

The C-4 charges represent the numerous general business risks of a life and health insurance company, including risks posed by the legal, regulatory and competitive environments. The C-4 charges recognize the other general business risks by charges assessed on life and annuity premiums, net of variable annuity premiums. A.M. Best has employed this approach because policyholders bear most of the risk for variable products without secondary guarantees. Risks of variable annuity guaranteed death benefits and living benefits borne by the insurance companies are accounted for in the C-3 section of the

Exhibit 5
C-4 – Business Risk

Component	RBC Factor
Life & Annuity Premiums/Deposits (Net of Variable Premiums)	0.0200
Accident & Health Premiums	0.0075
Noncontrolled Assets	0.0050
Contingent Commitments	0.0150
Separate/Segregated Account Assets	0.0020
Unfunded Pension Plan Obligations	1.0000
Unfunded Other Post-Employment Benefit Obligations	1.0000

Source: A.M. Best Co.

BCAR model via the C-3 Phase II requirements. Risk charges also are assessed on A&H and health maintenance organization (HMO) premiums.

The C-4 section includes charges for off-balance-sheet items whereby the insurer does not retain control of assets. These generally are reported in the General Interrogatory section of the annual statement and may be part of securities lending programs. Risk charges applicable to noncontrolled assets (securities loaned, pledged as collateral, etc.) are assessed a risk charge of 0.50%, subject to analyst review.

Contingent Commitments. BCAR assesses capital charges on contingent commitments as well as on other noncontrolled assets. Contingent commitments include guarantees for the benefit of affiliates and commitments to joint ventures, partnerships or limited liability companies. Risk charges applicable to contingent commitments will be 1.50%.

Separate/(Segregated) Accounts. With market risks associated with variable annuity guarantees accounted for in the C-3 section, the risk charge applicable to separate-account assets is a flat 0.2%. This charge accounts for the business risks associated with separate accounts because of the increased complexity of products offered,ongoing suitability issues and administrative challenges associated with separate-account businesses.

Pension and Other Post-Employment Obligations. Pension plans and other post-employment/retirement obligations will be charged for the unfunded portion of these obligations in the baseline calculation of required capital for business risk. However, this amount can be reduced for any liabilities already shown on the company's balance sheet that are designated for the unfunded portion of these obligations. The amount of an unfunded obligation may also be reduced to reflect the company's planned annual reduction of the remaining unfunded obligations. For those companies whose unfunded obligations reside at an affiliated company, the company's share of the unfunded obligation will not be factored directly into the company's BCAR analysis, but will be factored into the rating discussion.

Required Capital

Covariance. The covariance formula used in the BCAR calculation reflects the independence of risks associated with fixed-income assets and liabilities,and risks associated with equities and variable liabilities. To reflect insurers' risk profiles,fixed-income C-1 asset-risk charges are correlated with C-3 interest-rate risks,and C-1 equity-type risk charges are correlated with C-3 market risks.

Adjusted Capital and Surplus

In the calculation of a company's BCAR score, the aggregate required capital (after applying the covariance adjustment) is compared with adjusted capital and surplus. Reported capital and surplus plus the asset-valuation reserve and other conditional reserves are the starting point for adjusted capital and surplus. This starting point then is adjusted for the current year's amortization of the interest-maintenance reserve, a credit for a portion of unearned premium reserves and credit for 50% of the dividends scheduled to be paid in the following year.

Exhibit 6
Adjusted Capital & Surplus

	RBC Factor
Stmt. Capital & Surplus	1.00
AVR	1.00
Unearned Premium Reserve	0.10
Dividend Payable	0.50
Negative Reserves (Canada Only)	1.00
Operating Losses	1.00
IMR: Following Year Amortization	1.00
Surplus Notes	0.90/0.95*
Derivatives-Off Bal.Sheet Risk	0.10

* Maximum credit allowed (see page 12)
Source: A.M. Best Co.

The BCAR model emphasizes the permanent capital of an organization and will reduce a company's capital and surplus for any encumbered capital, including haircuts to surplus notes, anticipated repayment of financial reinsurance or capital deficiency to support a subsidiary's rating. Within the Canadian capital model, goodwill and other intangible assets are eliminated from capital and surplus.

Operating Losses. A company's reported capital and surplus generally is reduced for operating losses, assuming that such losses would recur in the following year. Given the cyclical nature of certain lines of business, however, A.M. Best recognizes that certain operations within the insurance company can support other business lines in different economic environments. Therefore, capital is reduced only if there is a net operating loss for the company in total, allowing gains in one line to offset losses in another. This assumes that sustained profitability and operating contributions to surplus are crucial components of long-term capital adequacy. It also should be noted that any reduction caused by operating losses can be modified by the analyst for one-time or nonrecurring items that impact operating results.

Negative Reserves (Canada Only). The BCAR model deducts/non-admits negative reserves from capital and surplus. Negative reserves arise due to valuation standards in Canada that make allowances for initial acquisition costs in the reserve calculation. A.M. Best's BCAR model treatment considers that these reserves run off over time and that increases in surrenders can accelerate this run off; thus, the resulting asset is not considered permanent capital but rather a timing difference due to valuation methods. In addition, negative reserve amounts may increase if experience warrants changing assumptions when determining these reserves.

Surplus Notes. The BCAR model initially deducts all surplus notes from capital and surplus. Assuming that surplus notes exhibit equity-like features, equity credit may be given if such features are present. The maximum equity credit for surplus notes is 90% for third-party (externally held) notes and 95% for notes held by affiliates. Maximum equity credit will be allowed for the period up to five years prior to the notes' stated maturity. Equity credit thereafter will be reduced 20% per year (on a straight-line basis) until the notes mature. This assumes that as surplus notes approach maturity, they become more debt-like, thus warranting reduced equity credit.

Derivatives. A.M. Best's BCAR model adjusts capital and surplus for potential exposure to off-balance-sheet derivatives by deducting 10% of the amount of such exposure from reported capital and surplus.

Stress Tests. With dramatic changes in market conditions impacting what were considered stable fixed-income assets, substantial unrealized losses due to widening credit spreads and other factors impacting credit quality have affected insurers' balance sheets. A.M. Best's BCAR model reflects various stress tests measuring the impact of unrealized losses on an after-tax basis should they become realized losses. One such stress test assumes that unrealized losses are capped at 15% of capital and surplus.

Another stress test looks at BCAR levels assuming 15% of such unrealized losses will become realized, if such amount exceeds 15% of capital and surplus. As an extreme stress test, the entire loss is assumed to become realized. The stress tests will be used only for internal analysis and will not impact the final published BCAR score. Information for the stress tests is based on fair values shown for bonds and preferred stocks in the annual statement. The values reported are net of any unrealized gain positions in those portfolios. No credit is given, however, to aggregate gains reported from the interrogatory. Analysts' discussions with companies include potential cash flows and liquidity in the event extreme losses become realized.

The BCAR model contains two additional stress tests related to C-1 asset risks. The first stress applies higher charges to Class 1 and 2 bonds, as well as higher charges to commercial mortgages. Class 1 bonds in effect are charged 1% (vs. 0.8%), Class 2 bonds are charged 3% (vs. 2.5%), and mortgages are charged 6% (vs. 5%). This test is being performed as the NAIC has undergone a process that re-rates securities. Under these methods, several assets in lower rating classes may be re-rated as Class 1 or 2 assets. The stress reflects the"dilutive" impact of the re-rated assets and the fact that the NAIC methods may change. Commercial mortgages are stressed when increased delinquencies emerge in the market.

The second stress test treats non-agency residential mortgage-backed securities (RMBS) rated Class 1-4 as other bonds, which receive a 50% higher risk charge. These securities were re-rated based on PIMCO's pricing criteria. The higher charges reflect the fact that under the new valuation process, the values will be more volatile because of changes in assumptions and the fact that RMBS assets remain less liquid in today's market conditions.

Other. Analysts may consider making other adjustments to reflect financial accounting distortions or qualitative issues that might affect a particular company's prospective capital needs. This flexibility is necessary to meet A.M. Best's objective of providing a relative assessment of capitalization and financial strength as part of a comprehensive rating analysis.

Special-Purpose Life Insurance Captive BCAR Treatment

As more states allow the establishment of captives, life insurers continue to set up special-purpose captives. In addition, the role of life insurance captives is growing as companies are expanding the use of these vehicles. Initially, captives were used predominantly to fund redundant reserves associated with Regulation XXX (and AXXX), thus supporting increased levels of sales of term and universal life (UL) products with secondary guarantees. While such transactions continue, A.M. Best notes that captives are being established for other purposes, including the transfer of volatile reserves required for variable annuities. A.M. Best continues to monitor the evolution of XXX and AXXX solutions, along with other evolving uses of captives and the impact on direct writers' capital strength (in terms of operating leverage, etc.). As part of A.M. Best's standard review of an entity's financial strength, the impact on BCAR, along with other capital ratios from such transactions, is assessed.

A.M. Best's Perspective

For A.M. Best to properly review the relationship between a captive and the direct writer, and to provide for appropriate treatment in the BCAR model, A.M. Best reviews the structure of the transaction and the schematics of the organizational structure/capital structure of the captive. In addition, A.M. Best reviews terms and provisions of any guarantees to determine other risks present in these transactions. To the extent that additional analysis of the nature of reserve sensitivities or transaction structure by external parties is available, A.M. Best takes this under consideration.

Treatment of any related debt as financial or operating leverage also is reviewed.

Captive Capitalization

A.M. Best reviews the capitalization of the captive entity on an ongoing basis. For domestic captives, a BCAR is calculated from the statutory filings on a stand-alone basis. In the initial seeding of the company, capital in many cases is funded primarily with long-term surplus notes, which are given substantial equity credit in A.M. Best's BCAR model, given their long-term duration.

Assuming A.M. Best is comfortable with the stress testing; the structure and assumptions used in the transaction; and the stand-alone BCAR of the captive, no additional charges will be made to the ceding company's published BCAR. A consolidated BCAR, which would be used for internal analytical purposes, also will be reviewed and will factor in the captive's results in the consolidation. This allows A.M. Best to view the consolidated entity's risk-adjusted capital position, including the impact of securitization of redundant reserves.

A.M. Best does not anticipate negative rating impacts from securitization activity, which generally has been nonrecourse and has been used as a vehicle for regulatory relief. However, excessive use of securitizations would necessitate a review of the group's overall capital structure, risk appetite and risk management process. As securitization is viewed as a means to write more business than a company's capital otherwise would permit, a review is necessary similar to excessive use of reinsurance or other forms of leverage. If the requested data are not

received, A.M. Best will take a more conservative view of the direct writer's and the group's risk-adjusted capitalization, which may result in a negative impact on the rating.

Conclusion

The tools to better allocate capital and understand capital strength continue to evolve. These tools vary in theory, purpose and outcome. A.M. Best's proprietary BCAR tool looks at capital requirements well above financial solvency. A.M. Best will continue to enhance BCAR to improve its accuracy in measuring balance sheet strength and operating risk.

BCAR is important to A.M. Best's evaluation of both absolute and relative capital strength. Consistent with standards embedded within the BCAR model, it is generally the case that well-managed and highly rated companies will maintain capitalization levels in excess of the guideline amounts implied given their current ratings.

A.M. Best cautions that although BCAR is an important tool in the rating process, it is not the sole basis of a rating assignment. Consequently, capital adequacy should be considered within the context of the operating and strategic issues surrounding a company. The BCAR model is intended to reflect the risks present in today's environment, as well as to facilitate consistency with regulatory capital models and other models A.M. Best uses. A.M. Best will continue to closely monitor industry experience, product trends and regulatory changes impacting the level of capital required to support life and health insurance companies' operations.

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A.M. Best's Stress Liquidity Ratio For U.S. Life Insurers

As part of its standard analytical review of all companies, A.M. Best has detailed discussions about management of liquidity risk. A.M. Best believes that the measurement of a company's liquidity is one of the most important factors in determining a life insurer's financial strength. Fundamentally, the liquidity profile of a company can be assessed by reviewing the nature and duration of its assets and liabilities, which in turn drives the inherent nature of the liquidity risk. A.M. Best's liquidity analysis includes a holistic and comprehensive approach that examines liquidity at both the operating and holding company/consolidated levels. The analysis should include plans as to how the company would react in a stressed scenario of immediate and material cash demands.

A review of liquidity resources (sources and uses of cash) at the holding company is fundamental. Since the insurance entities are often the primary sources for debt servicing at the holding company, liquidity analysis is already part of A.M. Best's process of assigning issuer credit and debt ratings. Liquidity triggers, such as material adverse change clauses, covenants or other restrictions, also are examined and factored into the overall liquidity analysis. At the operating company level, A.M. Best historically has published current and quick liquidity ratios, which were common means of assessing a company's liquidity. These ratios appear in a variety of A.M. Best's publications but represent just a sample of the measures used in assessing liquidity.

Over the past several years, the complexity of insurance products has grown, and insurers have continued to stretch for yield in a prolonged low-interest-rate environment. This increased appetite for higher yielding assets may conflict with the need for adequate liquidity to cover the liabilities for which these assets are matched. "Putable" features have become common in variable annuities, while the ongoing use of "bonus" rates entices consumers to surrender policies early to gain better near-term crediting rates on fixed annuities. Products such as guaranteed investment contracts (GICs) and putable funding agreements, while not as prominent as they once were, can represent a significant portion of an insurer's liabilities. As a result, A.M. Best has continued to look for ways to refine its liquidity analysis to reflect these concerns.

Key Liquidity Measures for Life Companies

- **Current Liquidity –** Measures the proportion of liabilities (excluding asset valuation reserve [AVR], conditional reserves and separate account liabilities) covered by cash and unaffiliated holdings, excluding mortgages and real estate.
- **Quick Liquidity –** Measures the proportion of liabilities (excluding AVR, conditional reserves and separate account liabilities) covered by cash and investments that can be converted quickly to cash.
- **Non-Investment Grade Bonds to Capital –** Sum of NAIC Class 3, 4, 5 and 6 bonds as a percentage of capital and surplus funds.
- **Delinquent and Foreclosed Mortgages to Capital –** The sum of long-term mortgages upon which interest is overdue more than three months, in process of foreclosure and real estate owned via foreclosure as a percentage of capital and surplus funds (including AVR).
- **Affiliated Investments to Capital –** Affiliated investments (including home office property) as a percentage of capital and surplus funds (including AVR).
- **Mortgages/Credit Loans/Real Estate to Invested Assets –** Mortgage loans, credit tenant loans and real estate as a percentage of capital and surplus funds (including AVR).

Additional Information

Criteria:
Understanding BCAR for Life/Health Insurers

Insurance Holding Company and Debt Ratings

Analyzing Insurance Holding Company Liquidity

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Exhibit 1
A.M. Best's Stress Liquidity Ratio for U.S. Life Insurers – Asset Factors

	Short Term (30 days)	Longer Term (6-12 months)
Cash	100%	100%
Cash Equivalents	100	100
U.S. Government Securities	100	100
Investment-Grade Corporate Bonds Public excl. Affiliates	75	90
Investment-Grade Corporate Bonds Private excl. Affiliates	45	65
Class 3 Category Public excl. Affiliates	0	20
Class 3 Category Private excl. Affiliates	0	10
Public Pass-Through	90	95
Private Pass-Through	0	70
CMO:		
VADM, PAC, TAC	80	90
Sequentials	70	80
Z Tranches	0	15
Other	0	0
Residential Mortgage-Backed Securities	40	50
Commercial Mortgage-Backed Securities	70	80
Other Loan-Backed and Structured Securities	60	70
Unaffiliated Common Stock Public incl. Mutual Funds	70	70
Investment-Grade Unaffiliated Preferred Stock	60	70
Mortgage Loans in Good Standing:		
Residential	0	10
Farm	0	10
Commercial	0	10
Reinsurance:		
Amounts Recoverable From Reinsurers	10	50
Other Amounts Receivable Under Reinsurance Contracts	10	50

Importance to the Rating Process

A.M. Best's Stress Liquidity Ratio for U.S. Life Insurers (AMBSLR) is one of A.M. Best's tools to review U.S. statutory operating companies' liquidity. Using statutory data, the AMBSLR quantitatively measures a company's short-term (30 days) and longer term (six to 12 months) cash needs positions under stressed scenarios. The ratio allows for conservative, standardized comparisons to be calculated and determines whether a company's calculated liquidity is within the range of its peers relative to its size and type of business. Due to their greater potential liquidity needs, A.M. Best's analysis has focused on companies with a preponderance of interest-sensitive liabilities (i.e., annuities). As A.M. Best recognizes the shortcomings of statutory reporting in this analysis, it views the liquidity ratio only as a tool, not the sole predictor of future financial performance. Hence, AMBSLR is not intended as a substitute for a comprehensive review of an organization's liquidity.

While there are different levels of liquidity management, the AMBSLR focuses on a life insurer's three major cash sources:

1) the portfolio's level of cash and short-term investments;

2) the portfolio's level of readily saleable securities that can be converted quickly to cash; and

3) the cash flow from operations that is available to meet policyholder obligations, reinvestment or repayment of debt at the operating company.

However, A.M. Best continues to monitor other sources of liquidity available to the company, such as its access to the capital markets, holding company resources and back-up lines of credit. Since debt at the holding-company level can play a key role in an operating company's liquidity profile, ample consideration already is given to the holding-company sources and uses of funds in the qualitative rating analysis. Although these additional avenues for liquidity are factored into the entire liquidity analysis used in determining a rating, they are not considered in this ratio.

Observations of Liquidity Management and Issues

A.M. Best views the management of liquidity as a continuing challenge for life insurers that is more pronounced for companies with interest-sensitive products. When assessing liquidity risk, A.M. Best evaluates the liquidity profile from an enterprise perspective. However, for purposes of this ratio, the asset and liability stress analysis is performed only at a statutory operating company level.

While reviewing day-to-day and ongoing cash management is important, A.M. Best believes that it is the stress liquidity risk that can jeopardize a company's financial viability and could lead to insolvency. Life insurers with significant exposure to single-premium deferred annuities, putable funding agreements or GICs are subject to stress liquidity events. For this reason, A.M. Best monitors a company's issuance of institutional spread-based products relative to its total general-account reserves.

The lessons learned from past events have helped life insurers with highly liquid, easily surrenderable liabilities to insulate themselves from an unpredictable "run-on-the-bank" event, as well as prepare for potential credit events impacting assets. Strong liquidity management should enable the daily operations of a life insurer to run smoothly and should substantially lessen the potential need to liquidate assets prematurely. Management may choose to reduce liquidity risk by restructuring its investment portfolio; reducing any asset/liability mismatch; or de-emphasizing the sale of a particular product line. Review of liquidity is viewed by A.M. Best as an integral part of a company's overall enterprise risk management (ERM) process.

A.M. Best's liquidity review of a given company, which includes the AMBSLR in its liquidity ratio analysis, is therefore a factor in evaluating a company's financial strength. Both the profile of the liabilities and availability of liquidity from assets remain a financial balancing act. As this ratio captures a conservative, stand-alone view of a company's overall liquidity, A.M. Best has refrained from incorporating the other sources and uses of liquidity of the holding company in this ratio.

A.M. Best has observed that liquidity risks have evolved over time as policyholders and contract holders become more sophisticated in managing their financial exposures with life insurance companies. Several types of spread-managed or interest-sensitive products being offered in the marketplace expose a company to liquidity risk as a result of a changing interest-rate environment, credit and default risks, and the embedded optionality in the products. On the asset side, the issues that create liquidity risk come from the ability to sell assets quickly without incurring unacceptable losses. Market movements such as sharp interest-rate changes or general market corrections can trigger such scenarios. A company's appetite for higher yield from investments such as mortgage loans and certain structured securities also can raise liquidity risk.

Exhibit 2

A.M. Best's Stress Liquidity Ratio for U.S. Life Insurers – Liability Factors

	Short Term (30 days)	Longer Term (6-12 months)
Life Policy Claims	100%	100%
Net Ordinary Life Reserves	15	40
Total (Individual and Group, Accident & Health [A&H] Premium Stabilization Reserves)	30	50
Individual A&H Unearned Premium Reserves	10	50
Group A&H UPR	10	50
Credit UPR	5	25
Health Claim Reserves	15	100
General Account Annuities & Deposits (excluding GICs and FAs)	50	75
GICs & Funding Agreements	25	25
Additional Charge for Putable GICs & Funding Agreements	25	25
Reinsurance Payable	100	100
Policyholders' Dividends & Coupons – Due & Unpaid	100	100
Experience Rating Refunds Payable	8	100

Functionality of the Ratio

The AMBSLR incorporates liquidity factors and exposures covering both institutional and retail products, taking into account their unique, embedded risk characteristics. Generally, when the resulting ratio is greater than 100%, a higher comfort level exists that a company's exposure to liquidity risk is acceptable. When the resulting ratio is less than 100%, a more detailed analysis will need to be performed to understand the driving factors and the potential rating impact.

The process of determining the liquidation value of assets and liabilities involves giving a "haircut" to the book values or fair values of assets and liabilities, which are obtained from an operating company's publicly available statutory annual statement and its nonpublic annual A.M. Best Supplemental Rating Questionnaire (SRQ). Since the data are from a statutory perspective, most assets in the ratio (except common stock, which is reported at market value) are valued at amortized cost. The rationale for developing and applying a liquidity "haircut" is to estimate potential cash available to fund cash demands during short and longer term scenarios. In addition, under the scenario testing for this ratio, it is assumed that no new business is sold.

The short-term scenario is indicative of a "stressed" situation in which a company encounters a severe and unexpected liquidity event resulting in withdrawals and surrenders within a 30-day time frame. The longer term scenario measures "stressed" liquidity over a period as long as 12 months. While higher asset credits are given for the longer term scenario, significantly higher liability needs arise, producing lower liquidity ratios than under the short-term scenario. A.M. Best will evaluate each of these two scenarios and give more weight in its analysis to the scenario that presents potentially greater liquidity risk.

By their nature, cash on hand, including cash equivalents and U.S. government-issued securities, receive full credit in both the short and longer term scenarios, as these assets are considered highly liquid. Based on their higher credit quality, unaffiliated, investment-grade, public corporate bonds receive a substantial level of credit in the short and longer term scenarios. However, private investment-grade bonds receive lower levels of liquidity credit. A.M. Best's ratio gives a range of credit, from little (in the longer scenario) to none (in the short scenario) for NAIC class 3 issues because of potential credit- or market-driven factors that may hinder the liquidity of non-investment grade securities.

Since mortgage-backed securities (MBS) and collateralized mortgage obligations (CMO) have diverse investment tranches and react differently under various interest-rate scenarios, A.M. Best differentiates among them for purposes of the liquidity ratio. Agency and non-agency pass-through MBS, whether public or private, receive significant credit in the longer term scenario but no credit for private issues in the short-term scenario. Residential mortgage-backed securities remain under pressure as the housing market continues on a gradual path to recovery, resulting in lower short-term and longer term credits (40%, 50%) when compared with commercial and other loan-backed securities. Delinquency rates on commercial mortgage-backed securities have been modest over the past several years and are well below rates experienced during the early 1990s, warranting higher short-term and longer term credits (70%, 80%). Other loan-backed and structured securities include home equity lines of credit, student loans and collateralized debt obligations that experienced difficulty during the financial crisis and continue to face challenges. Offsetting these loans are auto loans and credit card loans, which are currently well performing. Thus, these assets receive lower short-term and longer term credits of 60% and 70% respectively. The more tightly structured CMO tranches – very accurately defined maturities (VADM), planned amortization classes (PAC) and targeted amortization

classes (TAC) – receive 90% credit in the longer term scenario and 80% in the short-term scenario. Less-liquid CMO tranches receive varying degrees of credit, from 80% to zero. Since the CMO distribution is derived from the SRQ, if no data are received, default industry levels will be used for individual CMO classes.

Although unaffiliated, publicly traded common stocks are fairly liquid, and a company may be able to liquidate most of its equity portfolio to raise cash quickly, the potential exists for marketplace shocks and resulting declines in stock-market values. Therefore, A.M. Best's ratio conservatively gives 70% credit to unaffiliated, publicly traded common stocks (including mutual funds) in the short and longer term scenarios. Unaffiliated, investment-grade preferred stocks also are given 70% credit, but only in the longer scenario, as A.M. Best's short-term credit is 60%. No credit is given to below-investment-grade preferred stocks.

Residential, farm and commercial mortgage loans in good standing receive only 10% credit in the longer term scenario and zero credit in the short-term scenario, because they are not readily marketable assets. Finally, amounts recoverable from reinsurers and amounts receivable under reinsurance contracts are given 50% credit in the longer term and 10% credit in the short-term scenario.

Liquidity factors also are applied to the major liability items used in A.M. Best's ratio. Various life and accident and health claims reserves, premium stabilization and unearned premium reserves and general account annuities and deposit reserves are charged based on their liquidity and withdrawal characteristics. Because of their nature, general account annuities are considered to be subject to significant withdrawal risk, while life insurance polices are less likely to surrender, especially under an immediate scenario. Those annuities with market-value adjustments and/or significant surrender protection are given a higher degree of liquidity credit.

Conclusion

The management of liquidity risk remains an ongoing challenge for life insurers. Additionally, A.M. Best believes that competitive pressures drive companies to engineer more complex products and invest in more sophisticated assets, some of which may be illiquid.

A.M. Best will monitor all of its liquidity ratios on an ongoing basis. As part of the annual rating review, A.M. Best will analyze significant changes in the company's asset and/or liability profile that may impact liquidity ratios. The AMBSLR itself will be revised periodically to reflect new asset and liability classes as well as for methodology enhancements.

Going forward, A.M. Best may incorporate additional data obtained from the annual SRQ, targeted surveys and internal data already collected. A.M. Best notes that the AMBSLR, like the Best's Capital Adequacy Ratio (BCAR), is just one of many tools used in the rating process. Assessment of all factors that impact an insurer's overall balance sheet strength, operating performance and business profile is necessary in evaluating and determining an insurer's long-term financial strength.

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A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Company Inc. (AMB) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMB.

November 2, 2011

Rating Funding Agreement-Backed Securities Programs

This document describes A.M. Best's approach to rating the securities and related programs where the notes to be rated are secured by funding agreement contracts issued by U.S. life insurers.

Additional Information

Criteria

A.M. Best's Perspective on Operating Leverage

A.M. Best's Ratings & the Treatment of Debt

A.M. Best's Liquidity Model for U.S. Life Insurers

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This publication updates the criteria report *Rating Funding Agreement-Backed Securities* dated Oct. 4, 2004. No substantive changes to rating criteria have been made.

This criteria report can be found at *www.ambest.com/ratings/methodology*

Summary

Historically, a number of large U.S. life insurance companies have funded a significant portion of their institutional spread business by issuing funding agreement-backed securities (FABS) through private placement securitization vehicles such as European Medium Term-Note (EMTN) and Global Medium Term-Note (GMTN) programs, as well as Securities and Exchange Commission (SEC)-registered programs. As such, A.M. Best will assign ratings to each FABS issuance under these programs.

A.M. Best views FABS programs as a reasonable activity for highly rated companies with diverse lines of business, considerable expertise in asset/liability and investment management, and strong financial flexibility.

Through the typical FABS program structure, investors are exposed to the inherent credit, liquidity and business risks of the sponsoring insurance company. Therefore, A.M. Best will assign an ICR to the program and debt ratings to the various tranches. The ICR is A.M. Best's opinion as to the ability of the issuing insurance company to meet its senior obligations. Notes issued under a standard FABS program will receive debt ratings that are the same as the ICR of the sponsoring insurance company (and also of the program), reflecting that: (1) the underlying funding agreements (FAs) are obligations of the insurer's general account and (2) the FAs are *pari passu* with other insurance contracts issued by the company based on the regulations of the insurer's state of domicile.

A.M. Best's analysis will entail reviewing the insurance laws of the state of domicile for each issuer, as well as soliciting independent legal opinions in states where the regulations are unclear. The FABS programs' legal and economic structures also must be analyzed, including how well the payment requirements of the FAs and notes are coordinated.

In addition, A.M. Best will review the insurers' asset/liability management processes to ensure that a close match is maintained between the funding agreements' assets and liabilities.

The rating analysis will be similar to considering the risks inherent in other spread-based products such as guaranteed investment contracts (GICs), which generally are issued to pension plans and municipalities. Since the net proceeds from FABS issuances are used in matched funding operations, A.M. Best views GICs and FAs as operating leverage, not as financial

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leverage. For more information, see *A.M. Best's Perspective on Operating Leverage*.

Finally, A.M. Best's analysis will incorporate the organization's overall ability to support the institutional spread-lending business in establishing limits for these products on a company-by-company basis. Companies that issue substantial volumes of "stable value" products, or where the majority of general account liabilities comprise institutional investment products, may experience downward pressure on their ratings.

Overview

For the insurers that have participated in institutional investment markets, FABS programs have been an attractive alternative to non-tradable GICs and FAs, which appeal only to a limited buyer base. Because the notes are tradable securities, FABS programs attract a wider base of buyers than the illiquid GIC/FA products, allowing companies to diversify funding sources and reduce their overall cost of funds. Also, the notes offer investors access to high-quality issuers at a level higher up in the capital structure than senior bondholders, with attractive relative spreads.

In broad terms, FAs are nonqualified annuities or annuity-like instruments that are designed specifically to generate regular cash flows to service the debt on short-term or medium-term notes issued through a securitization vehicle – a trust and/or special-purpose vehicle (SPV). The structure transfers the credit quality of a policyholder claim at the insurance company to the notes of the SPV. FAs are more appropriate than GICs for use in securing note issuance programs because of the lack of life, health or employment contingencies in the FA contracts. FAs are governed by the laws of the underwriting insurer's home state, whereas the notes, like most U.S. corporate securities, ordinarily are governed by New York law.

Funding Agreement-Backed Securities Programs

In the late 1990s, substantially all FABS were issued under EMTN programs and sold to investors in Europe, Asia and Australia. The owner and holder of the FA is an SPV located outside of the United States – typically in the Cayman or Channel islands. Since the offshore SPV is not an insurance company, the regulatory process is streamlined. Insurers that issue the notes through these structures are not subject to European regulatory oversight as they are not directly selling insurance policies. In addition, the notes are not subject to U.S. tax laws.

The programs initially were set up to issue amounts in various European currencies. To effectively eliminate mismatch, the terms of the FAs match the terms of notes to be issued by the SPV. Additionally, the insurers and SPVs may enter cross-currency and interest-rate swaps with swap counterparties to reduce the risk of currency and payment mismatches. One approach that companies have utilized in FABS structures is where the FA is written in the foreign currency and the insurer makes the foreign currency payments by means of a swap contract. An alternative method has the FA written in U.S. dollars, and the SPV would swap the FA payments into the necessary foreign currency before passing them on to the noteholders.

Direct purchase of the EMTN notes is restricted to non-U.S. investors; the notes are listed in the bond section of the Luxembourg Stock Exchange. Maturities generally range from three to 30 years, although five- to seven-year maturities are more common. Once the notes are "seasoned" (i.e., out of the restricted period, approximately 40 days) they can be actively traded without limitations.

Distributors eschewed selling FABS in the United States until the insurance regulators could be satisfied that the notes were investment products rather than insurance contracts. In 2000, the volume of issuances expanded with the introduction of GMTN programs. These programs essentially are the same as EMTN programs except that issues are available both to general investors outside the United States and to qualified institutional buyers within the United States under Rule 144A.

In the GMTN program structure, the securitization vehicle is a domestic entity – usually a Delaware business trust or limited

liability company. A.M. Best data on the FABS market indicate that GMTN programs are primarily being utilized, although the EMTN programs remain active. Additionally, before actively issuing FABS under their own name, insurers utilized conduit programs such as the Premium Asset Trust Series and Structured Asset Repackaged Trust Series, which are managed by broker-dealers.

The insurer establishes the maximum aggregate principal amount for its FABS program, but the notes can be issued in unlimited series or tranches. The notes, which are nonstandard and designed to meet the diversification needs of investors, can be fixed or floating rate or zero-coupon. A.M. Best will rate both the program and particular series within each program.

By the end of 2003, some FABS issuers established SEC-registered medium-term note programs. These enable an insurer to sell notes to U.S. retail buyers and to a broader range of U.S. institutional buyers than the predecessor programs, thus diversifying the investor base. Additionally, notes issued under registered programs may be more attractively priced compared with the private placement market, and regular, periodic retail funding helps to smooth the uneven inflows and outflows of institutional note transactions. Although SEC-registered programs generally have onerous reporting requirements and a lengthy approval process, A.M. Best believes the process has gained some efficiencies over time.

Program Structure

Within FABS program structures, the SPV or trust is a bankruptcy-remote entity. The SPV generally has no prior business history, and its sole purpose is to issue notes secured by FAs of the underlying insurer. The FA is a direct senior obligation of the insurance company. Held by a trustee, the FA is the SPV's primary asset and the source of funds to pay the noteholders in the program. The terms of the FAs (rate, maturity and principal) generally match the terms of the notes or bonds. If the issuer fails to satisfy the stated contract terms, the noteholders have recourse to the FA issued to the trust or SPV, but the notes are non-recourse to the insurer.

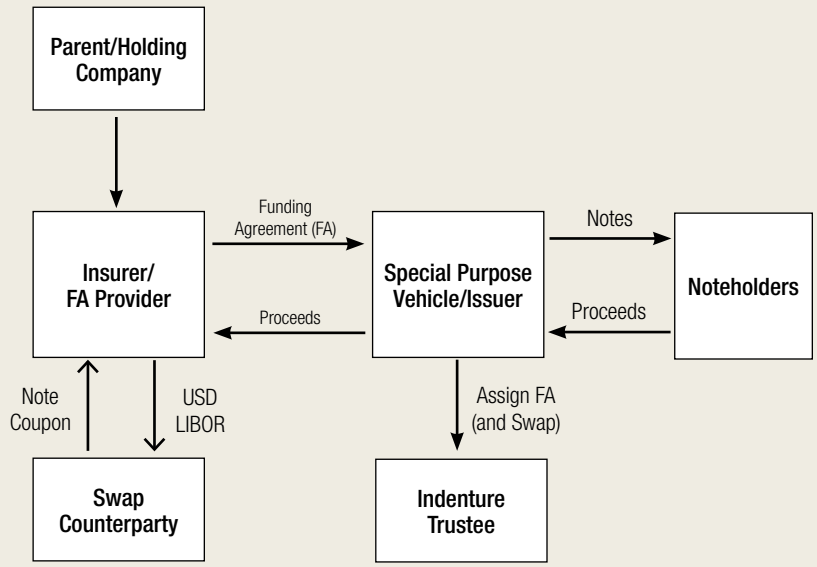
The insurer and/or the SPV also may engage in swap agreements to match the cash flows from the FA with the obligations of the SPV to make payments on the notes. Typically, swaps are used when the notes are denominated in a different currency than the FA. Where swaps or other derivatives are used, this creates an additional source of assets, as well as liabilities, for the SPV.

The SPV is needed to convert a non-tradable insurance product (the FA) into liquid investment products (the notes). The notes are a form of securitized instrument in that they pass along the proceeds of the FA in a structured manner, and derivative, as they track the behavior of another instrument, the bond or note. Hence, the FAs and the notes have analogous payment structures.

In offshore programs, any funds remaining at the SPV level after all notes mature are funneled to a charitable organization. In certain domestic programs, leftover funds would be returned to a beneficial owner other than the insurer. In general, when the notes mature, the SPV terminates and returns any excess funds to the insurer.

The FA is assigned to the trustee for the benefit of the notes' investors. Security interest perfection is achieved by the

Typical FABS Structure*



*In most programs, the FA is issued in the same currency and coupon as the notes, so there is no swap with the SPV.

trustee who takes possession of the funding agreements. Additionally, the trustee may file financing statements in the state where the trust was incorporated and/or the insurer's state of domicile, naming the SPV as the debtor and the trustee as the secured party for the benefit of the note investors.

Key Rating Factors

1. Issuer Credit Rating

The ICR of the issuing insurance company is A.M. Best's opinion of the insurer's ability to meet its ongoing senior obligations. Notes issued under a standard FABS program will receive the same ICR as the sponsoring insurance company, reflecting that: (1) the underlying FAs are obligations of the insurer's general account and (2) the FAs are *pari passu* with other insurance contracts issued by the company based on the regulations of the insurer's state of domicile.

The rating assigned to the program is generally assigned to each tranche. An exception would be if credit risk is embedded in any of the tranches in addition to the insurer's credit risk in these tranches (e.g. credit-linked or index features), which may cause the rating of the notes to be notched lower. A.M. Best believes these exceptions are uncommon. Programs/notes that are credit enhanced may be assigned a higher rating than the insurer's ICR. These cases also are atypical.

2. State Regulatory Opinions on Priority of FAs

A crucial issue is whether the FAs are *pari passu* with policyholder claims; that is, whether the insurer's state of domicile treats the FA as an insurance liability of the general account. Many states have specific language in their regulations stating that FAs are considered policyholder liabilities and therefore receive the highest priority of claims. In states where FAs are junior to general account policyholder obligations, the rating of the program/notes, all other factors being equal, would rank below that of the insurance operating company.

A.M. Best will review the insurance laws of the state of domicile for each FA issuer as well as solicit independent legal opinions, especially for states where the regulations are unclear. Investors may take comfort in the outcome of litigation from the Executive Life, Mutual Benefit Life and Confederation Life insolvencies which concluded that GICs were policyholder obligations, although other courts may render different opinions.

3. FABS Structure

An important aspect of relating the insurer's ICR to the rating of the program/notes is to understand the relationship between the FA and the note program. The legal and economic structures must be analyzed, including how well the payment requirements of the FA and notes are coordinated. Some note programs tie the note payments to risks other than the insurer's credit, and these risks must be evaluated to determine whether they create downward pressure on the rating. Furthermore, since the net proceeds from funding agreements are used in matched funding operations, A.M. Best views this as operating leverage – similar to other insurance liabilities – and not as financial leverage.

The analysis of the FABS program structure is similar to that of a leveraged lease or other structured-financing arrangement. A major consideration in the analysis is the extent to which state insurance laws govern. The inquiry also has legal components relating to the enforceability of the notes' security interest provisions under the commercial laws of the insurer's and the SPV's domicile. Finally, the analysis should consider: (1) how direct is the investors' recourse to the FA; (2) whether the flow of FA payments to investors is impeded; and (3) how strictly the noteholders can enforce their security interest in the FA.

4. ALM and Liquidity Factors

FA providers must employ sophisticated asset/liability management techniques and possess expertise in fixed-income and portfolio management, as well as proficiency in the structuring and management of the FABS program – similar to the skill set necessary for managing a profitable GIC issue.

Although the FA's assets generally are only notionally segregated in the insurer's gen-

eral account, a close match between the funding agreement's assets and liabilities should be maintained. However, this match could be disrupted, for example, when interest rates decline and the durations of certain assets shorten, which often occurs with collateralized mortgage obligations (CMOs).

To compensate, an insurer may fund a floating-rate FA with fixed-rate assets and then "swap" the resulting fixed payments for floating-rate payments. Although this mitigates interest risk, the insurer still is exposed to credit risk.

In general, accepting more asset risk can enhance spreads for the insurer, though this may be at the expense of increased asset/liability mismatches and investment losses. The risks are similar to those of other spread-based products, such as pension GICs. A.M. Best views GICs and FAs as commodity products with relatively low margins as the products have few differentiating features. Also, companies may try to augment spreads by using less liquid, more exotic asset classes, which present additional investment risks.

The greater an insurer's exposure to these institutional liabilities, the greater the stress on an insurer's liquidity profile, especially in certain situations such as a rating downgrade or a contract containing negative covenants. Further, if an insurer has a large portion of its total liabilities due in a year or less, it is substantially exposed to any material negative turn in investors' sentiment, which may cause a "run-on-the-bank" scenario that damages franchise value and deters investors.

Put options embedded within FAs give rise to liquidity concerns and event risk. FA providers must employ effective asset/liability management techniques, model the quick roll-off of putable FAs and maintain adequate sources of liquidity. The longer the duration of an insurer's asset portfolio, and the lower the quality, the less likely the company will be able to handle a "run-on-the-bank" scenario where a significant portion of assets potentially would need to be divested at a loss. Even so, A.M. Best has observed that few putable products are being issued by life insurers, and even rarer are issuances of seven-day put options of the kind that created the liquidity crisis at General American in 1999.

For FAs that do not have puts, rollover (refinancing) risk is an issue. Similar to debt obligations, as FAs mature principal payments must be made. If cash flows are not realized through a new note issue or GIC sale, assets may need to be disposed of (at a less than opportune time) to satisfy the maturing obligation. To be clear, insurers issuing FAs within FABS programs do not necessarily also offer putable FAs. While there is rollover risk at maturity, a block of FAs securing a note issuance program is generally more stable and predictable than a block of short-term putable FAs.

The FABS market is not "self-policing" like the commercial paper market, where outstanding paper may be left to mature on schedule (assuming "normal" markets). An orderly roll-off of an insurer's FA liabilities may not be possible since the exercise of outstanding put options is unpredictable, as evidenced by what occurred at General American. The liquidity issues at General American were exacerbated by the use of reinsurance with recapture provisions. Although the use of reinsurance is atypical in the FA marketplace, A.M. Best must monitor its usage and incorporate it into its overall analysis.

5. Risk Reduction Techniques

A.M. Best analysts will look for certain risk-reduction techniques, including the following:

- Cash-flow matching
- Diversification of assets
- Laddered liability maturities
- Surplus and capital backed with liquid assets
- Back-up line of credit
- Commercial paper facilities
- Repurchase agreements
- Liquidity options from an investment dealer

Rating Process

In addition to holding discussions with the insurer to assess the transaction's structure, economics and modeling of the FA's future performance, A.M. Best will obtain and review documentation for each program, including:

- Presentations to potential investors
- Offering memorandum, term sheets and indenture
- Operative documentation of the funding agreement
- Documentation of third-party credit support (if applicable)
- Legal opinions of the FA and SPV
- Regulatory actions and communications on any significant aspect of the FA or SPV.

When the analytical team has received all the necessary information and documentation, conferred with all relevant parties and completed their assessment, the team will recommend a rating to the rating committee.

Maintaining the rating requires the insurer to provide A.M. Best with periodic updates on its FABS programs, timely notice of material changes in the performance of the assets backing the FA, and notice of any regulatory actions that have the potential to materially affect the transactions. Meetings with the principal parties to the transactions also are expected.

Published by A.M. Best Company

Methodology

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A Best's Debt/Issuer Credit Rating is an opinion regarding the relative future credit risk of an entity, a credit commitment or a debt or debt-like security. It is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile and, where appropriate, the specific nature and details of a rated debt security.Credit risk is the risk that an entity may not meet its contractual, financial obligations as they come due. These credit ratings do not address any other risk, including but not limited to liquidity risk, market value risk or price volatility of rated securities. The rating is not a recommendation to buy, sell or hold any securities, insurance policies, contracts or any other financial obligations, nor does it address the suitability of any particular financial obligation for a specific purpose or purchaser.

In arriving at a rating decision, A.M. Best relies on third-party audited financial data and/or other information provided to it. While this information is believed to be reliable, A.M. Best does not independently verify the accuracy or reliability of the information.

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April 7, 2016

Understanding BCAR for U.S. Property/Casualty Insurers

The objective of A.M. Best Co.'s rating system is to provide an opinion of an insurer's financial strength and ability to meet ongoing obligations to policyholders. The assignment of an interactive rating is derived from an in-depth evaluation of a company's balance-sheet strength, operating performance and business profile, as compared with A.M. Best's quantitative and qualitative standards.

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing obligations to policyholders, balance-sheet strength is the most important area to evaluate, since it is the foundation for policyholder security. Performance then determines how that balance-sheet strength will be enhanced, maintained or eroded over time. Balance-sheet strength measures the exposure of a company's surplus to its operating and financial practices. An analysis of a company's underwriting, financial and asset leverage is very important in assessing overall balance-sheet strength.

Underwriting leverage is generated from current premium writings, reinsurance recoverables and loss reserves. To assess whether a company's underwriting leverage is prudent, a number of factors unique to the company are taken into account, including the types of business written, the quality and appropriateness of its reinsurance program and the adequacy of loss reserves.

Financial leverage is created through debt or debt-like instruments—including financial reinsurance—and is reviewed in conjunction with a company's underwriting leverage. An analysis of financial leverage is conducted at both the operating company and holding company levels, since debt at either level could place a call on the insurer's earnings and strain its cash flow, leading to financial instability.

Additional Information

Criteria:

Analyzing Contingent Capital Facilities

The Treatment of Terrorism Risk in the Rating Evaluation

Risk Management and the Rating Process For Insurance Companies

Assessing the Tail Risk of Sidecars

Catastrophe Analysis in A.M. Best Ratings

Equity Credit for Hybrid Securities

Insurance Holding Company and Debt Ratings

Rating Members of Insurance Groups

A.M. Best's Perspective on Operating Leverage

Evaluating U.S. Surplus Notes

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This publication release updates the version issued April 15, 2015 to remove any reference to secure/vulnerable rating categories in the text on pages 5, 6 and 20, as well as the BCAR Guidelines exhibit on page 6.

Structural Overview: A.M. Best's Capital Adequacy Ratio

$$\text{BCAR} = \frac{\text{Adjusted Surplus}}{\text{Net Required Capital}}$$

Adjusted Surplus Components

Reported Surplus
Equity Adjustments
- Unearned Premiums
- Assets
- Loss Reserves
- Reinsurance

Debt Adjustments
- Surplus Notes
- Debt Service Requirements

Other Adjustments
- Potential Catastrophe Losses
- Future Operating Losses

Net Required Capital (NRC) Components

(B1) Fixed-Income Securities
(B2) Equity Securities
(B3) Interest Rate
(B4) Credit
(B5) Loss and Loss-Adjustment-Expense Reserves
(B6) Net Written Premium
(B7) Off Balance Sheet

Covariance

$$\text{NRC} = \sqrt{(B1)^2+(B2)^2+(B3)^2+(0.5*B4)^2+[(0.5*B4)+B5]^2+(B6)^2} + (B7)$$

Source: A.M. Best Co.

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Asset leverage measures the exposure of a company's surplus to investment, interest rate and credit risks. The volatility and credit quality of the investment portfolio, recoverables and agents' balances determine the potential impact on the company's balance-sheet strength.

A company's underwriting, financial and asset leverage also are subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR), which allows for an integrated review of these leverage areas. BCAR calculates the net required capital to support the financial risks of the company associated with the exposure of assets and underwriting to adverse economic and market conditions, and compares it with economic capital. Some of the stress tests within BCAR include above-normal catastrophes, a decline in equity markets and a rise in interest rates. This integrated stress evaluation permits a more discerning view of a company's balance sheet strength relative to its operating risks.

A company's BCAR result is extremely useful in evaluating a company's balance-sheet strength, but it is only one component of that analysis. In addition, balance-sheet strength is only one component of the overall financial strength rating, which also includes operating performance and business profile. BCAR establishes a guideline for risk-adjusted capital to support a rating, but other factors driving expectations of future balance-sheet strength drive the rating as well. All of these factors are important to the overall rating process. This criteria will describe the BCAR model and how market issues are treated within the model.

Overview of BCAR

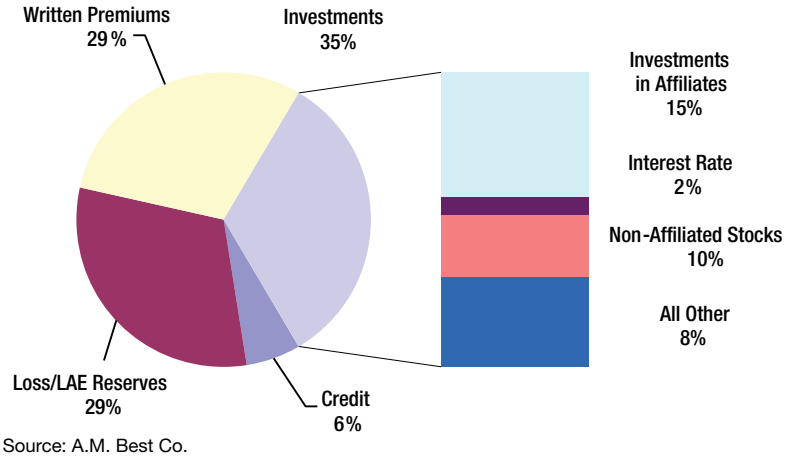
Structurally, A.M. Best's capital formula resembles the National Association of Insurance Commissioners' (NAIC) risk-based capital calculation, whereby required capital is computed to support three broad risk categories: investment risk, credit risk and underwriting risk. Like the NAIC model, the A.M. Best formula contains an adjustment for covariance, reflecting the assumed statistical independence of the individual components. A company's adjusted surplus is divided by its net required capital, after the covariance adjustment, to determine its BCAR.

Exhibit 1 shows the distribution of gross required capital by risk category that is generated by applying the BCAR capital model to the property/casualty industry in 2013. In contrast to the NAIC model, a significantly greater proportion of capital is required to support the premium component, reflecting A.M. Best's more stringent risk factors. While BCAR is designed very similarly to the NAIC's risk-based capital calculation, it also includes several critical risk components not considered in the risk-based capital calculation.

Exhibit 1

A.M. Best's Capital Adequacy Model

Composition of gross required capital – 2013 industry aggregates.



Source: A.M. Best Co.

Total investment risk—which includes three main risk components: (B1) fixed income securities, (B2) equities and (B3) interest rate—applies capital charges to different asset classes based on the risk of default, illiquidity and market-value declines in both equity and fixed-income securities. A.M. Best's model has incorporated an interest-rate risk component that considers the market-value decline in a company's fixed-income portfolio as a result of rising interest rates. Additionally,

higher capital charges are ascribed to affiliated investment holdings, real estate, junk bonds and nonaffiliated common stocks.

The credit risk category (B4) applies capital charges to different receivable balances to reflect third-party default risk. Capital charges are ascribed to recoverables from all reinsurers, including foreign and domestic affiliates. Required capital for credit risk might be modified after taking into account any collateral offsets for reinsurance balances; the quality of the reinsurers that participate in the company's domestic reinsurance program; and the company's dependence on its reinsurance program. Also included in the credit risk component are charges for agent balances and other miscellaneous receivables.

The largest risk category, which typically accounts for two-thirds of a company's gross required capital, is underwriting risk. This category encompasses both loss and loss-adjustment expense reserves (B5) and net premiums written (B6).The loss-reserve component requires capital based on the risk inherent in a company's loss reserves, adjusted for A.M. Best's assessment of its reserve equity. The net premiums written component requires capital based on the pricing risk inherent in a company's mix of business. In addition, required capital for the reserve and premium components may be increased to reflect an additional surcharge for "excessive" growth in exposure. Finally, there is credit for a well-diversified business, but this credit is limited for those companies that maintain small books of many lines of business and might not necessarily have expertise in all of these lines.

Collectively, these six risk components generate more than 99% of a company's gross required capital, with the business risk component (B7) generating minimal capital requirements for off-balance-sheet items. A company's gross required capital, which is the sum of the capital required to support its seven risk components, reflects the amount of capital needed to support all risks were they to develop simultaneously. These individual components then are subjected to a covariance calculation within the BCAR formula to account for the assumed statistical independence of these components. This covariance adjustment essentially says that it is unlikely for all seven risk components to develop simultaneously and serves to reduce a company's overall required capital by about 35% to 45%.

A.M. Best has adopted a covariance calculation that is very similar to the NAIC's risk-based capital calculation. The A.M. Best calculation recognizes the distortions caused by this "square root rule" covariance adjustment, whereby the more capital-intensive underwriting risk components are accentuated disproportionately, while the less capital-intensive asset risk components are diminished in their relative contribution to net required capital. Nevertheless, by using other distinct capital measures, A.M. Best can counterbalance this apparent shortcoming.

Unlike other models, A.M. Best's capital model makes a number of adjustments to a company's reported surplus to provide a more economic and comparable basis for evaluating capital adequacy. These adjustments are related largely to equity, or economic values, embedded in unearned premium reserves, loss and loss-adjustment expense reserves, and fixed-income securities. They serve to even the playing field and compensate for certain economic values not reflected in the NAIC statutory financials. Surplus is adjusted further to reflect other non-balance sheet risks, including catastrophe exposures and debt-service requirements.

In addition, the model can be adjusted in response to various market issues. Some examples that can impact capitalization include rate changes; the stage of the underwriting cycle; changing reinsurance products; and dependence on reinsurance. The ability of the model to respond to these market issues makes it a robust tool that assists in the evaluation of the company's balance-sheet strength.

For a detailed discussion of the key features, adjustments and issues related to the BCAR model, please refer to "Technical Review of the BCAR Formula," on page 6.

Interpretive Guidance

The basis of risk measurement for A.M. Best's property/casualty BCAR model is expected policyholder deficit. A.M. Best adopted the concept of expected policyholder deficit to better calibrate the model's loss-reserve and premium risk factors, as well as other risk factors throughout the model. Although this calibration isn't absolute, it has helped to measure more consistently the risk that companies face.

Expected Policyholder Deficit

The expected policyholder deficit concept allows risk charges to be calibrated to a specific level of insolvency risk, producing a consistent assessment of insolvency risk throughout the capitalization model. Many other capital adequacy models, including those based on value-at-risk concepts, tend to be based solely on the probability of ruin, or insolvency. Expected policyholder deficit also takes into consideration the expected cost, or severity, of insolvency.

Exhibit 2 shows the difference in risk between two companies that have the same 10% probability of insolvency. Under the first scenario, neither company defaults or produces a deficit. Under the second scenario, while both companies default and produce deficits, Company B produces a deficit of $2,000, but Company A produces a deficit of only $1,000.

Exhibit 2
Expected Policyholder Deficit Illustration

Company A	Asset Amount	Loss Amount	Capital Amount	Probability	Claim Payment	Deficit
Scenario 1	$13,000	$9,556		90%	$9,556	$0
Scenario 2	13,000	14,000		10%	13,000	1,000
Expectation	**13,000**	**10,000**	**3,000**		**9,900**	**100**
Expected Policyholder Deficit (Expected Deficit/Expected Loss Amount)						**1%**
Company B						
Scenario 1	$13,000	$9,444		90%	$9,444	$0
Scenario 2	13,000	15,000		10%	13,000	2,000
Expectation	**13,000**	**10,000**	**3,000**		**9,800**	**200**
Expected Policyholder Deficit (Expected Deficit/Expected Loss Amount)						**2%**

Source: A.M. Best Co.

In calculating the expected policyholder deficit for the two companies, the probability of each scenario is multiplied by the deficit produced by the scenario. Based on this calculation, Company A produces an expected policyholder deficit of $100, or 1% of expected loss amount. Company B produces an expected policyholder deficit of $200, or 2% of expected loss amount. While both companies have the same 10% probability of failure, Company B presents the greatest risk to insureds because of the additional costs of its insolvency relative to the same capital position.

Since Company B is showing a larger expected policyholder deficit, it would generate a lower BCAR than Company A. The larger risk for Company B needs to be supported by a greater amount of capital than the amount needed to support Company A's risks. The greater required capital to support Company B's risks, relative to the same asset base as Company A, results in a lower BCAR for Company B.

Formula Drivers

Approximately two-thirds of a company's gross capital requirement within A.M. Best's capital model usually is generated from its loss reserve (B5) and net premiums written (B6) components. Consequently, a company's absolute BCAR value reflected in A.M. Best publications is influenced largely by the capital required to support its net underwriting commitment, which in turn is largely a function of a company's mix of business, size of surplus, stability of loss development, profitability, loss-reserve adequacy and length of claims

payout. All things being equal, a company's absolute BCAR value will be lower because of higher capital requirements associated with higher underwriting leverage, greater indicated reserve deficiencies and unstable or unprofitable business.

While only about one-third of the gross capital requirement is generated from investment risk (B1/B2), interest rate risk (B3) and credit risk (B4) components, a company that maintains a more aggressive investment portfolio, depends heavily on pyramided capital, has excessive credit risk or depends excessively on reinsurance will likely generate a lower BCAR value.

Sensitivity Calculations

A.M. Best analysts may supplement their initial assessment of a company's baseline capital position by performing various sensitivity calculations. These analyses can quantify the capital required to support future business plans, reflect the effect of pro forma transactions or reflect the current quarter-ending capital position. Finally, these calculations can reduce a company's reported surplus to incorporate a number of stress scenarios. These sensitivity calculations would quantify the extent of capital cushion or shortfall relative to the company's current rating level.

A.M. Best's risk-adjusted capitalization guidelines, which have been established for individual rating levels, generally correspond with 10% to 15% increments of a company's net required capital. If a company's capitalization were to deteriorate after a reasonable stress test such that its capital position fell considerably and the potential for recovery from the capital shortfall was unlikely, the sensitivity analysis would contribute to downward pressure on the company's rating. The extent of sensitivity analysis performed on a company's capitalization will vary by company and situation. The analysis will include the extent of the shortfall; the company's liquidity and potential to sustain itself through market fluctuations; the company's ongoing earnings potential; and the ability to raise capital.

Integration of BCAR In the Rating Process

Clearly, BCAR is an important quantitative tool that helps A.M. Best differentiate financial strength between companies and indicate whether a company's capitalization is appropriate for a rating. However, BCAR by itself is insufficient as the sole basis for determining the final rating. In many cases, companies with similar capital positions might be assigned different ratings based on the integration of other important considerations unique to each insurance company: operating performance and business profile.

In addition, the quality of capital is another issue that will qualitatively differentiate one rating from another, even though two companies might have similar BCAR scores. Many soft capital transactions are admitted as surplus under statutory accounting rules but ultimately drain cash, place a drag on earnings or only provide contingent capital, thereby compromising policyholder security and negatively impacting financial strength ratings.

However, for companies that maintain capital near or below the BCAR level of 100, BCAR becomes an important rating component. Additionally, companies that are expecting material changes over the next year are evaluated on both an "as is" and an "as will be" basis to better gauge the direction in which capital adequacy is moving.

Availability of BCAR Output

Because of the sensitive nature of the underlying adjustments and qualitative information incorporated in a company's BCAR calculation, adjusted BCAR output for a particular company is made available only to that company's management. Often, a discussion of A.M. Best's capital model is included in rating meetings when capitalization is an important

rating issue. A.M. Best's analysts generally are available to run a limited number of scenarios to aid management in understanding the impact of their decisions on their BCAR and ultimately on A.M. Best's view of capital strength.

The Technical Review of the BCAR Formula

Below are summaries of key features and issues related to adjusting policyholder surplus and each of the seven distinct risk components (B1 through B7) within the BCAR model.

Treatment of Key Risk Components

Investment Risk (B1/B2)

Nonaffiliated Bonds: A.M. Best looks at the quality distribution of an insurer's bond portfolio and assigns risk charges for default risk that are modestly higher than those applied by the NAIC, with no capital charged for U.S. government bonds.

Common Stocks: A.M. Best continues to apply its historical investment leverage approach, which assumes a 15% reduction in the market value of publicly traded common stocks held. This charge is consistent with A.M. Best's goal of calibrating the baseline capital factors to a 1% expected policyholder deficit.

Preferred Stocks: As a starting point, A.M. Best will continue to treat preferred stocks consistently with common stocks. However, for those companies that have demonstrated their willingness and ability to hold onto these investments for the long term, the nonaffiliated preferred stock portfolio will be treated in a manner similar to bonds and will receive risk factors based on the NAIC designation provided in the annual statement.

Real Estate and Other Investments: Given the greater volatility of real estate investments and their risk of being valued improperly, A.M. Best applies higher risk factors to this asset class. Separate risk charges of 10% and 20% are applied to real estate occupied by the company and real estate held for investment purposes, respectively. In addition, a 20% baseline factor is applied to Schedule BA assets, which typically include some speculative, higher-risk assets.

BCAR Is an Absolute Measure

The BCAR model produces an absolute score, which is the ratio of the company's own adjusted surplus to its own net required capital. An absolute ratio below 100% would mean the company's indicated expected policyholder deficit is greater than 1%

BCAR provides an integrated evaluation of a company's investment, credit and underwriting risk as it compares with the company's level of economic surplus. Within this evaluation, A.M. Best includes many adjustments that recognize the company's specific risk and economic surplus. Because of this integrated evaluation of operating risk, BCAR is an important tool in evaluating a company's balance-sheet strength.

For a company with strong, stable operating performance, sound risk management, a strong business profile, high-quality capital and strong financial flexibility, on a historical and prospective basis, **Exhibit 3** provides a reasonable guide for the BCAR levels needed to support A.M. Best's Financial Strength Ratings. Companies that do not have these characteristics typically would be expected to have higher BCAR guidelines.

Exhibit 3
BCAR Guidelines

BCAR	Implied Balance Sheet Strength
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

These charges are broadly in line with the NAIC's risk factors.

Cash: The 0.3% risk charge applied to cash balances represents the risk that cash deposited in a banking institution might be uncollectible if the bank becomes insolvent.

Investment in Property/Casualty Insurers: In addition to stand-alone company analyses, A.M. Best also takes a consolidated approach that recognizes the importance of affiliated relationships within a domestic property/casualty group. A.M. Best's consolidated approach applies to all affiliates included in the rating unit through reinsurance or group rating consideration. This consolidation provides a better view of the overall operating fundamentals and capitalization of the operating unit.

However, for those investments in affiliated property/casualty insurers that are not consolidated into a particular analysis (such as sister companies, international operations, companies in run-off, etc.), a baseline risk charge of 100% will be applied to the investment in affiliates, regardless of which investment schedule it is recorded in (i.e. surplus notes recorded as other investments in Schedule BA, etc.). For equity investments in affiliated property/casualty insurers, the baseline risk charge may be reduced if A.M. Best determines that there is capital in excess of the amount required to support the current, stand-alone assessment of the affiliate, and the assets can be transferred on short notice.

If the amount of the investments in affiliates represents a material portion of the investing company's reported surplus, A.M. Best may perform a supplemental BCAR analysis that removes the affiliated investments from both reported surplus and investments. This supplemental analysis can be performed regardless of whether the affiliate is a property/casualty or life/ health insurer.

Investment in Life/Health Insurers: Similar to the NAIC model, the required capital of a domestic life/health affiliate within A.M. Best's formula is charged to the property/casualty parent. A.M. Best's formula is designed to allow the excess of a life/health subsidiary's adjusted surplus over the required capital necessary to support its current rating category to accrue to the parent.

Special Purpose Subsidiaries: The required capital to support the underlying assets and liabilities of a special purpose affiliate is charged to the parent company. For example, a down-stream holding company that holds special-purpose real estate investments would receive a 20% capital charge rather than a baseline charge of 100% afforded "other investment affiliates."

Investment in Non-Insurance Affiliates: There are a number of issues considered when determining the appropriate risk charge for investments in non-insurance affiliates. If the investment is publicly traded, it might receive a lower risk charge than a privately placed investment, because privately placed investments generally are viewed as being less liquid. However, if the company owns a large proportion of a publicly traded affiliate, it might require regulatory or shareholder approval to sell it, making it less liquid. Lastly, the sale of an affiliated investment in a stress situation could give the buyer leverage during the negotiation of the sale price, resulting in a realized value for the asset that is lower than the reported value.

These issues make these types of assets less liquid than other publicly traded investments, and the risks resemble those of a privately held subsidiary.

A.M. Best charges the full statutory carrying value of the non-insurance affiliate to the parent. Unless a property/casualty insurer is committed actively to selling a non-insurer, with proceeds to be reinvested in the property/casualty operations, the baseline treatment is a 100% capital charge. In this regard, A.M. Best presumes that the net asset value of the affiliate is needed to

support its own operations and isn't available to support the property/casualty operation.

Intercompany Loans: If an intercompany loan that normally is recorded as a liability is given surplus credit by A.M. Best, then the amount of credit given to the borrower will be directly removed from the surplus and the investments of the lender. The intent is to avoid giving surplus credit in more than one company.

Derivative Asset: The baseline treatment of derivatives shown as an asset will be to apply a 100% risk charge to the asset value reported in the NAIC statutory statement. However, both the asset value and the risk charge may be modified once information about the derivative itself and the company's derivative program is ascertained. In fact, the asset value may be replaced with the notional value of the underlying investments if that is a better proxy for the exposure. In some instances, when a derivative is considered to be purely speculative in nature, the required capital calculation may be moved to the business risk page, which results in a direct addition to net required capital rather than remaining on the investment risk page and benefitting from the covariance credit when calculating net required capital. Where possible, if the derivative is hedging a specific quantifiable risk captured in the BCAR model, A.M. Best may reduce the required capital for that risk but will also remove the asset value of the derivative from reported surplus.

In addition to determining whether a derivative is for hedging or speculative purposes, A.M. Best also will review the counterparty credit risk involved; the liquidity of the derivative; the volatility of the asset value; the potential maximum downside loss; the correlation of the derivative asset value with the value of the related index or investment; the remaining term of the derivative versus the term of the associated investments or liabilities; the relationship of the triggering event to current economic environment; the size, purpose, expertise and track record of the company's derivative program, etc.

Securities Lending Reinvested Collateral: The baseline treatment of reinvested collateral is to charge a risk factor of 10%, but this factor can be changed after a review of the types of investments in which the collateral was reinvested.

Catastrophe-Exposed Investments: Investments in sidecars, catastrophe bonds or other investments that are exposed to the sudden loss of value due to the occurrence of a catastrophe will initially be assigned a baseline risk charge of 100% on the investment page, but may be removed directly from surplus when it is a material portion of surplus or added directly to the net PML on an after-tax basis, depending on a review of the investment's exposure, attachment points, perils insured, term to maturity, etc.

Foreign Investments: For those companies that have a material amount of foreign investments in a particular investment category, the risk charge for that asset category may be increased to reflect the increase in volatility and/or decrease in liquidity associated with those foreign markets, financial systems and economies.

Asset Concentration Adjustment: A.M. Best doubles the asset risk charge for single, large investment holdings that are greater than 10% of surplus. This additional capital requirement applies to amounts in excess of the single investment limit, with the baseline charge for that investment type applying to the amount less than 10% of surplus.

Spread of Risk Factor Adjustment: A.M. Best's model generates additional required capital to support investment risk relating to diversification of the portfolio, using a size factor related to the spread of risk among all major asset classifications. Generally, no additional capital is generated from this adjustment for insurers with more than $500 million in invested assets,

while insurers with less than $5 million in invested assets could receive as much as a 50% surcharge that is added to their baseline investment capital requirement.

High Investment Leverage: The recent, dramatic declines in the equity markets have shown that companies with high investment leverage in common stocks are subject to greater volatility in their reported surplus. In response, A.M. Best will stress the capital with higher risk charges for those companies with high investment leverage in common stocks. The current, baseline risk charge of 15% will be increased to 20% or 30% when common stocks are more than 50% or 100% of reported surplus, respectively.

Interest Rate Risk (B3)

Companies that maintain a high level of exposure to short-term cash needs—most likely those with a high gross catastrophe probable maximum loss (PML)—are the most exposed to interest rate risk. A.M. Best uses an interest-rate stress test of 120 basis points on market value. The 120-basis-point test comes from the American Academy of Actuaries RBC Task Force's study and is consistent with a 1% expected policyholder deficit.

The interest rate risk calculation includes a company's gross PML for catastrophes as the maximum exposure a company has to interest rate risk. This is done by relating the company's gross PML to its liquid assets and then relating this factor to the company's decline in market value following a 120-basis-point rise in interest rates. By relating the company's PML to all liquid assets first, A.M. Best assumes a company is no more likely to liquidate a fixed-income asset at a loss than it is likely to liquidate any other investment at a loss. However, A.M. Best has established a minimum 10% catastrophe exposure percentage applied against the company's decline in market value after a 120-basis-point rise in interest rates, recognizing that there are other reasons for a company to have a short-term need for cash.

Exhibit 8 illustrates a case in which Company B maintained a high gross PML exposure and, therefore, was subject to a potential need to sell liquid assets in a short period. As shown, the company's catastrophe exposure percentage—gross PML to liquid assets—is 30%. Based on A.M. Best's assumption that asset sales would be distributed evenly across the portfolio of liquid assets, this company would need to sell 30% of its fixed-income portfolio. As a result, A.M. Best only charges for 30% of the $13,280 in potential market depreciation, to which the fixed-income securities are exposed, resulting in a capital charge of $3,943.

A key assumption in the calculation comes from A.M. Best's process of marking bonds to market as an adjustment to reported surplus. Because A.M. Best adjusts fixed-income securities to market each year through its re-evaluation of capitalization, only the incremental risk that a capital loss will be realized over the next year needs to be considered. Any risk of lost future income will be reflected at subsequent evaluations. Therefore, only a company's short-term cash needs—such as the occurrence of its PML—would trigger a decline in capitalization over the next year.

Credit Risk (B4)

Affiliated Reinsurance: In most situations, A.M. Best will use a baseline charge of 10% for reinsurance due from domestic affiliates and a baseline charge of 10% for reinsurance due from foreign affiliates. This charge may be adjusted, based on an assessment of the affiliates' creditworthiness.

For consolidated rating units with intercompany reinsurance transactions, A.M. Best will eliminate the recoverables from the credit risk analysis of the rating unit. Recoverables from affiliates that are not in the rating unit will remain in the credit risk analysis. Recoverables from all affiliates will remain in the credit risk analysis when performing a stand-alone BCAR analysis.

Nonaffiliated Reinsurance: A.M. Best's capital model, which starts with a fixed 10% charge for nonaffiliated reinsurance recoverables, allows the analyst to assign variable risk charges based on a reinsurer's Best's Rating, which can range from a low of 2% for an A++ (Superior) reinsurer to charges in excess of 50% for suspect reinsurers. These charges are shown in **Exhibit 4**. The 100% risk charge for unrated reinsurers may be reduced if adequate additional information is provided to A.M. Best. In addition, A.M. Best will consider funds withheld or other forms of collateral as an offset to reinsurance recoverable balances. Offsets that require certain conditions before the collateral is posted might not receive an offset credit until the collateral option is exercised, since there is no access to the collateral until the threshold has been triggered.

Exhibit 4
Credit Risk Factor Applied to Recoverables*

Best's FSR of Reinsurer	Risk Factor
A++	2%
A+	4%
A	6%
A-	10%
B++	15%
B+	20%
B	30%
B-	40%
C++ and Lower	100%
Not Rated	100%

*Includes reinsurance recoverables on paid loss & LAE known case loss & LAE reserves, IBNR loss & LAE reserves, and unearned premium.

Reinsurance Dependence: Most importantly, however, A.M. Best includes an additional capital requirement, or surcharge, for insurers that analysts believe are excessively dependent on unaffiliated and foreign-affiliated reinsurance, given their lines of business and financial resources. For these insurers, A.M. Best increases the overall credit risk charge for their recoverable balances, regardless of underlying credit quality. This additional charge reflects the increased exposure to reinsurance disputes and cash-flow problems the insurer might face as a result of the higher dependence on reinsurance.

This increased exposure to dispute risk can have a severe impact on surplus. A company with recoverables equal to five times its surplus could lose 50% of its surplus if 10% of its recoverables are disputed successfully by the reinsurer. In an effort to recognize this exposure to dispute risk, A.M. Best employs two reinsurance dependence tests. The first test compares the company's unaffiliated plus foreign-affiliated recoverable-to-surplus ratio to an industry benchmark. The second test examines the company's total ceded leverage to thresholds of five, seven and 10 times surplus, resulting in risk charges of 15%, 20% and 25% of recoverables from unaffiliated and foreign-affiliated reinsurers. The company's total ceded leverage is defined as its recoverables plus ceded written premium from unaffiliated and foreign-affiliated reinsurers as a ratio to surplus. This total ceded leverage test is forward looking, since it includes not only the existing recoverables but also the potential exposure to be added in the upcoming year.

The reinsurance dependence factor may be reduced for recoverables from foreign affiliates that have demonstrated a history of substantial support and are expected to continue to provide support. In addition, the domestic company must be a significant contributor to the operations of the consolidated organization, and the foreign affiliate must be located in a jurisdiction that would not hinder the quick transfer of funds that may become necessary to support the domestic company.

Credit Enhancements to Reinsurance Recoverables: With the increased reliance on reinsurance, the ceding company faces increased credit or dispute risk exposure. In an effort to offset this increased exposure, ceding companies traditionally have required reinsurers to deposit funds with ceding companies, set up trust accounts or obtain irrevocable letters of credit. Recently, ceding companies have investigated the purchasing of credit enhancements that protect the ceding company's recoverables against the possibility of being uncollectible. If these recoverables are insured by an unaffiliated third party, A.M. Best will reduce the risk charges to reflect the reduced credit risk. However, the reinsurance dependence factor might not change if the contract doesn't cover uncollectibility resulting from a dispute.

Pools and Associations: A.M. Best's baseline model applies a 10% charge to pools and association balances. These balances might be adjusted based on the evaluation of the

creditworthiness of the pool and the state's regulatory environment. For ceded reinsurance associated with risk-free servicing-carrier business, A.M. Best doesn't charge for credit risk.

Agents' Balances and Other Receivables: A.M. Best applies a baseline 5% capital charge for agents' balances in course of collection and deferred agents' balances, as well as a 10% charge for accrued retrospective balances, although these balances will be reduced by valid collateral and contractual offsets. Any other uncollected premium balances that are concentrated within a single entity or are approaching the 90-day overdue threshold may be assigned a higher capital charge. Other receivable balances generally are assessed a 5% charge and represent a minor overall capital requirement.

Underwriting Risk Capital Factors

The baseline capital factors for each line of business are based on risk, as measured by an internal A.M. Best study that replicated the American Academy of Actuaries' Property/Casualty RBC Task Force's Report on Reserve and Underwriting Risk Factors. Both reserve-risk factors and premium-risk factors were calculated using this process.

For reserves, A.M. Best looked at the variance in incurred loss development between accident years, as well as the variance within an accident year between companies. These two measures of variance provided an indication of the volatility of loss development for each line of business. Similar calculations were made to measure the volatility in premium adequacy using a discounted underwriting profit, which was calculated by subtracting company expenses and discounted losses from earned premiums.

A.M. Best modifies both premium and reserve baseline capital factors based on a company's size. A.M. Best's analysis found greater variation within smaller companies than in larger companies for both premium and reserves. This difference was much more evident within reserve variation than in premium variation. Based on this differential, A.M. Best continues to vary its capital charges by company size.

The variation of capital factors by size is based on adjusted policyholder surplus and can be as much as a 35% reduction to the industry baseline reserve-risk capital factors and a 25% reduction to the industry baseline premium-risk capital factor. This reduction reflects the inherent flexibility and diversification of a larger company to better monitor its reserves and pricing programs. Full credit for this size differential isn't awarded in calculating the reserve-risk factor, as part of this benefit is considered in calculating each company's by-line stability factor.

Underwriting risk factors for both premiums and reserves can be impacted by various reinsurance products. The treatment of these reinsurance products varies by type of contract. By focusing on the amount of risk transferred, the analyst may increase the underwriting risk charges to reflect the disproportionate amount of risk retained vs. the amount of premium retained.

Finite quota-share contracts with loss ratio caps, corridors, sublimits and sliding-scale commissions are examples of reinsurance products that transfer away more premium than risk. This results in underwriting risk factors that are higher than the baseline factors but are applied to the reduced net premiums or reserves. This usually generates a reduction to required capital, but not as much as originally anticipated based on the reduction in premium leverage.

Retroactive adverse development covers could benefit loss and loss-adjustment expense reserve capital factors, but the available limits from the contract must be viewed in relation to any reserve deficiencies. If reserve deficiencies exist, the contract limits are applied to the deficiency first, and any remaining limit then can be applied to the capital factors.

Prospective stop-loss contracts create the need for numerous adjustments to the model, depending on where the coverage layers and limits occur relative to historical ultimates. Any loss and loss-adjustment expense layers ceded away that occur below the expected ultimate won't reduce capital factors but might reduce indicated deficiencies.

For each of the above types of reinsurance products, adjustments may be made to surplus, deficiency factors or reinsurance recoverables in addition to the modifications to the underwriting capital factors. Furthermore, if there are clauses in the contracts that threaten to cancel the contract and appear likely to be invoked, the contract may be viewed as having no risk transfer in BCAR. Although the adjustments made under these types of contracts numerically might result in a desirable BCAR, the lower quality of the company's reinsurance-enhanced surplus will be viewed negatively, resulting in a lower rating of its balance sheet strength.

Loss and Loss-Adjustment Expense Reserve Risk (B5)

To a large extent, A.M. Best's loss and loss-adjustment expense reserve risk component emphasizes adjusted reserve leverage and stability in loss development as gauges of a company's exposure to reserving errors in its book of business. Consequently, all other factors being equal, A.M. Best's capital model will generate a greater reserve capital requirement for an insurer that is more leveraged or more volatile, after adjusting for our view of its reserve adequacy, than its peer companies and vice versa.

Required capital for loss-reserve risk is generated by applying capital factors to an insurer's adjusted loss reserves for 21 distinct lines of business. To ensure equitable capital treatment among insurers, A.M. Best's model places considerable weight on a company's adjusted reserves, which emphasizes reserve adequacy and the time value of money embedded in those reserves. An insurer that historically has under-reserved will be penalized for maintaining lower reported loss reserves. A.M. Best's by-line reserve-risk factors are based on an integration of the stability of a company's case-incurred loss-development pattern, the size of the company and the risk inherent in the particular line of business. Consequently, a company's required capital for loss reserve is driven by these key factors:

Reserve Equity Adjustments: On a line-by-line basis, a company's carried loss reserves are adjusted to an economic basis that reflects A.M. Best's view of an insurer's ultimate reserves, which are discounted to their present value, recognizing the time value of money. By-line carried loss reserves are adjusted to an economic basis through two company modification factors: the reserve-deficiency factor and the discount factor.

The reserve-deficiency factor reflects A.M. Best's view of an insurer's reserve deficiency expressed as a fraction of its original reserve plus 1.0. For example, a company with a 10% reserve deficiency would show a 1.10 reserve deficiency factor in the model, whereas a company with a 20% reserve deficiency would show a 1.20 reserve deficiency factor in the model. The initial determination of reserve deficiency is based on a number of actuarial techniques used within A.M. Best's proprietary loss-reserve model, including paid and case-incurred development. In addition to the reserve model, a diagnostic analysis of Schedule P and a qualitative assessment of the company's operating environment and historical reserve development are used to arrive at A.M. Best's view of reserve deficiency. Generally, unseasoned insurers with less than five years of loss experience are assigned a minimum deficiency of 10%, while the reserves of seasoned insurers are determined relative to their own historical experience.

A number of issues can affect A.M. Best's view of a company's reserve position, including the number of reserve adjustments; the size of the adjustments; the lines of business involved;

the accident years generating the adverse development; and whether the adjustment was anticipated or unexpected. For companies of concern, a minimum deficiency factor of 10% above the actuarial best estimate will be used in the model.

In addition to assessing the company's core reserves, A.M. Best performs a separate analysis of its asbestos and environmental reserves liabilities. Any deficiency in mass-tort reserves is added to the core deficiency. For asbestos and environmental reserves, A.M. Best uses a survival ratio method, a premium market share method and a paid-loss-share method to generate an initial assessment of these reserves. Discussions with company management and a current, third-party, ground-up review then are used to supplement the initial analysis.

A discount factor, based on the payout pattern of the individual company's reserves and a 4% discount rate, is applied to the estimated ultimate loss reserves. The resulting deficiency and discount factors are applied to a company's reported by-line loss reserves to derive the company's adjusted reserves. To maintain a consistent treatment of the time value of money, all statutory discounting is treated as reserve deficiency, and credit is given through the discount factor.

Reserve Capital Factors: Once adjusted reserves have been determined by line of business, they can be multiplied by company-specific reserve capital factors to determine a company's reserve capital requirement. By-line reserve capital factors are based on the risk inherent in each line of business, scaled by the size of the company and the volatility of a company's case-incurred loss development for that line.

Stability factors are used to differentiate the volatility in a specific company's loss reserves. The stability factors are calibrated around 1.00—ranging from 0.70 to 1.30—and are calculated by line, based on the stability of the company's case-incurred loss-development pattern relative to the rest of the industry. The measurement used to judge the stability of a line of business is the coefficient of variation for case-incurred loss-development factors at each stage of development through 72 months. Companies with less than eight years of loss experience are penalized for their lack of loss experience and loss-development history.

A.M. Best views the variation in a company's loss-development pattern as a strong indicator of the risk inherent in its loss reserves and of the company's ability to make accurate projections of ultimate losses.

To calculate a company's final reserve capital factors for each line of business, the stability factors are applied to the industry baseline capital factors, adjusted to reflect the company's size. These capital factors are applied to the company's adjusted loss reserves to produce required capital charges by line of business. It should be noted that, unlike the American Academy of Actuaries study, A.M. Best didn't reduce its reserve capital factors to reflect the time value of money, as is done in the NAIC's risk-based capital calculation. This is because A.M. Best already accounts for the time value of money in its calculation of adjusted loss reserves.

In addition, through a number of supplemental data sources, A.M. Best obtains additional by-line information for certain statutory lines that are too broad, such as the other liability line, which may have a multitude of risk classes. To the extent that an insurer provides a more detailed breakout of its loss reserves, A.M. Best will apply more appropriate reserve capital factors. Furthermore, a company's reserve-risk factor may be adjusted within the casualty lines for loss-sensitive business.

Retroactive Reinsurance: Any time-value-of-money gain on retroactive reinsurance is

removed from surplus, because the model has already credited the gain to surplus through the reserve-equity adjustment. The reserve equity adjustment represents the embedded value in reserves because of the discounting of those reserves for the time value of money. Failure to remove the surplus gain booked by the company would result in a double counting of the embedded equity.

Because BCAR already gives credit for loss-reserve equity, retroactive reinsurance provides little benefit unless it also includes adverse-development protection. There is no true economic gain other than the risk protection awarded for stop-loss protection above the expected ultimate, and that benefit is reflected with a risk factor adjustment. In fact, in some cases where investment yields above those earned by the company are guaranteed to the reinsurer, these contracts can be punitive in A.M. Best's view of capitalization.

Growth Charge: The reserve growth charge reflects the additional risk that typically comes from growth and is based on the growth in a company's exposures. The growth charge applied to the loss reserve aggregate required capital reflects the substantial risk a company faces in the claims and reserving areas during a time of significant growth.

A growth charge is applied when a company's growth in exposure is in excess of industry thresholds. Comparisons to the industry thresholds are made on a one-year basis and a three-year annualized basis. The growth charge will be based on the comparison that generates the greatest amount in excess of the industry thresholds. Growth in exposures can be based on policy count information as disclosed in A.M. Best's Supplemental Rating Questionnaire or based on company-supplied exposure information.

Even though the growth charge is intended to be based on exposure growth, this information isn't available in the annual statement. Therefore, the model initially calculates the company's growth charge based on the growth in unaffiliated gross premiums written. The initial calculation compares the company's most recent year premium growth rate to an industry one-year premium growth threshold and then compares the company's three-year annualized premium growth rate to the industry three-year annualized premium growth threshold. The comparison that generates the greatest amount of premium growth in excess of the corresponding industry threshold will generate the growth charge that is used in the analysis. These thresholds are chosen based on rate changes in the industry during those time periods plus an allowance for moderate growth in exposure.

Exhibit 5 shows the impact that rate changes can have on calculating the growth factor. In this example, the company's premiums grew at a substantial 25% during the most recent year, generating an initial growth charge of 1.16. However, subsequent examination of policy counts shows that the exposure really only grew at a rate of 10%, which only generates a growth charge of 1.04. Since policy counts are believed to be a better proxy for exposure growth for this company, the 1.04 growth factor is the growth charge to be used in the model for this example.

When rates are declining, the growth factor based on declining premium would be lower than the growth factor based upon exposures. In this situation, the growth factor based upon exposures would once again replace the indicated growth factor based on premiums.

Diversification Credit: The diversification factor reflects the reduction in overall reserve risk within a well-diversified portfolio of loss reserves. This factor is calculated similarly to the NAIC's risk-based capital formula. The final required capital charge is multiplied by a factor of (.70 + .30 times % reserves in the largest line of business).However, in the case where

a company has operations that are spread thinly across many lines of business with small amounts of reserves, this diversification benefit is reduced.

Long Duration Contracts: Long duration contracts are defined as contracts having terms in force for more than 13 months and for which the insurer cannot cancel or increase the premium during the life of the contract. Long duration contracts create larger unearned premium reserves than contracts with one-year terms. This creates a larger pricing risk in the unearned premium reserve than anticipated for contracts having terms of one year or less. In order to capture this increased risk, the long duration unearned premiums will be included on the loss reserve page. The unearned premiums are included on the loss reserve page instead of the pricing risk page in an effort to reflect diversification from business being written in the future versus business written in the past. A baseline factor of 0.25 will be applied to the unearned premiums and may be adjusted based on the profitability of the book.

In the case of a contractual liability policy (CLIP), where the insurer guarantees the liabilities of another entity for a fee, the underlying unearned premium that is being guaranteed will be added to the loss reserve page instead of the unearned CLIP premium.

Other adjustments such as credit risk, unearned premium equity and written premiums will be made in an effort to capture all of the risks associated with writing long duration contracts. These adjustments will vary based on the terms of the contracts and the structure of the business.

Net Premiums Written Risk (B6)

Required capital for premiums written risk within A.M. Best's capital model is generated by applying premium capital factors to an insurer's premiums written for 21 distinct Schedule P lines of business. Premium risk capital factors are based on the integration of the risk inherent in a particular line of business, the company's profitability in that line and the company's size. The company's profitability is reflected in premium adequacy factors.

To calculate the company premium capital factors for each line of business, the company premium adequacy factors are applied to the industry baseline premium capital factors, adjusted to reflect the company's size. These capital factors then are applied to the company's net premiums written to produce required premium capital charges by line of business.

Exhibit 5
High Premium Growth Example
($ Thousands)

Calendar Year	Gross Premiums Written	Policy Count
2011	$100,000	1,000
2012	100,000	1,000
2013	100,000	1,000
2014	125,000	1,100
One-Year Growth Rate:	25.0%	10.0%
Three-Year Average Growth Rate:	7.7%	3.2%
	Industry Growth Thresholds	
One-Year Growth Rate:	9%	6%
Three-Year Average Growth Rate:	9%	6%
	Indicated Growth Factors	
One-Year Growth Rate:	1.16	1.04
Three-Year Average Growth Rate:	1.00	1.00

Source: A.M. Best Co.

The premium adequacy factors are calibrated around 1.00—ranging from 0.80 to 1.20— and are calculated by line, based on the profitability of the company's business relative to other companies that have written that Schedule P line of business. The measurement used to judge the profitability of a line of business is a three-year reported accident-year combined ratio, using the company's overall underwriting expense ratio. Adjustments may be made to the premium adequacy factors to reflect reserve-adequacy levels within the accident-year results.

To account for any changes in current market pricing, the model uses an underwriting cycle adjustment that reflects the impact current pricing has on underwriting risk. The underwriting cycle factor is applied to the premium adequacy factor, and the result can increase or decrease premium capital factors

by as much as 10% to reflect the current market conditions. This adjustment is necessary because the profitability adjustment uses a three-year history, whereas the premium risk looks forward one year.

A.M. Best believes the profitability of a company's business and the overall industry pricing levels are good indicators of the level of risk margin expected within a company's future business. Those companies with better historical profitability are expected to maintain a greater risk margin in the pricing and underwriting of future business and, therefore, require a lower premium capital factor.

Similar to the loss-reserve component, A.M. Best may apply more appropriate capital factors for certain broad-line captions that contain a multitude of risk classes. Furthermore, a company's premium risk factor may be adjusted within A.M. Best's model to reflect reduced charges within the casualty lines for loss-sensitive business, retroactive reinsurance, aggregate stop loss or finite quota-share reinsurance.

Two final adjustments are made to the aggregation of the by-line required premium capital charge. These adjustments include a charge to reflect the additional risk that typically comes from growth and the benefit derived from a more diversified book of business.

Growth Charge: This charge reflects the substantial risk a company faces when bringing in substantial new business based on weaker underwriting and pricing standards or lack of market knowledge. The calculation of the premium growth charge is identical to the calculation of reserve growth charges and is applied directly to the aggregate required capital for premium risk.

In the cases of both the premium and reserve growth charges, adjustments are made to reflect issues within growth such as substantial, historical control of the book of business, as well as the historical profitability and stability of the book of business.

Diversification Credit: The diversification factor reflects the reduction in overall premium risk within a well-diversified book of business. This factor is calculated similarly to the NAIC's RBC formula. The final required premium charge is multiplied by a factor of (.70 + .30 times % premium in the largest line of business). However, in the case where a company has operations that are spread thinly across many lines of business with small amounts of premium, this diversification benefit is reduced.

Business Risk (B7)

Like the NAIC, A.M. Best applies a nominal 1% capital charge to several off-balance-sheet items, including balances associated with noncontrolled assets, guarantees for affiliates, contingent liabilities, long-term lease obligations and interest rate swaps. This charge represents a starting point for business risk capital charges assessed based on qualitative assessments of off-balance-sheet liabilities that might encumber a company's surplus growth or preservation.

After gaining an understanding of the inherent risk relating to off-balance-sheet items, the analyst will modify the capital charge to reflect the appropriate level of risk. An example of this is the risk associated with credit default swaps, for which the analyst will assess the credit quality of the underlying portfolio of counterparties to determine the appropriate capital charge. In such an example, the capital charge could be increased to as high as 100% if recovery is unlikely from the various counterparties.

Pension plans and other post-employment/retirement obligations will be charged for the unfunded portion of these obligations in the baseline calculation of required capital for business risk. However, this charge can be reduced for any liabilities already shown on the company's balance sheet that are designated for the unfunded portion of these obligations. The charge also may be reduced to reflect the company's planned annual reduction of the remaining unfunded obligations. For those companies whose unfunded obligations reside at

an affiliated company, the company's share of the unfunded obligation will not be factored directly into the company's BCAR analysis but will be factored into the rating discussion.

Derivatives with a liability value on the balance sheet will initially be placed on the business risk page with a 100% risk factor. However, the company's entire derivative program will be evaluated in the manner discussed earlier with the treatment of derivative assets.

Although many of these items are classified appropriately in the business risk component, adjustments for these items may alternatively be included in the adjusted surplus component.

Adjusted Surplus (APHS)

A.M. Best makes a number of adjustments to a company's reported surplus within the capital model to provide a more economic and comparable basis for evaluating capital adequacy. These adjustments even the playing field and compensate for certain economic values not reflected in the statutory financials. Reported surplus is modified for equity adjustments related to unearned premiums, loss reserves and fixed-income assets on an after-tax basis, based on a three-year-average effective tax rate that can be modified to reflect the company's projected medium-term tax rate.

Unearned Premium Equity: In the case of unearned premiums, A.M. Best increases reported surplus to include an estimated asset for deferred acquisition costs similar to that reflected in GAAP (generally accepted accounting principles) financials. This equity adjustment enables A.M. Best to place a growing company, which is penalized for heavy prepaid acquisition costs, on a comparable basis with a mature company, which has flat or declining acquisition costs.

To the extent that a company's book of business generates a discounted accident-year loss and loss-adjustment-expense ratio in excess of 100%, A.M. Best won't recognize any equity in unearned premiums. For companies with discounted accident-year loss and loss-adjustment-expense ratios below 100%, but still higher than their prepaid underwriting expense structure will allow, A.M. Best will recognize only a pro rata share of the deferred acquisition costs as equity.

A risk charge is applied to the unearned premiums to reflect the pricing risk inherent in the rates charged for business written last year, but still unearned as of the current year end, and the charge is subtracted from the unearned premium equity. This pricing risk is separate from the risk charged on the premium risk page, which attempts to capture the pricing risk associated with the business that will be written in the upcoming year. The model uses the current-year written premium as a proxy for the upcoming year's writings.

Loss Reserve Equity: A.M. Best adjusts surplus to reflect the net equity embedded within loss reserves. This equity represents the difference between a company's economic reserves, which reflects A.M. Best's view of ultimate reserves on a discounted basis, and carried reserves. The adjustment, which can be sizable for a casualty insurer, enables A.M. Best to even the playing field and better differentiate companies that have historically under-reserved from those that have strong loss-reserve positions.

Any reserve equity gain from reinsurance transactions is removed from surplus, since the equity already is awarded through the calculation of loss-reserve equity. This is consistent with A.M. Best's treatment of statutory discounting and with efforts to treat loss-reserve equity consistently. The best example of this is retroactive reinsurance through a loss-portfolio transfer in which a company often pays the reinsurer assets equal to the present value of the loss-reserve portfolio plus a risk margin and then cedes the full-value loss reserves, producing a gain to surplus. However, because of accounting procedures, these loss reserves remain on the primary company's books, and the ceded reserves are treated as a negative liability.

Since the ceded reserves remain within the balance-sheet reserves, some form of adjustment is needed. Otherwise, the time value of money would be credited twice—once within surplus and once within the calculation of loss-reserve equity. In this case, A.M. Best removes the surplus gain from surplus, and the equity within these reserves is awarded through the discount factor within the calculation of reserve equity. A reserve risk charge still applies to these reinsured losses. Without additional stop loss, the primary company remains exposed to any potential adverse loss development on these reserves.

Fixed-Income Assets: Surplus also is adjusted to reflect an insurer's fixed-income securities' market value. This allows for a better view of a company's current economic capital position. The pretax impact of this adjustment is limited to +10% and -15% of surplus, and the result is then tax affected.

The limits represent the fact that it is unlikely that an insurer would need to sell all of its fixed-income securities at the current market value. Unrealized losses in excess of the limit would require an additional analysis of whether the loss is believed to be temporary or permanent; whether the underlying assets still are performing; and whether there is a near-term cash-flow requirement and sufficient cash flow or liquidity to handle this need.

Debt and Surplus Notes: A.M. Best's capital model emphasizes permanent capital and consequently will reduce a company's reported surplus for encumbered capital, which includes surplus notes and future debt-service requirements of an affiliated holding company. This reduction, in whole or in part, depends on the magnitude and dependence an insurance group has on debt-like instruments and their associated repayment features.

On a qualitative basis, issues such as where the debt is held vs. where the cash is used; the existence of other sources of income to offset the cost of debt; fixed-charge coverage; and the overall level of debt relative to the organization's total capital all are considered.

For example, when debt is issued at the holding company, but the cash is held at the operating insurance company, even though the cash is given full credit in the BCAR analysis of the operating company, the actual rating of the operating company could be limited by the evaluation of the financial leverage and earnings coverage at the holding company.

Occurrence of a Catastrophe: A standardized incorporation of a company's PML in the model highlights A.M. Best's concern that catastrophes are the No. 1 threat to solvency in the industry because of the significant, rapid and unexpected impact that can occur. While many other exposures can affect solvency, no single exposure can affect policyholder security more instantaneously than catastrophes.

To reflect this concern, all companies are subjected to a reduction in their reported surplus based on the higher of a 100-year wind net PML, a 250-year earthquake net PML or a recent, large loss within the calculation of BCAR. The net PML, which is based on worldwide exposure, is tax-affected with the maximum potential federal income tax rate for the appropriate jurisdiction. The determination of these losses will be provided through A.M. Best's Supplemental Rating Questionnaire and through discussions with management.

The information filed by companies within the Supplemental Rating Questionnaire is critical to the assessment of their capital strength. However, like any other component within BCAR, the PML response can be adjusted downward to reflect additional information provided by management. The PML response also can be adjusted upward if A.M. Best determines additional conservatism should be taken into consideration based on a review of the catastrophe study.

For those companies that do not provide a modeled PML, A.M. Best may use other information to estimate a potential large loss, such as total policy limits or total insured value in a state,

region or county. For casualty writers, an estimate of a catastrophic casualty loss may be used in the analysis of balance sheet strength

Terrorism: Information on terrorism risk is provided to A.M. Best in its Supplemental Rating Questionnaire. This information is provided both gross and net of reinsurance and the federal backstop. From this information, A.M. Best will calculate a charge to reported surplus that will be included in the published BCAR if the terrorism charge is greater than the natural catastrophe PML. The terrorism charge considers the probability of a large-scale attack, the location of the attack, the number of exposure concentrations, the size of the exposures relative to surplus, data quality and any available loss mitigation.

Stress Test Adjustments: A.M. Best may reduce a company's reported surplus further as part of its sensitivity analysis to reflect a number of stress-test scenarios. This analysis measures an insurer's prospective capital needs stemming from a number of off-balance-sheet items, including commitments or guarantees to affiliates; outstanding litigation; excessive catastrophe losses not contained within an insurer's reinsurance program; and continued operating losses.

Companies with a high natural catastrophe exposure on a gross basis and a low exposure on a net basis will be subjected to additional stress tests related to the occurrence of such an event. Assuming an event occurred, reinsurance recoverables would increase by the difference in the gross and net PML, and a minimum of 40% of this difference will be added to reinsurance recoverables. This adjustment also might increase the reinsurance dependence factor. In addition, in determining the appropriate risk charge for these recoverables, A.M. Best will assume the ratings of the reinsurers will remain unchanged as a result of the event. The last adjustment to be made will be the addition of 40% of the net PML to the loss reserves. This amount may be adjusted based upon the reinsurance structure.

Companies with an exposure to terrorism also will be subjected to a stress test that looks at the sensitivity of the company's capitalization to the occurrence of a terrorism event, assuming the federal backstop is not available. This test carries greater emphasis as the expiration date of the federal backstop approaches. Details of the terrorism stress test can be found in the A.M. Best methodology report titled *The Treatment of Terrorism Risk in the Rating Evaluation*.

Although these stress-tested BCAR results aren't published, they do impact A.M. Best's view of capitalization.

A.M. Best's Capital Adequacy Model: Two-Company Illustration

The following exhibits illustrate the key aspects of the BCAR calculation for two hypothetical insurers with different business profiles. This two-company example highlights the factors that drive their BCAR results, provides examples of company-specific adjustments and gives an indication of their implied capital strength ratings based on their capital positions.

The BCAR summary section shown in the two-company illustration is intended to reflect the components of a company's net required capital generated by A.M. Best's BCAR model. Using Company A's BCAR output, the following observations can be made about its net capital requirement, adjusted surplus and BCAR ratio.

Company A

Net Required Capital

In total, before the covariance adjustment, Company A's gross required capital generated from A.M. Best's capital adequacy model is $44.1 million; consisting of 68% related to underwriting risk, 32% related to asset risk and less than 1% related to business risk.

Asset risk capital consists of investment risk, credit risk and interest rate risk capital. Total asset risk capital of $14.1 million consists of: (B1) fixed-income security capital of $3.0 million; (B2) equity security capital of $6.0 million; (B3) interest rate capital of $1.2 million; and (B4) credit risk capital of $3.9 million. Typical of most insurers, Company A's equity security capital requirement is the largest risk component within the asset risk category.

Underwriting risk capital consists of loss reserve risk (B5) and net written premium risk (B6) with capital requirements of $20.5 million and $9.5 million, respectively. Typical of most insurers, underwriting risk generates two-thirds to three-quarters of the company's total gross required capital.

Business risk capital (B7) consists of off-balance-sheet risks and typically generates nominal capital requirement. Although not capital intensive, the off-balance-sheet components of business risk can have a material impact on surplus.

Consistent with the NAIC risk-based capital model, A.M. Best uses a covariance adjustment recognizing that each of the underlying risks aren't likely to develop simultaneously and aren't fully interdependent or correlated. Company A's net required capital of $25.4 million reflects a 42% covariance reduction to its gross required capital. Covariance reductions generally range from 35% to 45% for most insurers.

Net required capital, which is calculated as the square root of the sum of the required capital for each of the risk components squared (excluding business risk), is substantially less than the simple sum of the component capital charges.

Adjusted Surplus

Company A's adjusted surplus of $32.6 million used within A.M. Best's capital model reflects a 32% increase to the reported surplus position after considering the three equity adjustments related to its unearned premiums, loss reserves and fixed-income securities on an after-tax basis.

Best's Capital Adequacy Ratio

The BCAR ratio is simply adjusted surplus divided by net required capital. Company A's BCAR ratio of 128.1 represents the value that would be reflected within each of A.M. Best's publications, including Best's Key Rating Guide and Best's Insurance Reports.

Company A's BCAR result is used for interpreting Company A's implied rating from a capitalization perspective only. On a purely quantitative basis, A.M. Best's risk-adjusted capitalization guidelines suggest Company A's BCAR ratio supports a rating up to B++ (Good).

Specific Company Commentary

Company A, which is a small commercial casualty insurance company, focuses its current underwriting on midsize manufacturing business written on a loss-sensitive basis. The company maintains its capitalization at a BCAR of 128.1, which lags many of its commercial lines peers but supports its current B++ rating. The company's capital position reflects its much higher than average reserve leverage; heavy use of reinsurance; and aggressive investment portfolio, which are tempered considerably by its less-risky, retrospectively rated business and the absence of pyramided capital, with the company affiliates owned directly by a common holding-company parent. Further, although almost 50% of the company's gross capital requirement is generated from loss reserves, it also receives a larger adjustment to reported surplus after considering the buildup of substantial economic value embedded within its long-tail reserves.

The company maintains an aggressive investment strategy, with holdings in junk bonds, mortgage loans, real estate and common stocks aggregating more than 250% of surplus. Because of its long-tail business, the company's fixed-income portfolio has been structured

long term and thus faces greater market-valuation sensitivity to rising interest rates. However, given the company's modest short-term needs for cash, interest-rate risk is minimal.

Capital required for credit risk is higher because of the company's large amount of reinsurance recoverables. These have been collateralized partially by letters of credit or generally are placed with high-quality domestic participants. Despite these adjustments, the company still is very dependent on reinsurance, with adjusted recoverables representing more than 200% of surplus and consequently generating a reinsurance dependence surcharge.

Loss-reserve leverage of four times surplus is 50% higher than companies of a similar size and mix of business. The company's loss reserves have an indicated overall deficiency of 14%, which is impacted heavily by its other liability business that has experienced considerable emergence of environmental and asbestos claims in its pre-1984 reserves. This net reserve deficiency also implies that ceded unpaid reserves are understated and generates an increase to recoverables on the credit risk page. The company's overall reserve deficiency, however, is more than offset by the buildup of substantial economic value within its long-tail reserves. Further, the company's overall reserve capital charge has been tempered considerably, reflecting significant adjustments made for its substantial, loss-sensitive national account business. The company's capital requirements for premium are much less than those of its peers because its comparable premium leverage of 1.5 times surplus is tempered by its substantial block of less-risky loss-sensitive business.

Company B

Company B, a large, personal-lines insurance company, focuses its current underwriting on personal automobile and homeowners business, principally in the mid-Atlantic region, and recently has been expanding aggressively into the Northeast. The company maintains thin risk-adjusted capitalization with a BCAR of 102, which is well below its personal-lines peers and marginally supports

Exhibit 6
A.M. Best's Capital Adequacy Model–Two Company Illustration
($ Thousands)

Recap of Net Required Capital (NRC)

	Company A		Company B	
Risk Component	**Required Capital Amount**	**% Gross Required Capital**	**Required Capital Amount**	**% Gross Required Capital**
Asset Risk:				
(B1) Fixed Income Securities Risk	$2,955	7	$2,521	1
(B2) Equity Securities Risk	5,989	13	27,722	16
Investment Risk	8,944	20	30,243	17
(B3) Interest Rate Risk	1,245	3	3,943	2
Subtotal	10,189	23	34,186	19
(B4) Credit Risk	3,942	9	4,091	2
Total Asset Risk	14,131	32	38,277	21
Underwriting Risk:				
(B5) Loss & LAE Reserves Risk	20,488	46	59,829	34
(B6) Net Premiums Written Risk	9,508	22	79,351	45
Total Underwriting Risk	29,996	68	139,180	79
(B7) Business Risk	16	0	9	0
Gross Required Capital (GRC)	**44,143**	**100**	**177,466**	**100**
Less: Covariance Adjustment	**18,733**	**42**	**72,960**	**41**
Net Required Capital (NRC)	**25,410**	**58**	**104,506**	**59**

Recap of Adjusted Policyholder Surplus (APHS)

Surplus Adjustment	**Amount**	**% to Reported Surplus**	**Amount**	**% to Reported Surplus**
Reported Surplus (PHS)	$24,650	100	$109,900	100
Equity Adjustments:				
Unearned Premium Reserve Equity	2,835	11	10,100	9
Loss Reserves Equity	4,603	19	5,093	5
Fixed Income Equity	473	2	953	1
Subtotal	32,561	132	126,046	115
Other Adjustments:				
Surplus Notes	0	0	0	0
Off-Balance-Sheet Losses	0	0	0	0
Future Dividends	0	0	0	0
Potential Losses (incl. Catastrophes)	0	0	19,500	18
Adjusted Surplus (APHS)	32,561	132	106,546	97

Effective Tax Rate = 20.0%

A.M. Best's Capital Adequacy Ratio	**Company A**	**Company B**
BCAR (APHS/NRC)	128.1	102.0

Source: A.M. Best Co.

Exhibit 7
Investment Risk (B1/B2)
($ Thousands)

Investments	Company A (1) Statement Value	(2) Asset Risk Factor (%)	(3) (1)*(2) Required Capital	Company B (1) Statement Value	(2) Asset Risk Factor (%)	(3) (1)*(2) Required Capital
Bonds:						
U.S. Gov't.	$21,410	0.0	$0	$88,700	0.0	0
Inv. Grade (Class 1-2)	97,280	1.0(1)	973	226,300	1.0(1)	2,263
Below Inv. Grade (Class 3-6)	18,790	3.9(1)	733	0	3.0	0
Afffiliated	1,000	20.0(2)	200	0	100.0	0
Total Bonds	**138,480**	**1.4**	**$1,906**	**315,000**	**0.7**	**$2,263**
Preferred Stocks:						
Non-affiliated	1,650	15.0	248	0	15.0	0
Affiliated	0	100.0	0	0	100.0	0
Total Preferred Stocks	**1,650**	**15.0**	**248**	**0**	**0.0**	**0**
Common Stocks:						
Non-affiliated	25,220	15.0	3,783	400	15.0	60
Affiliated	0	100.0	0	35,400	70.1(3)	24,815
Total Common Stocks	**25,220**	**15.0**	**3,783**	**35,800**	**69.5**	**24,875**
Mortgage Loans	12,750	5.0	638	0	5.0	0
Real Estate	5,260	18.6(1)	978	500	20.0	100
Cash	1,040	0.3	3	2,800	0.3	8
Short Term Investments	0	1.0	0	0	1.0	0
Derivative Assets	0	100.0	0	0	100.0	0
Sec. Lending Reinvested Collateral	0	10.0	0	0	10.0	0
Other Investments	770	20.0	154	0	20.0	0
Total Investments	$185,170	4.2	$7,710	$354,100	7.7	$27,246
Spread of Risk Factor			x 1.16			x 1.11
Investment-Risk Required Capital			$8,944			$30,243

Notes:
(1) Reflects a blended capital factor because of multiple captions that were collapsed for presentation.
(2) Reduced bond affiliate charge from 100% to 20% to reflect special purpose nature of investment in affiliate.
(3) Reduced affiliated common stock charge from 100% to 70.1%, reflecting "excess" capital in downstream life/health affiliate.
Source: A.M. Best Co.

Exhibit 8
Interest Rate Risk (B3)
($ Thousands)

Company A

Fixed Income Security	Estimated Duration	Market Value	120 B.P. Interest-Rate Rise	Potential Market Depreciation	% Catastrophe Exposure	Interest-Rate Risk Capital
Bonds	6.5	$138,970	1.20%	$10,840	10%	$1,084
Preferred Stocks	7.6	1,675	1.20	153	10	15
Mortgage Loans	9.5	12,826	1.20	1,462	10	146
Totals		**$153,471**		**$12,455**		**$1,245**
Catastrophe Exposure Percentage Calculation						
Gross PML	$0	Liquid Assets	$179,140	PML/Liquid Assets	10%	Minimum of 10%

Company B

Fixed Income Security	Estimated Duration	Market Value	120 B.P. Interest-Rate Rise	Potential Market Depreciation	% Catastrophe Exposure	Interest-Rate Risk Capital
Bonds	3.5	$316,191	1.20%	$13,280	30%	$3,943
Preferred Stocks	4.3	0	1.20	-	30	-
Mortgage Loans	6.5	0	1.20	-	30	-
Totals		**$316,191**		**$13,280**		**$3,943**
Catastrophe Exposure Percentage Calculation:						
Gross PML	$105,000	Liquid Assets	$353,600	PML/Liquid Assets	30%	Minimum of 10%

Source: A.M. Best Co.

its current rating of B+ (Good).The company's weaker relative capital position reflects its higher premium leverage; aggressive growth of its business in recent years; and dependence on pyramided capital, somewhat offset by its conservative investment portfolio. In addition, the company's gross probable maximum loss (PML) from a catastrophe occurrence is high. Although its gross PML is tempered by a costly reinsurance program, as well as by associated tax benefits, its exposure to catastrophes on a net PML basis remains high at 18% of reported surplus.

Exhibit 9
Credit Risk (B4)
($ Thousands)

Company A

Investments	(1) Statement Value	(2) Increase for Reserve Deficiency	(3) Adjustment	(4) (1)+(2)+(3) Adjusted Amount	(5) Asset Risk Factor (%)	(6) (4)*(5) Credit Required Capital	(7) Reins Dependence Factor	(8) (6)*[(7) - 1.0] Indicated Reins Dependence Req Capital	(9) (4) * 1% Minimum Reins Dependence Req Capital	(10) (6)+Max[(8),(9)] Total Required Capital
Receivable Balances:										
Gross Agent Balances	$919	-	$0	$919	5.0	$46	-	-	-	$46
Reinsurance Recoverables:										
Foreign Affiliates	0	0	0	0	10.0	0	1.250	0	0	0
Domestic Affiliates	0	0	0	0	10.0	0	1.000	0	0	0
U.S. Insurers/U.S. Branches	37,950	3,985	0	41,935	5.0 (1)	2,097	1.250	524	419	2,621
Pools & Asociations	14,990	1,574	(10,000) (2)	6,564	10.0	656	1.250	164	66	820
All Other Insurers	10,070	1,057	0	11,127	10.0	1,113	1.250	278	111	1,391
Less: Sch F Provision	2,430	0	0	2,430	10.0	243	1.250	61	0	304
Less: Funds Held by Co.	0	0	0	0	10.0	0	1.188	0	0	0
Less: LOCs & Trusts	0	0	6,690 (3)	6,690	9.0 (4)	602	1.188	113	0	715
Net Reinsurance Recoverables	**60,580**	**6,616**	**(16,690)**	**50,506**	**6.0**	**3,021**		**792**	**596**	**3,813**
All Other Receivables	1,809	-	0	1,809	4.6 (5)	83	-	-	-	83
Company Totals	**$63,308**	**$6,616**	**($16,690)**	**$53,234**	**5.9**	**$3,150**	**-**	**$792**	**$596**	**$3,942**

Company B

Investments	(1) Statement Value	(2) Increase for Reserve Deficiency	(3) Adjustment	(4) (1)+(2)+(3) Adjusted Amount	(5) Asset Risk Factor (%)	(6) (4)*(5) Credit Required Capital	(7) Reins Dependence Factor	(8) (6)*[(7) - 1.0] Indicated Reins Dependence Req Capital	(9) (4) * 1% Minimum Reins Dependence Req Capital	(10) (6)+Max[(8),(9)] Total Required Capital
Receivable Balances:										
Gross Agent Balances	$16,600	-	$0	$16,600	5.0	$830	-	-	-	$830
Reinsurance Recoverables:										
Foreign Affiliates	0	0	0	0	10.0	0	1.000	0	0	0
Domestic Affiliates	0	0	0	0	10.0	0	1.000	0	0	0
U.S. Insurers/U.S. Branches	17,600	440	0	18,040	8.5 (1)	1,540	1.000	0	180	1,720
Pools & Asociations	0	0	0	0	10.0	0	1.000	0	0	0
All Other Insurers	3,100	78	0	3,178	10.0	318	1.000	0	32	350
Less: Sch F Provision	100	0	0	100	10.0	10	1.000	0	0	10
Less: Funds Held by Co.	0	0	0	0	10.0	0	1.000	0	0	0
Less: LOCs & Trusts	0	0	0	0	9.0 (4)	0	1.000	0	0	0
Net Reinsurance Recoverables	**20,600**	**518**	**0**	**21,118**	**8.8**	**1,848**		**0**	**212**	**2,060**
All Other Receivables	27,300	-	0	27,300	4.4 (5)	1,201	-	-	-	1,201
Company Totals	**$64,500**	**$518**	**$0**	**$65,018**	**6.0**	**$3,879**	**-**	**$0**	**$212**	**$4,091**

Notes:
(1) Adjusted reinsurance recoverable charge to reflect the A.M. Best financial strength ratings of the reinsurance participants.
(2) Removed $10 million of recoverables due from pools and associations in connection with risk-free servicing carrier business.
(3) Credit for acceptable letters of credit for foreign recoverables. Analysis performed by reinsurer and credit cannot exceed amount of uncollateralized recoverable.
(4) Risk charge for acceptable letters of credit and trusts capped a 90% of the risk factor charged to the corresponding recoverables.
(5) Reflects a blended capital factor because of multiple categories that that were collapsed for presentation.
Source: A.M. Best Co.

Exhibit 10

Loss & Loss-Adjustment Expense Reserve Risk (B5)

($ Thousands)

Company A

Schedule P Line	(1) Carried Reserves %	(2) Carried Reserves $ Amount	(3) Deficiency Factor	(4) Discount Factor	(5) Adjusted Factor (3)*(4)	(6) Adjusted Reserves (2)*(5)	(7) Baseline Capital Factor	(8) Company Size Factor	(9) Company Stability Factor	(10) Capital Factor (7)*(8)*(9)	(11) Required Capital (6)*(10)
Homeowners/Farmowners	0	0	1.00	1.00	1.00	0	0.37	0.92	1.00	0.34	0
Personal Auto Liability	0	0	1.00	1.00	1.00	0	0.38	0.92	1.00	0.35	0
Commercial Auto Liability	11	10,500	1.05	0.89	0.93	9,812	0.38	0.92	1.10	0.39	3,803
Workers' Compensation	39.8	38,100	1.10	0.79	0.87	33,109	0.39	0.92	0.85	0.23 [1]	7,615
Commercial Multiperil	14.9	14,220	1.08	0.85	0.92	13,054	0.40	0.92	0.98	0.36	4,687
Medical Prof Liab - Occurence	0	0	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
Medical Prof Liab - Claims Made	0	0	1.00	1.00	1.00	0	0.44	0.92	1.00	0.40	0
Special Liability	0	0	1.00	1.00	1.00	0	0.45	0.92	1.00	0.41	0
Other Liability - Occurence	18.6	17,820	1.35	0.82	1.11	19,727	0.45	0.92	1.15	0.27 [1]	5,326
Other Liability - Claims Made	15.8	15,110	1.10	0.86	0.95	14,294	0.42	0.92	1.03	0.25 [1]	3,574
Products Liab - Occurrence	0	0	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
Products Liab - Claims Made	0	0	1.00	1.00	1.00	0	0.43	0.92	1.00	0.39	0
Property	0	0	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Auto Physical Damage	0	0	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Fidelity & Surety/Guaranty	0	0	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Other	0	0	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
International	0	0	1.00	1.00	1.00	0	0.59	0.92	1.00	0.54	0
Reinsurance A	0	0	1.00	1.00	1.00	0	0.45	0.92	1.00	0.42	0
Reinsurance B	0	0	1.00	1.00	1.00	0	0.51	0.92	1.00	0.47	0
Reinsurance C	0	0	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
Warranty	0	0	1.00	1.00	1.00	0	0.48	0.92	1.00	0.44	0
Long Duration Contract UPR	0	0	1.00	1.00	1.00	0	0.25	1.00	1.00	0.25	0
Total	**100**	**$95,750**	**1.14**	**0.83**	**0.94**	**$89,996**				**0.28**	**$25,005**
							Growth Factor				**x 1.00**
							Diversification Factor				**x 0.82**
							Adjusted Reserve Capital				**$20,488**

Company B

Schedule P Line	(1) Carried Reserves %	(2) Carried Reserves $ Amount	(3) Deficiency Factor	(4) Discount Factor	(5) Adjusted Factor (3)*(4)	(6) Adjusted Reserves (2)*(5)	(7) Baseline Capital Factor	(8) Company Size Factor	(9) Company Stability Factor	(10) Capital Factor (7)*(8)*(9)	(11) Required Capital (6)*(10)
Homeowners/Farmowners	15	26,100	1.00	0.95	0.95	24,795	0.37	0.86	0.99	0.32	7,854
Personal Auto Liability	73.2	127,700	1.05	0.93	0.98	124,699	0.38	0.86	1.05	0.34	42,848
Commercial Auto Liability	0	0	1.00	1.00	1.00	0	0.38	0.86	1.00	0.33	0
Workers' Compensation	9.6	16,700	1.10	0.81	0.89	14,880	0.39	0.86	1.10	0.37	5,439
Commercial Multiperil	0	0	1.00	1.00	1.00	0	0.40	0.86	1.00	0.34	0
Medical Prof Liab - Occurence	0	0	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
Medical Prof Liab - Claims Made	0	0	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
Special Liability	0	0	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Other Liability - Occurence	0	0	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Other Liability - Claims Made	0	0	1.00	1.00	1.00	0	0.42	0.86	1.00	0.36	0
Products Liab - Occurrence	0	0	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
Products Liab - Claims Made	0	0	1.00	1.00	1.00	0	0.43	0.86	1.00	0.37	0
Property	0	0	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
Auto Physical Damage	2.3	4,000	1.00	0.94	0.94	3,760	0.44	0.86	1.00	0.38	1,438
Fidelity & Surety/Guaranty	0	0	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
Other	0	0	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
International	0	0	1.00	1.00	1.00	0	0.59	0.86	1.00	0.51	0
Reinsurance A	0	0	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Reinsurance B	0	0	1.00	1.00	1.00	0	0.51	0.86	1.00	0.44	0
Reinsurance C	0	0	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
Warranty	0	0	1.00	1.00	1.00	0	0.48	0.86	1.00	0.42	0
Long Duration Contract UPR	0	0	1.00	1.00	1.00	0	0.25	1.00	1.00	0.25	0
Total	**100**	**$174,500**	**1.05**	**0.92**	**0.96**	**$168,134**				**0.34**	**$57,579**
							Growth Factor				**x 1.13**
							Diversification Factor				**x 0.92**
							Adjusted Reserve Capital				**$59,829**

(1) Tempered reserve and premium capital factors to reflect a credit for loss-sensitive business.
(2) Diversification credit capped at 5% for 0-$10 million; 10% for $10 million-$20 million; 15% for $20 million-$50 million.
Source: A.M. Best Co.

Exhibit 11

Net Premiums Written Risk (B6)

($ Thousands)

Company A

Schedule P Line	(1) Net Premiums Written %	(2) Net Premiums Written $ Amount	(3) Baseline Capital Factor	(4) Company Size Factor	(5) Company Profit Factor	(6) Capital Factor (3)*(4)*(5)	(7) Required Capital (2)*(6)
Homeowners/Farmowners	0	0	0.53	0.94	1.00	0.49	0
Personal Auto Liability	0	0	0.36	0.94	1.00	0.34	0
Commercial Auto Liability	13.9	5,220	0.39	0.94	1.00	0.37	1,932
Workers' Compensation	30.7	11,490	0.40	0.94	1.02	0.26[1]	2,987
Commercial Multiperil	18.1	6,780	0.40	0.94	0.98	0.37	2,499
Medical Prof Liab - Occurence	0	0	0.41	0.94	1.00	0.39	0
Medical Prof Liab - Claims Made	0	0	0.35	0.94	1.00	0.33	0
Special Liability	0	0	0.41	0.94	1.00	0.38	0
Other Liability - Occurence	11.6	4,360	0.44	0.94	0.95	0.29[1]	1,264
Other Liability - Claims Made	25.7	9,630	0.37	0.94	1.03	0.26[1]	2,504
Products Liab - Occurrence	0	0	0.42	0.94	1.00	0.40	0
Products Liab - Claims Made	0	0	0.36	0.94	1.00	0.34	0
Property	0	0	0.48	0.94	1.00	0.45	0
Auto Physical Damage	0	0	0.33	0.94	1.00	0.31	0
Fidelity & Surety/Guaranty	0	0	0.33	0.94	1.00	0.31	0
Other	0	0	0.33	0.94	1.00	0.31	0
International	0	0	0.59	0.94	1.00	0.55	0
Reinsurance A	0	0	0.54	0.94	1.00	0.51	0
Reinsurance B	0	0	0.45	0.94	1.00	0.43	0
Reinsurance C	0	0	0.53	0.94	1.00	0.49	0
Warranty	0	0	0.42	0.94	1.00	0.39	0
Total	**100**	**$37,480**				**0.30**	**$11,186**
				Growth Factor			**x 1.00**
				Diversification Factor[2]			**x 0.85**
				Adjusted Premium Capital			**$9,508**

Company B

Schedule P Line	(1) Net Premiums Written %	(2) Net Premiums Written $ Amount	(3) Baseline Capital Factor	(4) Company Size Factor	(5) Company Profit Factor	(6) Capital Factor (3)*(4)*(5)	(7) Required Capital (2)*(6)
Homeowners/Farmowners	13.3	30,600	0.53	0.90	1.06	0.50	15,395
Personal Auto Liability	52.9	121,700	0.36	0.90	1.05	0.34	41,155
Commercial Auto Liability	0	0	0.39	0.90	1.00	0.36	0
Workers' Compensation	4.6	10,500	0.40	0.90	1.00	0.36	3,787
Commercial Multiperil	0	0	0.40	0.90	1.00	0.36	0
Medical Prof Liab - Occurence	0	0	0.41	0.90	1.00	0.37	0
Medical Prof Liab - Claims Made	0	0	0.35	0.90	1.00	0.32	0
Special Liability	0	0	0.41	0.90	1.00	0.37	0
Other Liability - Occurence	0	0	0.44	0.90	1.00	0.40	0
Other Liability - Claims Made	0	0	0.37	0.90	1.00	0.34	0
Products Liab - Occurrence	0	0	0.42	0.90	1.00	0.38	0
Products Liab - Claims Made	0	0	0.36	0.90	1.00	0.32	0
Property	0	0	0.48	0.90	1.00	0.43	0
Auto Physical Damage	29.2	67,300	0.33	0.90	1.06	0.32	21,444
Fidelity & Surety/Guaranty	0	0	0.33	0.90	1.00	0.30	0
Other	0	0	0.33	0.90	1.00	0.30	0
International	0	0	0.59	0.90	1.00	0.53	0
Reinsurance A	0	0	0.54	0.90	1.00	0.49	0
Reinsurance B	0	0	0.45	0.90	1.00	0.41	0
Reinsurance C	0	0	0.53	0.90	1.00	0.47	0
Warranty	0	0	0.42	0.90	1.00	0.38	0
Total	**100**	**$230,100**				**0.36**	**$81,780**
				Growth Factor			**x 1.13**
				Diversification Factor			**x 0.86**
				Adjusted Premium Capital			**$79,351**

(1) Tempered reserve and premium capital factors to reflect a credit for loss-sensitive business.
(2) Diversification credit capped at 5% for 0-$10 million; 10% for $10 million-$20 million; 15% for $20 million-$50 million.

Source: A.M. Best Co.

Exhibit 12
Business Risk (B7)
($ Thousands)

Company A				Company B			
Off Balance Sheet Item	(1) Statement Value	(2) Asset Risk Factor %	(3) Required Capital (1) *(2)	Off-Balance Sheet Item	(1) Statement Value	(2) Asset Risk Factor %	(3) Required Capital (1)*(2)
Noncontrolled Assets	$0	1.0	$0	Noncontrolled Assets	$8,587	1.0	$9
Guarantees for Affiliates	0	1.0	0	Guarantees for Affiliates	0	1.0	0
Contingent Liabilities	1,465	1.0	15	Contingent Liabilites	32	1.0	0
Long-Term Lease	130	1.0	1	Long-Term Lease	8	1.0	0
Interest Rate Swaps	0	1.0	0	Interest Rate Swaps	0	1.0	0
Derivative Liability	0	100.0	0	Derivative Liability	0	100.0	0
Pension Plan Obligations[1]	2,000	0.0 [3]	0	Pension Plan Obligations[1]	10,100	0.0 [3]	0
Other Post-Employment Obligations[2]	205	0.0 [4]	0	Other Post-Employment Obligations[2]	1,273	0.0 [4]	0
Other	0	1.0	0	Other	0	1.0	0
Totals	**$3,800**	**0.4**	**$16**	**Totals**	**$20,000**	**0.0**	**$9**

1 The statement value for Pension Plan Obligations is the projected benefit obligation (PBO) for vested and nonvested employees.
2 The statement value for Other Post-Employment/Retirement Obligations is the projected benefit obligation (PBO) for vested and nonvested employees.
3 A risk factor of zero assumes the pension plan PBO for vested and nonvested employees is fully funded or the company has a liability on its balance sheet for the entire unfunded amount.
4 A risk factor of zero assumes the other post-employment/retirement PBO for vested and nonvested employees is fully funded or the company has a liability on its balance sheet for the entire unfunded amount.
Source: A.M. Best Co.

The company maintains moderate investment leverage driven by its high quality bond portfolio, which is offset largely by its substantial holding in a down-stream life/health affiliate, with pyramided capital representing more than 30% of surplus. The capital charge for this holding was reduced from 100% to 70% to reflect the "excess" capital held in this life/health subsidiary, above the level required to support the subsidiary's current rating. The fixed-income portfolio has been structured short term, reflecting the company's short-tail book of business, and thus generates a nominal interest-rate charge. The company has credit risk charges reflecting its modest use of reinsurance other than for catastrophe coverage, which is consistent with its personal-lines book.

Company B's personal-lines loss reserves appear to be modestly deficient but receive lower capital charges than Company A's capital factors—prior to loss-sensitive adjustments— because Company A is predominantly commercial casualty lines. Company B's heavy capital require a growth surcharge of nearly 15% stemming from its aggressive growth in exposure, which has averaged 20% to 25% in recent years. Finally, the company's capital position is weakened by its sizable, ongoing net exposure to catastrophe losses. The exposure to catastrophe losses, which has the effect of reducing the company's reported surplus by 18%, worsens the company's capital position and implied rating by more than one full rating category, and consequently, along with high growth in exposure, contributes to downward pressure on the company's rating.

Conclusion

The tools to better allocate capital and understand capital strength continue to evolve. These tools often vary in theory, purpose and outcome. It is important to remember that, while they can add significant value, they are only tools.

A.M. Best's proprietary BCAR is one of those tools that looks at capital needs well above financial solvency. A.M. Best will continue to enhance BCAR to improve its accuracy in measuring balance-sheet and operating risk.

BCAR is important to A.M. Best's evaluation of both absolute and relative capital strength. Consistent with standards embedded within the BCAR model, it's expected that well-managed

and highly rated companies will maintain risk-adjusted capitalization levels in excess of the amounts indicated by the guidelines to support their current ratings.

A.M. Best is quick to caution, however, that although BCAR is an important tool in the rating process, it isn't sufficient to serve as the sole basis of a rating assignment. BCAR, like other quantitative measures, has some limitations and doesn't necessarily work for all companies. Consequently, capital adequacy should be viewed within the overall context of the operating and strategic issues surrounding a company. Business profile and operating performance are important rating considerations in evaluating a company's long-term financial strength and viability, as well as the quality of the capital that supports the BCAR result. In addition, any holding-company considerations also will play a key role in evaluating the financial strength of an insurance company.

A.M. Best believes that well-managed and highly rated property/casualty insurers will continue to focus on the fundamentals of building future economic value and financial stability, rather than on managing one, albeit important, component of A.M. Best's rating evaluation.

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METHODOLOGY

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Best's Financial Strength Rating (FSR): an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. An FSR is not assigned to specific insurance policies or contracts.

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Best's Issue Rating (IR): an independent opinion of credit quality assigned to issues that gauges the ability to meet the terms of the obligation and can be issued on a long- or short-term basis (obligations with original maturities generally less than one year).

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A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Rating Services Inc., (AMBRS) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMBRS.

Version 020116

June 2, 2015

Understanding BCAR for Canadian Property/Casualty Insurers

The objective of A.M. Best Co.'s financial strength ratings is to provide an opinion of an insurer's financial strength and ability to meet ongoing obligations to policyholders. The assignment of an interactive rating is derived from an in-depth evaluation of a company's balance sheet strength, operating performance and business profile as compared with A.M. Best's quantitative and qualitative standards.

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing obligations to policyholders, the most important area to evaluate is balance sheet strength, since it is the foundation for policyholder security. Performance then determines how that balance sheet strength will be enhanced, maintained or eroded over time. Balance sheet strength measures the exposure of a company's surplus to its operating and financial practices. An analysis of a company's underwriting, financial and asset leverage is very important in assessing its overall balance sheet strength.

Underwriting leverage is generated from current premium writings, reinsurance recoverables and loss reserves. In order to assess whether a company's underwriting leverage is prudent, a number of factors unique to the company are taken into account, including type of business written, quality and appropriateness of its reinsurance program, and adequacy of loss reserves.

Financial leverage is created through debt or debt-like instruments (including financial reinsurance) and is reviewed in conjunction with a company's underwriting leverage. An analysis of financial leverage is conducted at both the operating company and holding company levels, since debt at either level could place a call on the insurer's earnings and strain its cash flow, leading to financial instability.

Asset leverage measures the exposure of a company's surplus to investment, interest rate and credit risks. The volatility and credit quality of the investment portfolio, recoverables and agents' balances determine their potential impact on the company's balance sheet strength.

A company's underwriting, financial and asset leverage also are subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR), which allows for an integrated review of these leverage areas. BCAR calculates the net required capital to support the financial risks of the company associated with the exposure of assets and underwriting to adverse economic and market conditions, and compares it with economic capital.

Some of the stress tests within BCAR include above-normal catastrophes, a decline in equity markets and a rise in interest rates. This integrated stress evaluation permits a more discerning view of a company's balance sheet strength relative to its operating risks.

A company's BCAR result is extremely useful in evaluating its balance sheet strength, but BCAR is only one component of that analysis. In addition, balance sheet strength is only one component of the overall financial strength rating, which also includes operating performance and business profile. BCAR establishes a guideline for risk-adjusted capital to support a rating, but other factors driving expectations of future balance sheet strength drive the rating as well. All of these factors are important to the overall rating process.

Additional Information

Criteria:

Understanding BCAR for U.S. Property/Casualty Insurers

Understanding Universal BCAR

Analyzing Contingent Capital Facilities

The Treatment of Terrorism Risk in the Rating Evaluation

Risk Management and the Rating Process for Insurance Companies

Catastrophe Analysis in A.M. Best Ratings

Equity Credit for Hybrid Securities

Insurance Holding Company and Debt Ratings

Rating Members of Insurance Groups

A.M. Best's Perspective on Operating Leverage

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This publication updates the criteria report issued April 2, 2014 to reflect the elimination of separate PC-1 and PC-2 annual statements (page 2).

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Overview of BCAR

Structurally, A.M. Best's Canadian BCAR model is adapted specifically to the Canadian Annual Return and Supplement, as well as Canada's accounting standards. For Canadian Annual Returns and Supplements, BCAR calculations are performed using data from the consolidated exhibits. Effectively, this creates stand-alone BCARs for subsidiary companies, but consolidated BCARs for parent companies. However, if it is determined that the parent company may be the cause of the weaker consolidated BCAR, then a stand-alone BCAR for the parent-only insurer can be created using additional information supplied by the parent company.

A.M. Best's Canadian capital formula takes a risk-based capital approach. Net required capital is calculated to support three broad risk categories: investment risk, credit risk and underwriting risk. However, A.M. Best's capital adequacy formula contains an adjustment for covariance, reflecting the assumed statistical independence of the individual components.

A company's adjusted surplus is divided by its net required capital, after the covariance adjustment, to determine its BCAR.

In contrast to the minimum capital test (MCT) calculation, a significant proportion of capital is required to support future premium risk, reflecting A.M. Best's view that balance sheet strength must support the risks associated with a company's current book of business as well as those it plans to insure in the upcoming year.

Investment Risk

Investment risk includes three main risk components: fixed-income securities, equities and interest rate. Capital charges are applied to different asset classes based on the risk of default, illiquidity and market-value declines in both equity and fixed-income securities. A.M. Best's Canadian model has incorporated an interest-rate risk component that considers the market-value decline in a company's fixed-income portfolio as a result of rising interest rates. Additionally, higher capital charges are ascribed to affiliated investment holdings, real estate, below-investment-grade bonds and nonaffiliated, privately traded common and preferred shares because of the illiquid nature of the asset and/or volatility of the reported value.

For those companies that have a material amount of foreign investments in a particular investment category, the risk charge for that asset category may be increased to reflect the increase in volatility and/or decrease in liquidity associated with those foreign markets, financial systems and economies.

Credit Risk

Capital charges are applied to different receivable balances to reflect third-party default risk. Credit risk factors are ascribed to recoverables from all registered and unregistered reinsurers, including affiliates. Required capital for credit risk may be modified after taking into account any collateral offsets for reinsurance balances; the quality of the reinsurers that participate in the company's reinsurance program; and the company's dependence on its reinsurance program. Also included in the credit risk component are charges for premium receivables from agents and brokers, policyholders and installment premium balances. Included as well are funds held by residual market entities – the Facility Association and the P.R.R. – and other miscellaneous receivables.

Underwriting Risk

Underwriting risk is the largest risk category and typically accounts for two-thirds of a company's gross required capital. This category encompasses both loss and loss-adjustment expense reserves and net premiums written. The loss-reserve component requires capital

based on the risk inherent in a company's loss reserves, adjusted for A.M. Best's assessment of its reserve equity. Reserve equity is a function of the estimated reserve deficiency, the payout pattern of the reserves and the discount rate, which is currently 4% in BCAR. The net premiums written component requires capital based on the pricing risk inherent in a company's mix of business. In addition, required capital for the reserve and premium components may be increased to reflect an additional surcharge for "excessive" growth in exposure. Finally, there is credit for a well-diversified book of business, but this credit is limited for those companies that maintain small books of many lines of business and might not necessarily have expertise in all of these lines.

Collectively, these three broad risk categories (investment risk, credit risk and underwriting risk) generate more than 99% of a company's gross required capital, with an additional business risk component generating minimal capital requirements for off-balance-sheet items. Off-balance-sheet items include items such as noncontrolled assets, guarantees for affiliates, contingent liabilities, pension obligations and other post-employment/retirement obligations. A company's gross required capital, which is the sum of the capital required to support all of its risk components, reflects the amount of capital needed to support all risks were they to develop simultaneously. These individual components then are subjected to a "square root rule" covariance calculation within the BCAR formula to account for the assumed statistical independence of these components. This covariance adjustment essentially says that it is unlikely that all of the individual risk components will develop simultaneously, and it generally reduces a company's overall required capital between 35% and 45%.

A.M. Best recognizes the distortions caused by this "square root rule" covariance adjustment, whereby the more capital-intensive underwriting risk components are accentuated disproportionately, while the less capital-intensive asset risk components are diminished in their relative contribution to net required capital. Nevertheless, by using other distinct capital measures, A.M. Best can counterbalance this apparent shortcoming.

A.M. Best makes a number of adjustments to a company's reported surplus within the Canadian capital model to provide a more economic and comparable basis for evaluating capital adequacy. Goodwill and other intangible assets are eliminated. Other significant adjustments are related largely to equity, or economic values, imbedded in loss and loss-adjustment expense reserves, fixed-income securities and common stocks. Further adjustments are made to surplus to reflect the pricing risk inherent in unearned premium reserves and non-balance-sheet risks, including catastrophe exposures and debt-service requirements.

The model also can be adjusted in response to various market issues. Some examples of the issues that can impact capitalization include rate changes, the stage of the underwriting cycle, changing reinsurance products and dependence on reinsurance. The ability of the model to respond to these market issues makes it a dynamic tool that assists in the evaluation of the company's balance sheet strength.

Long duration contracts are defined as contracts having terms in force for more than 13 months and for which the insurer cannot cancel or increase the premium during the life of the contract. Long duration contracts create larger unearned premium reserves than contracts with one-year terms. This creates a larger pricing risk in the unearned premium reserve than anticipated for contracts having terms of one year or less. In order to capture this increased risk, the long duration unearned premiums will be included on the loss reserve page. The unearned premiums are included on the loss reserve page instead of the pricing risk page in an effort to reflect diversification from business being written in the future versus business written in the past. Other adjustments such as credit risk, unearned premium equity and written

premiums will be made in an effort to capture other risks associated with writing long duration contracts. These adjustments will vary based on the terms of the contracts and the structure of the business.

Exhibit 1
BCAR Guidelines

BCAR	Implied Balance Sheet Strength
Secure:	
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
Vulnerable:	
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

Given strong, stable operating performance, sound risk management, a strong business profile, high-quality capital and strong financial flexibility, on a historical and prospective basis, Exhibit 1 provides a reasonable guide for the BCAR levels needed to support A.M. Best's Financial Strength Ratings.

Formula Drivers

Generally, more than two-thirds of a company's gross capital requirement within A.M. Best's Canadian capital model is generated from its loss reserve and net premiums written components. Consequently, a company's absolute BCAR value is influenced largely by the capital required to support its net underwriting commitment, which in turn is largely a function of a company's mix of business, size of surplus, stability of loss development, profitability, loss-reserve adequacy and length of claims payout. All things being equal, a company's absolute BCAR value will be lower because of higher capital requirements associated with higher underwriting leverage, greater indicated reserve deficiencies, and unstable or unprofitable business.

While only one-third of the gross capital requirement is generated from investment risk, interest-rate risk and credit risk components, a company that maintains a more aggressive investment portfolio, depends heavily on pyramided capital, has excessive credit risk or depends excessively on reinsurance likely will generate a lower BCAR value.

Additional Stress Testing

A.M. Best also will stress a company's BCAR score for a second catastrophic event according to the procedures outlined in its criteria report titled Catastrophe Analysis in A.M. Best Ratings and its criteria report titled The Treatment of Terrorism Risk in the Rating Evaluation. The testing will incorporate natural catastrophes and/or man-made events such as terrorism to monitor how sensitive a company's balance sheet strength is to a second catastrophic event. For casualty writers, an estimate of a casualty shock loss may be used in the analysis of balance sheet strength. Additional stresses may be employed when insurers accumulate large amounts of higher risk investments.

Conclusion

The tools to better allocate capital and understand capital strength continue to evolve. These tools often vary in theory, purpose and outcome. It is important to remember that, while they can add significant value, they are only tools. A.M. Best's proprietary BCAR tool looks at capital requirements well above financial solvency. A.M. Best will continue to enhance BCAR to improve its accuracy in measuring balance sheet and operating risk.

BCAR is important to A.M. Best's evaluation of both absolute and relative capital strength. Consistent with standards embedded within the BCAR model, it is expected that well-managed and highly rated companies will maintain risk-adjusted capitalization levels in excess of the amounts indicated by the published guidelines to support their current ratings.

A.M. Best cautions that although BCAR is an important tool in the rating process, it is not the sole basis of a rating assignment. BCAR, like other quantitative measures, has limitations. Consequently, capital adequacy should be considered within the context of the operating and strategic issues surrounding a company. Business profile and operating performance, as well as the quality of the capital that supports the BCAR result, are important

rating considerations in evaluating a company's long-term financial strength and viability. In addition, any holding company considerations also will play a key role in evaluating the financial strength of an insurance company.

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The Treatment of Terrorism Risk In the Rating Evaluation

The purpose of this report is to explain A.M. Best's treatment of terrorism risk in the rating evaluation of property/casualty insurers. Terrorist attacks can vary from small, conventional weapons attacks with limited insured losses to full-scale nuclear attacks with devastating impacts on insurers' resources. The types of property/casualty insurers can vary from small, single-state, monoline commercial insurers to large, national, multi-line insurers or reinsurers. Despite the complexities in identifying, monitoring, quantifying and managing terrorism risks, A.M. Best believes that a comprehensive terrorism risk management process is crucial to the financial strength rating of any insurer with a material exposure to terrorism risk.

A.M. Best has stated previously that its key concerns are:

- Aggregate exposure to terrorism.
- Number of insured locations.
- Geographic concentration of insured exposures.
- Impact on capitalization.
- The uncertainty surrounding a government's long-term commitment to a federal backstop.

Although a federal backstop can help reduce the impact of terrorism losses, reliance on such a mechanism cannot replace a sound risk management process.

For exposures located in the United States, the passage of the Terrorism Risk Insurance Program Reauthorization Act of 2015 (TRIPRA) extended the federal backstop six years and temporarily reduces A.M. Best's concerns about the U.S. government's long-term commitment to a federal role. Previous concerns about the distinction between foreign and domestic terrorism were alleviated with the passage of TRIPRA in 2007, which provided coverage for both types of attacks. However, since TRIPRA is designed to increase the insurance industry's exposure over time and will expire in December 2020, it is imperative that insurers are properly managing their increasing exposure to terrorism risk. **Exhibit 1** shows the increase in insurers' exposure to terrorism losses based on the terms of TRIPRA.

As a result of the continued uncertainty surrounding the government's long-term commitment to a federal backstop, A.M. Best made changes to its U.S. property/casualty Supplemental Rating Questionnaire (SRQ) beginning in 2007 as it expanded its rating methodology to assess the impact of terrorism risk on an insurer's balance sheet. The changes to the SRQ included:

- Expanding the list of potential attack cities.
- Expanding the number of tiers for those cities based on probability of attack.
- Eliminating the distinction between foreign and domestic attacks.

Exhibit 1
Terrorism Risk Insurance Program Reauthorization Act of 2015

Calendar Year	Insurer's Deductible[1] (%)	Insurer's Copay[2] (%)	Industry Trigger ($ Millions)	Industry Aggregate Retention ($ Billions)
2015	20	15	100	29.5
2016	20	16	120	31.5
2017	20	17	140	33.5
2018	20	18	160	35.5
2019	20	19	180	37.5
2020	20	20	200	TBD[3]

1. Expressed as percent of prior year's direct earned premium on TRIPRA covered lines.
2. Expressed as percent of losses above insurer's deductible.
3. To be determined by the Secretary of the Treasury based on a 3-year average of insurer deductibles.

Additional Information

Criteria:
Catastrophe Analysis in A.M. Best Ratings

Risk Management and the Rating Process for Insurance Companies

Understanding BCAR for U.S. Property/Casualty Insurers

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This publication updates the Criteria report issued March 17, 2015 to remove any reference to secure rating categories in the text on pages 5 & 8. The BCAR Guidelines exhibit on Page 9 was expanded to include all FSR levels.

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- Allowing for the distinction between single-structure locations and campus-style locations.
- Collecting the number of insured locations with estimated insured exposures that were greater than 10% of surplus on a net of TRIPRA basis.

This report will explain the approach to be used on primary insurers and reinsurers, including stress tests, and the treatment of primary insurers with exposures that do not trigger the minimum threshold for coverage from the federal backstop. The report will conclude with A.M. Best's views on the treatment of other types of attacks, including chemical, biological, radiological and nuclear (CBRN).

Standard Approach for Primary Insurers

For insurers with a material exposure to terrorism loss, a charge to surplus will be calculated that reflects the:

- Probability of a large-scale attack.
- Location of the attack.
- Number of large exposure concentrations.
- Size of the exposures.
- Level of detail in the coding of exposures.
- Offsets to the direct loss.

These offsets include recoveries from reinsurance, protection from federal backstops and a federal tax offset. For U.S. exposures, A.M. Best will reflect the recovery from TRIPRA. The terrorism charge will be compared with the insurer's natural catastrophe probable maximum loss (PML), and the larger of the two charges will be used in the insurer's published BCAR. If the terrorism charge is the larger amount and is used in the published BCAR, the PML from the natural catastrophe will be used as the second event in the terror stress test, which contemplates the potential that both events could happen.

Although the following explanation of the criteria focuses on U.S. exposures, the criteria can be applied in other jurisdictions merely by changing some of the underlying factors. The calculation begins with the underlying assumption of the annual probability of a large-scale attack that is at least the size of a 5- to 6-ton TNT truck bomb. A.M. Best has selected a 10% annual probability of a large-scale attack and assumes a maximum of only one large-scale attack per year.

The next step in the calculation is to separate target cities into tiers that reflect the level of perceived risk of attack. Based on discussions with the terrorism modeling firms, A.M. Best has created three tiers and has placed five cities in Tier 1, 21 cities in Tier 2 and all other locations in Tier 3. **Appendix A** shows the cities in each tier. After the target cities are placed into their respective tiers, a conditional probability that the attack occurs in a given tier is assigned, assuming an attack has occurred. A.M. Best will use the following conditional probabilities, assuming that an attack occurred somewhere in the United States:

Tier:	Conditional Probability
1	60%
2	30%
3	10%
Total	**100%**

Multiplying the annual probability of a large attack by the conditional probability that the attack occurs in a given tier yields the following table of annual probabilities that a large attack will occur in each of the tiers:

Tier:	Annual Probability
1	6%
2	3%
3	1%
Total	**10%**

Using the information gathered in the terrorism section of the SRQ submitted by the company, A.M. Best will multiply the annual probability for each tier by the number of exposures greater than 10% of surplus (net of reinsurance and TRIPRA) for each tier, up to a maximum of 100% in any single tier. This calculation is performed to reflect the higher risk to a company insuring more locations in a given tier than to another company insuring fewer locations in a given tier, as well as the higher risk to a company insuring locations in a higher risk city than to another company insuring locations in a lower risk city. A.M. Best does not use the probabilities associated with individual locations provided by the terrorism models, because these extremely low individual location probabilities render expected losses too low to reasonably evaluate an insurer's financial strength, should a loss occur at the individual location.

The probability adjusted for the number and location of exposures calculated for each tier is multiplied by the largest exposure (net of reinsurance and TRIPRA) in each tier, and will be reduced by a 35% federal tax to get an after-tax terrorism charge for each tier. The largest of the three terrorism charges will be compared with the after-tax natural catastrophe PML, and if the terrorism charge is larger, the terrorism charge will replace the natural catastrophe PML in the published BCAR.

During the calculation of the terrorism charge, A.M. Best will also make an adjustment to the terrorism loss estimates submitted in the SRQ based upon the quality of the data used in the SRQ responses. The quality of the data used in a model is of paramount importance when evaluating the results of any model. A.M. Best will add a surcharge to the loss estimates used in the terror charge based upon the level of exposures geocoded to street-address level of detail. The lower the percentage of exposures coded to the street-address level, the higher the surcharge applied to the loss estimates.

The surcharges are shown in **Exhibit 2** and will be applied giving consideration for the company's deductible and co-participation under TRIPRA.

Exhibit 2
Geocode Surcharges

% Geocoded to Street Address	Surcharge
<50%	50%
50% - 59%	40%
60% - 69%	30%
70% - 79%	20%
80% - 89%	10%
90% - 100%	0%

Some insurers have made a strong effort to geocode their exposures to street-address level in certain geographic areas that contain their largest exposures, but they have not made the same effort for exposures in other geographic areas. The percentages required for the level of geocoding are on a countrywide basis and do not reflect this characteristic. To the extent that the insurer can demonstrate there are no large exposure concentrations outside of the rigorously geocoded area, the surcharges can be reduced by the analyst. Insurers then should be prepared to discuss their plans to improve the quality of the data in geographic areas that are missing geocoded addresses, insured values or employee data, since these missing data could have negative impacts on other issues that influence the rating analysis, including natural catastrophe modeling and enterprise risk management (ERM). For those insurers that do not provide the percentage of exposures geocoded to street-address level, the analysts will apply the maximum surcharge.

A sample calculation of the standard approach for primary insurers is shown in **Appendix B**, using the deterministic scenario and modeled loss estimates provided in the SRQ. A similar analysis is done for insurers that do not use a terrorism model by using the maximum foreseeable loss (MFL) accumulation responses provided in the SRQ.

The types of property/casualty insurers most likely to be impacted by this approach are workers' compensation and commercial property insurers with a low exposure to natural catastrophes. Any insurer for which the rating is jeopardized will need to develop and discuss a corrective action plan with its analyst.

A.M. Best believes this approach is a reasonable method of reflecting a charge in the published BCAR for terrorism risk, since it takes into consideration the probability of a large-scale attack, the location of the attack, the number of large exposure concentrations, the size of the exposures, the level of detail in the coding of exposures, the offsets to the direct loss and the importance relative to other potential catastrophes. Any time the expiration of a federal backstop approaches, the stress test will receive greater emphasis in the rating evaluation.

Stress Approach for Primary Insurers

This approach is designed as a stress test to quantify the impact that a large, insured terrorism loss could have on a primary insurer's capitalization if protection from a federal backstop were not available. This is a valid concern in the United States because of the short-term nature of the previous federal backstops, the declining protection to insurers and the lack of universal support for renewal. Since the current backstop is set to expire in 2020, and if insurers anticipate writing policies that will be exposed to terrorism after the expiration date of TRIPRA, greater emphasis will be placed on the stress test results as the expiration date approaches.

The current version of TRIPRA was approved based upon cost estimates provided by the Congressional Budget Office using expected losses that result in a recoupment of the federal share, making TRIPRA appear to have no impact on the deficit. However, if the actual industry losses are greater than expected and are large enough to prevent any federal recoupment, the Treasury would have to provide as much as $60 billion in a short time and increase the deficit. Although it is highly unlikely that no payments would be made to insurers, the possibility still exists, and a reduced payment certainly is possible given the current economic and political environment. Furthermore, any lengthy delays in receiving the funds from the Treasury while the government decides on a course of action could cause liquidity problems for the insurer.

Within the stress test, A.M. Best evaluates the largest exposures individually, using the modeled losses generated from a deterministic scenario. A.M. Best has selected a 5- to 6-ton TNT truck bomb attack as the scenario to generate the modeled losses at each concentration of exposures.

This attack scenario was selected because of its ability to create an amount of damage and insured losses large enough to stress an insurer's balance sheet. For companies without modeling capabilities, A.M. Best applies a factor to the largest aggregate exposures individually to reflect the extent of expected loss based on whether the location is a single structure, campus-style location or other type of structure.

The terrorism losses are calculated net of reinsurance only and the resulting amount is reduced for any federal tax impact. The terrorism stress test is similar to the natural catastrophe stress test in that:

- The terrorism after-tax net loss is removed from surplus.
- A minimum of 40% of the ceded terrorism losses are added to the existing recoverables on the credit risk page.
- The risk charges for the recoverables are based upon the reinsurers' current financial strength ratings.
- 40% of the net pretax terror loss is added to the loss-reserve page. This amount may be adjusted based upon the reinsurance structure.

A natural catastrophe remains in the BCAR as a reduction to surplus. The resultant BCAR provides a view of the insurer's capitalization shortly after the event is assumed to have occurred. The extent of the BCAR's decline will indicate the potential exposure to the insurer's capitalization if the federal backstop were not available.

Because these adjustments only look at the worst case, A.M. Best looks at how many areas of concentration an insurer has, as well as their geographic locations. Insurance companies with more concentrations – that are in excess of 20% of surplus prior to any recoveries from a federal backstop – are at a greater risk than companies with fewer insured concentrations, and consequently A.M. Best will have less tolerance for a decline in the BCAR. Companies that have large concentrations in high-risk cities also will have a greater risk of loss than companies that only write in remote locations, and consequently, A.M. Best will have less tolerance for a decline in the BCAR.

A.M. Best's BCAR guidelines needed to support financial strength ratings are shown in **Appendix C**. These BCAR guidelines assume strong, stable operating results, sound risk management, a strong business profile, high-quality capital and strong financial flexibility. To be considered for a particular rating level, an insurer's unstressed BCAR typically would be at or above the guideline for that rating level. Sometimes, because of a volatile operating history, weak business profile or poor risk management of an insurer, the unstressed BCAR must be maintained substantially higher than the guideline for the targeted rating level. Assuming the unstressed BCAR and other rating factors meet the guidelines of a targeted rating level, the stressed BCAR may not be allowed to fall more than a certain number of points below the BCAR guideline for that targeted rating level. **Exhibit 3** shows the number of points the stressed BCAR may fall below the BCAR guideline before it fails the stress test.

Exhibit 3 assumes that the insurer has the financial flexibility to quickly replace the lost surplus after the event. For those insurers that have limited financial flexibility, the number of points the stressed BCAR may fall below the guideline will be reduced as many as 15 points. A.M. Best's view of an insurer's financial flexibility does take into consideration the overall market conditions, which will vary over time.

Exhibit 3

Impact of Stress Test on BCAR Score – Insurers With Strong Financial Flexibility

# of Points BCAR Can Fall Below Guideline Using Stress Scenario	Test 1 Countrywide # of Areas of Concentrated Net* Losses >20% of PHS	Test 2 Top 26 Cities # of Areas of Concentrated Net* Losses >20% of PHS	Test 3 Top 5 Cities # of Areas of Concentrated Net* Losses >20% of PHS
30	> 19	> 9	> 4
40	15-19	8 - 9	4
50	10-14	6 - 7	3
60	< 10	< 6	< 3

* Net of reinsurance only, if any.

An insurer must pass all three tests to satisfy the terrorism stress test. The top five cities are those listed in **Appendix A** as Tier 1 cities. The top 26 cities include those listed in **Appendix A** as Tier 1 cities plus those that are listed as Tier 2 cities.

In addition to stress testing the capitalization of the insurer, A.M. Best may also analyze the potential impact on financial leverage by adjusting total debt to total capital and coverage ratios, as if capital is replaced through debt issuance. Companies with access to capital may elect to replenish lost funds through the issuance of equity, but the stress test is designed to provide a picture of how leveraged a company could become under certain circumstances.

In the calculation of the total debt to total capital ratio, equity is reduced by the amount of the after-tax net terror loss (net of reinsurance only) that was used in the BCAR stress test. For companies with access to various forms of capital, it is assumed that capital is replaced through debt issuance. While the publicly traded companies access capital through the public capital markets, private companies and mutuals have access to capital through sources such as private investors, trust preferreds or surplus notes issued through a pool.

Assumptions then are made as to the annual interest expense of capital raised, with consideration for prevailing interest rates and credit ratings. Estimates of earnings coverage of interest, as well as holding company sources and uses of cash, then are developed using the most recent information obtained from the company. A.M. Best does not publish the stressed BCAR, nor does it publish the results of the stress tests, but all information on the stress test and assumptions can be shared with management upon request.

As the expiration of the federal backstop draws near, insurers that fail the stress test will be required to present an action plan detailing the steps the insurer will take to reduce its exposure to terrorism risk in the event that a recovery from the federal backstop is not available. Issuing endorsements that exclude terrorism when the federal backstop expires may be one course of action, but insurers providing workers' comp coverage or having property exposures in fire-following states will need to have a more detailed action plan.

Approach for Primary Insurers Not Triggering Federal Backstop

Although the methodologies above can be applied to all primary insurers, A.M. Best is concerned with the potential scenario that a terrorism loss could occur but fail to trigger a recovery from the current terrorism backstop. For example, the industry loss required to trigger coverage under the federal backstop in the United States was increased from a $5 million industry loss in 2002 to $100 million in 2008, and will eventually increase to $200 million in 2020 (see **Exhibit 1**). This increasing industry trigger makes the likelihood that an insurer will suffer a loss without any reimbursement from the federal program a much greater concern now than it was in 2002. This increase in the industry trigger is most likely to impact smaller insurers that provide coverage to businesses located in remote locations, or in locations situated far enough away from other structures that the industry loss is limited to the insurer's loss, and the insurer's loss is less than the industry trigger.

Currently in the United States, reinsurance protection for terrorism risk outside the peak zones is available, and yet some insurers are willing to maintain large net retentions on these remote individual locations that would result in a substantial loss to surplus. Strong terrorism risk management is not limited to just the peak zones, and insurers should not hide behind the theoretically low probabilities of events in remote locations. As with all types of risk, including terrorism, insurers should be managing their exposures down to a reasonable level relative to surplus, avoiding or mitigating any single large exposures.

Exhibit 4

Potential Rating Limitation by Level of Terrorism Exposure

For insurers with largest direct exposure less than the industry trigger.

Largest Net* Exposure as a Ratio to Surplus	Maximum Potential Financial Strength Rating (FSR)	Maximum Potential Issuer Credit Rating (ICR)
< or = 25%	A++	aaa
26%-50%	A	a+
51%-75%	B++	bbb+

*Net of reinsurance only

For primary insurers whose largest direct exposure is less than the industry trigger, the insurer's rating may be limited based on the size of the exposure relative to surplus, using **Exhibit 4** as a guideline.

At many locations, an insurer might provide coverage for one type of potential exposure, whereas the remaining exposures are insured by a separate, unaffiliated insurer.

For example, workers' comp coverage may be provided by one insurer, but the property exposure is protected by an unaffiliated insurer. In addition, some insurers may only offer protection for a portion of the exposure, such as the upper layers of a property exposure. For insurers that are exposed to only one of the multiple types of coverage at a given location, or that carry only a portion of the total exposure at that location, the insurer must provide evidence that the total industry insured loss at that remote location would exceed the industry trigger to alleviate the concern that the federal backstop would not produce a recovery for the insurer.

Approach for Professional Reinsurers

Currently, the SRQ asks for gross zonal aggregate limits exposed to terrorism losses separately for the top 26 cities versus all other cities. It also separates the terrorism exposure into zonal aggregate limits susceptible to conventional attacks versus CBRN attacks. If there is a material exposure to terrorism risk, the responses to these questions form the starting point of discussions with the reinsurer. If the reinsurer shows gross aggregate limits for any single zone in excess of 25% of surplus, the risk will be considered material, and further discussions will center on the loss retentions net of retrocessions. In addition, A.M. Best will need to know the reinsurer's risk appetite, strategy, underwriting guidelines and mitigation program, as well as the reinsurer's ability to capture detailed and accurate information that allows it to monitor and manage the accumulations of risk.

The majority of responses collected previously from reinsurers have indicated that the risk of loss from terrorism is not material, for both conventional and CBRN attacks. This is primarily because many reinsurers have excluded acts of terrorism from their policies or only offer coverage subject to a small sublimit. However, as the underwriting cycle softens, more reinsurers are including terrorism as a covered peril, especially in cities or locations considered low risk.

For reinsurers that have a material exposure to terrorism risk, A.M. Best will compare the net aggregate limits for the largest concentration within a zone for conventional attacks; the largest net zonal aggregate for CBRN attacks; and the net PML from a natural catastrophe. The largest of these three amounts, after reflecting any reinstatement premiums and the applicable federal tax rate, will be used in the published BCAR.

In addition, reinsurers are subject to the same terrorism stress test as primary insurers, but they use the larger of the two terror estimates mentioned above as the first event, and the natural catastrophe as the second event.

Impact of CBRN and Other Types of Attacks in the Rating Evaluation

Even though A.M. Best has selected to use a 5- to 6-ton TNT truck bomb as the modeled attack for the deterministic loss scenario, A.M. Best still expects all insurers and reinsurers with material exposure to terrorism risk to identify, quantify, monitor and manage their exposure to other types of attacks, both conventional and CBRN. As part of the ERM process, insurers should have a risk catalog of potential terror events and the potential losses created. Composite companies should include their exposures to life and health policies along with their property/casualty exposures when cataloging their potential events and losses. Companies should be willing and able to share these alternative scenarios when discussing their ERM process. A method of accumulating the risks and frequent, systematic reviews of the accumulations and their associated potential losses also are required. Having a risk mitigation plan in place that adequately reduces the insurer's exposure to an acceptable level is imperative. Insurers that do not perform these functions will be considered to have weaker ERM than those that do.

Relying solely on a federal backstop for protection could be problematic, especially for insurers with exposures in the largest cities, where CBRN losses easily could exceed the program cap and limit the actual recoveries. Although the insurer may not be legally obligated to pay claims once the cap is exceeded, the dispute risk could be enormous and costly as policyholders and claimants only receive a partial payment. The best way to avoid this type of potential problem is to enforce sound underwriting guidelines, limit the amount of coverage on a single risk and prevent geographically concentrated accumulations of those risks.

Conclusion

The extremely low probability and extremely high severity associated with terrorist attacks has made an insurer's management of its risk profile very challenging, but not impossible. Similarly, reflecting

this risk profile in the rating process has become very challenging. Through a series of stresses to the company's capitalization, A.M. Best can gain an understanding of what could happen to the insurer's capitalization if a terror event were to occur. From this, A.M. Best can assign appropriate financial strength ratings. In addition, A.M. Best will review the company's strategy, risk tolerance, underwriting guidelines and mitigation methods. The level of detail and the frequency of the company's monitoring of its concentrations also will be factored into the evaluation of the company's financial strength.

If a federal backstop caps the amount an insurer is legally obligated to pay, an insurer still may carry a financial strength rating of B+ or higher (rating categories of Good, Excellent or Superior), and yet the policyholder or claimant may, at most, receive a partial payment. This is currently the situation in the United States under TRIPRA. However, should TRIPRA not be renewed or if the terms and/or coverages are materially changed, A.M. Best will reflect this in its ratings.

Appendix A
U.S. Locations By Terrorism Risk Tier

Tier 1 (Highest Risk):

New York, NY
Chicago, IL
Los Angeles, CA
San Francisco, CA
Washington, DC

Tier 2 (Higher Risk):

Atlanta, GA
Baltimore, MD
Boston, MA
Buffalo, NY
Cleveland, OH
Dallas, TX
Denver, CO
Detroit, MI
Houston, TX
Las Vegas, NV
Miami, FL
Minneapolis/St. Paul, MN
Newark, NJ
Orlando, FL
Philadelphia, PA
Phoenix, AZ
San Diego, CA
San Jose, CA
Seattle, WA
St. Louis, MO
Tampa/St. Petersburg, FL

Tier 3 (All other):

All locations not listed in Tier 1 or Tier 2.

Appendix B

Sample Calculation of Terrorism Charge Used in Published BCAR

($ Thousands)

Tier	(a) TRIPRA Deductible	(b) Largest Net of TRIPRA Exposure	(c) % Geocoded to Street Address	(d) Geocode Surcharge (%)	(e) Surcharge for Exposures Smaller Than Deductible	(f) Surcharge for Exposures Larger Than Deductible	(g) =(b)+(e)+(f) Largest Exposure Adjusted for Geocode %
1	$200,000	$305,000	82.5	10	0	$13,500	$318,500
2	200,000	260,000	72.5	20	0	18,000	278,000
3	200,000	237,000	62.5	30	0	20,100	257,100

Tier	(h) Annual Probability of Large Attack (%)	(i) Conditional Probability of Attack in Tier (%)	(j) =(h) x (i) Probability for Each Location (%)	(k) # Locations Net of TRIPRA Greater than 10% of PHS	(l) =(j) * (k) Locations Times Probability (%)
1	10	60	6	3	18%
2	10	30	3	10	30%
3	10	10	1	80	80%

Tier	(m) =(g) * (l) Pretax Terrorism Charge	(n) FIT (%)	(o) =(m) * [1- (n)] After-Tax Terrorism Charge	(p) =Max of Col (o) Maximum Terrorism Charge
1	$57,330	35	$37,265	
2	83,400	35	54,210	
3	205,680	35	133,692	$133,692

Terrorism Charge	**$133,692**	(q)
Natural CAT PML (after tax)	**$100,000**	(r)

Final PML used in published BCAR (Max of Terrorism Charge & Natural CAT PML)	**$133,692**	(s)

(a) From Supplemental Rating Questionnaire, question 41(b).
(b) From largest exposure in each tier of SRQ question 46(a) col (07), 46(b) col (07) and 46(c) col (07).
(c) From SRQ questions 41(e) and 41(f) weighted by net losses of largest exposure in each tier.
(f) Based on insurer co-pay over deductible as percentage of loss from **Exhibit 1**.
(k) From SRQ question 46(a), (b) & (c). Number of locations net of reinsurance and TRIPRA greater than 10% of surplus.

Appendix C

BCAR Guidelines

BCAR	Implied Balance Sheet Strength
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

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Best's Financial Strength Rating (FSR): an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. An FSR is not assigned to specific insurance policies or contracts.

Best's Issuer Credit Rating (ICR): an independent opinion of an entity's ability to meet its ongoing financial obligations and can be issued on either a long- or short-term basis.

Best's Issue Rating (IR): an independent opinion of credit quality assigned to issues that gauges the ability to meet the terms of the obligation and can be issued on a long- or short-term basis (obligations with original maturities generally less than one year).

Rating Disclosure: Use and Limitations
A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Rating Services Inc., (AMBRS) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMBRS.

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Rating New Company Formations

Regulatory and tax issues, as well as market dislocations and consumer demand for new and innovative products and services, continue to influence new insurance and reinsurance company formations. As a result, brokers, agents, lenders, capital market participants and corporate clients continually seek financial information about new entities as they are formed. To meet this demand, A.M. Best Co. provides ratings on new organizations and other risk-assuming vehicles using methodology outlined in this report. This methodology covers all new company formations, including start-up ventures not affiliated with a currently rated organization, as well as new company formations within a currently rated group.

A.M. Best's interactive rating process for insurance companies involves numerous quantitative and qualitative factors that are grouped into three categories: balance sheet strength, operating performance and business profile. A.M. Best's methodology for rating new company formations uses the same assessments of balance sheet strength and business profile as it does for established companies receiving traditional rating assignments. Similarly, if the new company formation is a member of a rated group, A.M. Best's methodology *Rating Members of Insurance Groups* applies as it would for a traditional rating assignment.

New companies are formed for many different purposes, employing a variety of business models. For example, some new companies are an extension or spin-off of an existing operation where the new entity is, in effect, inheriting an existing block of business. In other cases, the new company is a more traditional start-up venture where there is no demonstrated track record of operating performance. A.M. Best's rating approach for new companies recognizes these distinctions and allows appropriate flexibility in the assessment and evaluation process. Extensive conversations with, and an assessment of, management are central to this process in any new company rating. This assessment of management includes developing an understanding of the organization's risk management and financial management framework and expertise.

In the case of a true start-up venture, given the additional degree of uncertainty and lack of a track record, assessing the long-term sustainability of earnings and cash flows – keys to the interactive rating process – requires additional rigor in certain areas of the rating process, such as the review and analysis of business plans; the assumptions underlying the company's projections; and operational controls. In addition, to reflect the heightened level of uncertainty inherent in reviewing a newly formed entity of this nature, more stringent quantitative and qualitative metrics are applied to the rating of a new company formation. In particular, initial and prospective risk-adjusted capital levels (and related capital metrics, including financial leverage) typically will need to be well above the levels expected of a comparable existing company with a history of ongoing operations that is assigned the same rating.

Additional Information

Criteria

Understanding Universal BCAR – A.M. Best's Capital Adequacy Ratio for Insurers

Understanding BCAR for Property/Casualty Insurers

Understanding BCAR for Canadian Property/Casualty Insurers

Understanding BCAR for Life/Health

Rating Members of Insurance Groups

Evaluating Country Risk

Insurance Holding Company and Debt Ratings

Analyzing Contingent Capital Facilities

Equity Credit for Hybrid Securities

Best's Credit Rating Methodology – Global Life & Non-Life Insurance Edition

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This criteria report can be found at *www.ambest.com/ratings/methodology*

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This level of relative conservatism applies throughout the development phase of the new company formation, even after factoring in conservative expectations for earnings and investment returns. This additional capital requirement reflects the new company formation's lack of operating history and resulting operating risk.

Requirements for Proceeding With the Rating Assignment

For A.M. Best to proceed with an initial rating assignment, certain conditions and factors must be considered:

• A clearly defined five-year business plan that all principals are in accord with and are well qualified and capable to implement. The plan includes:

- Policy statements on underwriting criteria, investment guidelines and risk management;

- A thorough description of the products offered, pricing standards and the company's distribution and market strategy; and

- Financial projections, along with the underlying quantitative and qualitative assumptions and the anticipated utilization of capital.

• Initial financing in place or expected to be executed with proceeds paid into the capital of the rated (re)insurance entity concurrently with the initial rating assignment.

• Stress-tested capitalization that conservatively supports the assigned rating throughout the business plan.

• Management's demonstration of a successful track record of operating performance relevant to the new venture's core business. Experience with organizing new insurance ventures also is factored into the process.

• Experienced management and the appropriate staff and operational infrastructure in place (or adequately addressed in a detailed implementation plan, which may include use of third party servicers) to support initial activities and meet regulatory and rating agency scrutiny.

• Management, board members, strategic investors, investment bankers, actuaries and other advisers available for discussions with A.M. Best and to provide comprehensive disclosure of requested information.

• A follow-up process in place to measure the effectiveness of the initial business plan and to monitor the company's strategic and financial development.

New Company Rating Process

The objective of any Best's Credit Rating is to provide an opinion of the rated entity's ability to meet its senior financial obligations, which for an operating insurance or reinsurance company are its ongoing insurance obligations. Best's Credit Ratings include Best's Financial Strength (FSR), Issuer Credit (ICR) and Debt Ratings. In assigning a credit rating to an established company, A.M. Best looks at balance sheet strength, operating performance and business profile, which is analogous to a review of a new company's initial and prospective capital, sponsorship, business plans, management and operational controls. For definitions of the various types of Best's Credit Ratings and a comprehensive explanation of Best's credit rating process, please refer to *Best's Credit Rating Methodology – Global Life & Non-Life Edition* on A.M. Best's website.

The rating analysis of established and new entities is both quantitative and qualitative. Evaluation of key financial ratios is integrated with a qualitative evaluation of the company's operating plans and philosophies to gain a comprehensive understanding of the company's initial standing and its prospects.

When rating members of groups, A.M. Best employs a top-down and bottom-up approach for both established and new entities within the group. Every legal entity that maintains an A.M. Best rating is reviewed on a stand-alone basis, i.e., the bottom-up analysis. The group's overall strengths and weaknesses also are analyzed, i.e., the top-down analysis. The final published rating for each legal entity within the rated group, including a newly formed subsidiary, considers the potential benefit or drag from its affiliation within a larger organization.

In A.M. Best's credit rating process, all entities, including new company formations, are viewed within the context of the particular country risks to which they are exposed. Under these circumstances, A.M. Best utilizes its country risk methodology, *Assessing Country Risk*, whereby countries are classified into one of five tiers reflecting the various economic, political and financial system risks that can affect an insurer's financial strength. Country risk is one risk factor among many in the rating process. It affects the rating but does not create a ceiling on the rating of the legal entity or group, and some elements of country risk can be managed in the same manner as other risks are managed. A.M. Best's rating system applies the same rigorous criteria to all insurers, new or established, offering a means of directly comparing insurers regardless of longevity or country of domicile.

Key Rating Factors

The analytical components of A.M. Best's interactive credit rating process for new insurers involve numerous quantitative and qualitative factors that can be grouped into the two evaluative categories of balance sheet strength and business profile. A third evaluative category of operational controls encompasses the stringent set of qualitative analysis and standards used to assess operating performance, given the lack of a measurable track record of operating performance inherent in a new company formation.

1. Balance Sheet Strength

A. Capitalization

A.M. Best's assessment of the strength and quality of a company's balance sheet is the underpinning of any credit rating. Key factors typically reviewed to assess a company's financial stability and flexibility include:

• Initial on-balance-sheet capital level, other committed capitalization and complementary financing sources.

• Stress-tested capitalization, based on the Best's Capital Adequacy Ratio (BCAR) model under various scenarios, that conservatively supports the assigned rating throughout the operating plan.

• Capital structure – equity and debt financing.

• Use of reinsurance, credit facilities and other forms of contingent capital financing.

• Quality and diversity of assets.

• Regulatory considerations.

• Investor expectations, including earnings and dividends.

• Capital generation anticipated from core business activities.

• Pricing targets.

• Expected reserving levels (conservative or aggressive).

• Investment strategy for reserves and capital. The investment strategy should be consistent with the mix of business, financial plans, liquidity needs and capitalization. Since investment management is important to preserving capital, A.M. Best will review the quality and diversification of assets and the reputation and experience of the investment managers.

• Expertise and processes for managing assets, liabilities and other drivers of enterprise risk individually, as well as the interrelationships among risks. In reviewing initial and prospective capitalization and operating leverage, A.M. Best begins with the capital requirements of the relevant regulatory authorities. This is followed by a rigorous capital analysis using BCAR to assess the capital that is necessary to support the new venture's operations over a period of time and that is appropriate for the types of business written.

<u>Determining Risk-Adjusted Capital Requirements</u>

The new company should demonstrate that it can support the execution of its business plan while maintaining risk-adjusted capital adequacy at levels well above what typically would be expected of a more mature company at the assigned rating level throughout the period of the operating plan. The amount of

additional capital needed will reflect the risk profile of the business. A higher level of capitalization might be required if the business is subject, for instance, to low-occurrence but high-severity events, or operates in a line of business that typically generates an initial drain on capital due to the slow emergence of profits. A.M. Best also will stress test the pace at which the company expects to utilize its capital. At all rating levels, the capital required will reflect the greater risks inherent in a start-up venture compared with an established company's continuing operations.

As of the initial rating date, A.M. Best expects the new company formation to have adequate on-balance-sheet capital to support appropriate risk-adjusted capital adequacy levels, relative to the rating assigned, considering the company's projected business activities throughout the five years of the business plan. The BCAR calculated for the new company formation and utilized within the rating process will capture the expected level of business writings, investment and asset risk, general business risk and other elements of risk inherent in the new company's operations over the five-year period. It is important to note, however, as with any interactive credit rating, that capitalization and the BCAR results are not the sole determining factors in the assignment of a rating. In determining the published initial credit rating, and the corresponding initial on-balance-sheet capital requirement for a specific new company formation, A.M. Best will consider the type of business to be written; expected growth pattern (including whether the plan calls for organic growth or growth through block acquisition); and availability of additional financial support, as well as risks related to the capital structure of the parent or investor providing additional financial support.

A.M. Best's assessment of the strength and quality of a company's balance sheet also incorporates an evaluation of the company's financial stability and flexibility. The level, quality and permanence of capital, including potential distributions of initial investor capital, are evaluated, taking into consideration the company's appetite for risk, the structure of its assets, its dependence on reinsurance and its liquidity needs. If the organization's capital structure includes some form of debt, contingent or hybrid capital, additional analysis will be performed in accordance with A.M. Best's rating methodology – possibly culminating in a public rating on certain debt instruments. For more information, please refer to the following methodologies on A.M. Best's website: *A.M. Best's Ratings & the Treatment of Debt*; *Analyzing Contingent Capital Facilities*; and *Equity Credit for Hybrid Securities*. Please note, as mentioned earlier, that to reflect the heightened level of uncertainty inherent in reviewing a newly formed entity, higher quantitative and qualitative standards are applied to the rating of a new company formation.

B. Sponsorship and Investors

A new company's sponsors and/or strategic investors can significantly affect its success in meeting its objectives. Their experience and commitment to the company over the near and long term, including any potential exit strategies, are key considerations in the rating process.

A.M. Best considers the competitive advantages that a sponsor might provide to a new company, as well as the new company's expected benefits to the sponsor's core business, as an indication of the sponsor's likely long-term commitment to the new company. It is also important to understand the return investors expect and the reasonableness of these expectations relative to the new company's business plan and existing market conditions. For example, if the sponsor is a rated organization that provides turnkey capability to a new company that, in turn, supports the sponsor's core business, A.M. Best might view that favorably in the rating process.

If the sponsor also provides financial guarantees or reinsurance support that is acceptable to A.M. Best, this too might enhance the rating assessment. A more conservative rating approach is required of situations where investors are looking to make a quick return because of prevailing, favorable market conditions, as short-term adversity could lead them to withdraw support. In these situations, regulatory controls on paid-up capital, and the likely underlying

attractiveness of the operation to future capital providers, are especially important. Expected dividend policy is a key part of the initial rating analysis, and any subsequent increase in the scale or early introduction of dividends compared with the initial plan will be a negative factor in the rating.

The strength of the sponsor/new company relationship is evaluated by considering a variety of factors, such as:

• Type of sponsor or investor – strategic/financial support.

• Level of financial and operational commitment.

• Investors' return expectations (reasonableness, timeliness, exit strategies) and level of management interaction (active or passive investor).

• Linkage or synergies with an existing insurance or noninsurance organization, such as a mutually beneficial long-term relationship with the sponsor.

• Strategic/operational support (distribution or markets).

• Additional financial support (capital contributions, financial guarantees and reinsurance agreements). For more information on how A.M. Best evaluates potential rating enhancement within an insurance organization, please refer to *Rating Members of Insurance Groups* at *www.ambest.com/methodology*.

• Financial flexibility and strength of the sponsor or investor.

2. Business Profile

A. Business Plan and Strategy
A clearly defined business plan is essential. The success of the company depends on management's ability to effectively implement the business plan while remaining responsive to changing conditions. The business plan and financial targets serve as a benchmark against which A.M. Best will measure the company's success in the first few years. Some of the areas A.M. Best explores include:

• Targeted lines of business that are consistent with the expertise and track record of management and, if relevant, the company's strategic investors or its parent company;

• Pricing targets and financial plans that are compatible with expected returns and capital protection and generation; and

• Whether the new company is set up to serve an appropriate business purpose or as a means to reduce taxable obligations.

Key information typically reviewed in A.M. Best's evaluation includes:

• Well-defined five-year business plan;

• Targeted classes of business;

• Competitive environment and the characteristics that will differentiate the company;

• Distribution/client relationships;

• Pricing methodologies and monitoring practices;

• Return expectations vs. market realities;

• Defined risk management and underwriting policy statements;

• Investment strategies, both long term and short term; and

• Projected financial results, including balance sheet, income statement, cash flows and capital obligations.

B. Management
A.M. Best looks at the depth of the senior management in terms of its track record in critical functional areas, such as underwriting and claims management; financial, investment and risk management; information technology; and marketing, sales and distribution. A.M. Best's review of management considers:

• Experience in managing other operations through start-up and changing business conditions.

• Financial and operational risk tolerance.

• Consistency of the business plan and investment strategy with those of sponsors or investors and with market realities.

• Alignment of incentive compensation plans, employment contracts and management investments with the attainment of the company's long-term financial and strategic goals, shareholder value and policyholder security.

• Ability of management to attract key personnel, establish sound business practices, and develop formal monitoring processes and the appropriate infrastructure and operating controls to support operations.

• Succession plans, especially if the founding management is in place only to develop the initial business plan.

3. Operational Controls

Operational controls are important indicators of management's ability and commitment to the quality and longevity of a new company. These controls should be linked to the monitoring and fulfillment of the business plan. Operational controls also are the means by which the new company's growth is managed and provide a large measure of risk management. As part of the review of operational controls, A.M. Best considers:

• Whether statements on investment, risk management, underwriting and accounting policy are defined clearly, and whether those statements are consistent with the company's business plan, capitalization and management's appetite for risk.

• The company's valuation methodology for establishing reserves.

• Its monitoring of catastrophic exposures and modeling techniques used.

• Its process for monitoring of pricing and underwriting decisions, including the frequency and depth of the review process.

• Its monitoring and reporting of investment risk exposures (including fluctuations in interest rates, equity markets, inflation and exchange rates) generated by both the company's asset holdings and its liability structure, as well as the exposure created by the interrelationship of those risks.

• The controls to monitor the new company's distribution relationships, due diligence, productivity, revenue tracking and expense controls.

A.M. Best's Monitoring Process

Maintaining a rating on a new company also requires significant ongoing surveillance by A.M. Best, over and above that already required when rating established operations. In assigning an initial rating, A.M. Best and the company agree on a formal plan to monitor the company's strategic and financial development. This plan usually entails quarterly reviews with management and other principals on the company's progress toward its stated objectives. Any changes in strategy are discussed and considered in the ongoing rating evaluation.

As with the initial rating, A.M. Best requires detailed disclosure in monitoring the rating. Companies are asked to provide all information necessary for continuing analysis. This generally includes annual and quarterly statements, reviews of risk management, revisions of business plans and documentation on insurance written.

Published by A.M. Best Company

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Alternative Risk Transfer (ART)

The purpose of this Alternative Risk Transfer (ART) criteria report is to delineate the rating considerations specific to ART vehicles in the following broad categories: Single-parent (or pure) captives, group captives, Risk Retention Groups, and Self-Insurers Funds. Some ART vehicles operate in a manner similar to a commercial insurer, while others operate in a distinct manner that differs substantially from a commercial insurance carrier. Protected Cell Corporations or "cell captives" are covered under a separate A.M. Best criteria report.

There are three distinct features of ART insurers that are more or less universal to all types of captives: the use and equity treatment of a specific type of letter of credit; the emphasis on capital preservation over operating performance; and the emphasis on business retention over market share. The latter two features are also apparent with many mutual insurers where persistency and surplus accretion are key reasons for their long-standing position in the market.

Related Reports

Criteria

Understanding BCAR for Property/Casualty Insurers

Rating Protected Cell Companies

Risk Management and the Rating Process for Insurance Companies

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This criteria report can be found at *www.ambest.com/ratings/methodology*

Treatment of Letters of Credit for ART Entities

Letters of credit (LOCs) take many forms and typically are treated as debt in the rating process, whether for a commercial insurance carrier or for an ART entity (most often a single-parent captive). However, A.M. Best is aware of the use of a particular type of LOC to capitalize an ART entity, and this arrangement is encouraged by a number of captive insurance regulators to assist a regulator in accessing an ART entity's capital if needed. The details of the LOC must be presented to A.M. Best for capital consideration and determination of equity credit. The LOC generally must have all or most of the following characteristics: stand-alone; irrevocable; evergreen; funded; in favor of the ART entity; and drawn on a highly rated bank. Certain types of LOCs may receive up to 100% capital credit, and that capital credit may not be subject to the usual threshold of 20% of surplus.

By stand-alone, it is meant that the instrument is not part of a credit facility or agreement that may have covenants and terms that can impair the liquidity of the LOC. It should be evergreen and irrevocable, which means that the instrument automatically renews and cannot be canceled except by prior written agreement by all parties. It should be funded with assets on deposit with the bank from which the LOC is drawn, and that bank takes the risk if the assets fall short of the face amount. Finally, the LOC should be drawn on a highly rated bank so that the credit risk of the bank does not cause an undue "haircut" of equity credit.

It should be noted that under similar conditions, qualifying New York Regulation 114 trusts can receive equity credit as well.

Capital Preservation and Operating Performance

The ART marketplace was born out of insurance capacity shortages and price volatility of the commercial insurance market

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that historically have resulted from the vagaries of the underwriting cycle. ART vehicles invariably have the mission to provide consistent, tailored coverage at stable pricing to policyholder owners. This dynamic results in a focus on capital preservation, with less emphasis on profit and return measures. Rated ART entities generally record solid profitability before policyholder and stockholder dividends. As a result, while ART vehicles may appear to have lower levels of underwriting and net income available to common shareholders, consideration is given in the rating process to return measures both before and after policyholder and owner dividends, depending on the historical use of these dividends.

Market Profile

Most ART entities have a limited market share and therefore a limited market profile compared with many commercial insurers. While market profile is still important in the rating process for any insurer, A.M. Best recognizes the unique nature of the relationship between the ART entity and the insured and its impact on market profile. ART vehicles can be different in that they can have customized coverages, customer-specific claims and loss-control solutions, and board representation from owner insureds. Accordingly, retention ratios for ART vehicles tend to be much higher than those of commercial insurers, averaging more than 90%. ART vehicles gain and retain business by narrow and very specific products that are meant to address specific needs. Historically, the "value added" services such as loss control and engineering, in addition to policyholder dividends, have enabled ART vehicles to hold onto customers even in soft insurance cycles.

Single-Parent (Pure) Captives

Market Profile – Given that the customary definition of market profile of a commercial insurer does not apply to a single-parent captive, A.M. Best looks for signs of how well the single-parent captive is entrenched in the risk management and commercial activities of the parent company's business. The continuum ranges from the captive being used simply as a risk financing tool, which represents a relatively weak substitute market profile, to being used as the platform from which the parent company's enterprise risk management program is implemented. A.M. Best will assess the risk management contribution of the captive to the parent company's business operations in this manner.

Volatility of Operating Results – Since a single-parent captive has a relatively narrow scope of risk, there tend to be periods of very low loss activity contrasted with periods of significant losses. What A.M. Best looks for in these cases of volatility is the parent company's previous demonstrated support or documented support agreement, which outlines the intent and ability to support the captive with economic resources if needed.

Net Retention to Surplus – Akin to the rating of a commercial writer, an ART rating can be adversely impacted if the company writes a net aggregate per-occurrence limit that is greater than 10% of surplus. This is especially an issue with ART, as the companies often have limited spread of risk and very specific operating plans. For instance, one misinterpretation of building codes can be very problematic to a group captive that specializes in home construction. In the case of a single-parent captive, the probability of the full limit loss is determined, and then financial resources at the captive and the parent company are assessed for their ability to sustain a full limit loss under stress conditions. For instance, if a single-parent captive writes coverage for several properties in one city, the probability of all of these buildings experiencing a full limit loss in any one accident year is considered in assessing the capital adequacy of the captive.

Loan-Backs to the Parent Company – A.M. Best recognizes that there are a number of reasons why a captive would want to make a loan of working capital back to the parent organization. Domicile-approved loan-backs must be documented properly with an arms-length loan agreement. Then the loan-back is charged a risk factor that contemplates the risks associated with the loan. The largest risk is generally the credit risk of the parent company, which is assessed via external (credit ratings) and

internal financial analyses. Other risks may be present in a loan-back situation, such as the strength of the loan-back agreement and the parent company's cash-flow volatility, and the analyst will assess these on an ad hoc basis.

Group Captives

Group captives are ART vehicles that offer insurance to several or many unrelated policyholder owners and can take many forms. Some group captives dedicate themselves to a particular industry, while others choose to write in a limited geographic area, such as a single state. Group captives are the ART vehicle that most resembles a commercial insurer, and the rating dynamics for a group captive are closer to those of a commercial insurer as well.

Risk Retention Groups

Risk Retention Groups (RRGs) are governed under the Liability Risk Retention Act of 1986, which is a U.S. federal statute, and therefore states' insurance departments have less authority over RRGs than they do over state licensed insurers. This fact makes RRGs distinct in some respects and requires particular attention to the analysis of those differences. The major difference between the rating process of a commercial insurer or group captive and that of a RRG is the treatment of substitute forms of capital, particularly qualifying LOCs and New York Regulation 114 trusts. RRGs are distinct from other types of insurers in that only owners can contribute capital to the group, and only policyholders can be owners. So a managing general agent (MGA) or third-party administrator (TPA) that runs a program utilizing a RRG for writing the liability insurance cannot make a capital contribution to the organization (MGAs and TPAs don't make contributions to regular commercial insurers). What they can do is sponsor a qualifying LOC to bolster equity capital. A.M. Best can give a substantial percentage equity credit in these situations if conditions warrant consideration. This includes a detailed analysis of the sponsor's long-range intentions.

Self-Insurers Funds

Several U.S. domiciles allow for self-insurers funds as an alternative form of insurance. By definition, these types of ART instruments can write only selected coverages for policyholder owners doing business in that particular state. self-insurers funds have two main differences that set them apart from commercial insurers: joint and several liability for any claims, and being governed under a specific charter where the surplus is wholly composed of Subscribers' Savings Accounts. Joint and several liability requires that all of the Subscribers' Savings Accounts and all of the policyholder owners' assets can be used to satisfy any claims. The joint and several conditions can be compared to an unlimited policy assessment feature. A.M. Best generally gives full equity credit to the Subscribers' Savings Accounts, depending on the specifics of the individual self-insurers' fund. These funds, by statute, distribute all net income to the Subscribers' Savings Accounts, so operating performance for this type of ART entity is evaluated pre-distribution.

Conclusion

While the rating process is substantially the same for ART vehicles as it is for commercial insurers, there are some key differences in the way these vehicles operate that do get reflected in the rating process of these types of entities.

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Rating Surety Companies

Although surety insurance companies are analyzed with other property/casualty (P/C) insurers, their unique characteristics require additional analysis during the rating evaluation. This criteria report highlights some of the major categories of surety insurance written by insurers rated by A.M. Best, and describes some of the additional analysis performed beyond that of a typical P/C writer.

One of the distinguishing characteristics of surety insurance is that it involves a three-party contract, rather than a traditional insurance agreement between an insurer and an insured. A surety bond is a three-party agreement among the surety company, a principal and the obligee. The surety guarantees the performance and payment obligations of the principal to the obligee as contracted, which includes the suppliers and subcontractors of the principal. The principal pays a premium to the surety for this guarantee.

Commercial surety bonds include license and permit bonds (including motor vehicle dealer bonds and contractor license bonds); brokers' bonds (including insurance, mortgage and title agency bonds); public official bonds; and miscellaneous bonds that often support private relationships and unique business needs (e.g., income tax bonds, customs bonds and workers' compensation self insurance bonds).

The obligations of commercial surety risks can be many different types, including: reclamation/abandonment, financial guarantee and compliance. Some commercial surety bonds have cancellation provisions, while others have a limited ability to cancel the bond.

Contract surety bonds include bid and performance bonds (the latter can include maintenance and subdivision bonds) and payment bonds. Since many construction projects involve federal funding, companies that have complied with the laws and regulations of the U.S. Department of the Treasury are listed as acceptable sureties on federal bonds under Title 31 U.S.C. 9304-9308 of the United States Code. This Treasury listing is commonly referred to as the "T-listing." This allows the surety to insure contractors involved with federal projects. A T-listing generally allows a surety to provide a contract limit of up to 10% of the surety's capital and surplus per bond issued. Higher limits can be offered, but the excess would have to be reinsured, co-insured or otherwise protected so that the net limit is within the 10% underwriting limitation.

Under contract surety, a surety evaluates a principal based on the "three C's": capacity, capital and character.

• Surety makes sure the principal has the capacity (i.e. the skills, systems and management abilities) to perform its obligations under the contract.

• Surety checks the principal's finances to be sure it has the financial strength (capital) to fulfill the contract.

• Surety researches the principal's character, experience and reputation through interviews and public records to gain an understanding of its ability to meet the contractual obligations to the obligee.

Additional Information

Criteria:
Understanding BCAR for U.S. Property/Casualty Insurers

Risk Management and the Rating Process for Insurance Companies

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The A.M. Best analyst needs to understand how the surety insurer implements the three C's in the underwriting process, as well as gain a level of understanding of the insurer's systems, controls and risk management practices.

In cases where a principal may not have adequate capital to qualify for a bond, the surety may accept collateral from the principal. Collateral, as utilized in surety, is an asset pledged to and held by the surety as a means of securing the performance of the principal. Some contract surety writers also utilize funds control. Under this practice, the surety controls the disbursement and administration of funds for the principal on a construction project. In this way, the surety can be certain there is no commingling of funds between projects and is also in a better position to assist the contractor in meeting its obligations to the suppliers, subcontractors and obligee.

A.M. Best reviews both quantitative and qualitative factors when assigning a rating to an insurer. When reviewing a contract surety insurer, the following qualitative factors will require additional focus in the rating process:

(1) Portfolio Management:

a. Credit Quality:
   i. How the surety determines the credit quality of its principals.
   ii. Tools or models used in credit quality analysis.
   iii. How often the credit quality of each principal is reviewed.
   iv. How many different individuals and which departments review a principal.
   v. Distribution of risks by credit quality and any changes.
   vi. Procedures when a principal has a drop in credit quality.
   vii. For lower quality risks, how the increased risk is mitigated.
b. Geographic spread of risk
   i. The geographic spread or concentration of the portfolio of risks.
   ii. Understanding of the legislative, regulatory, judicial, and economic risks in the locations where they currently operate or plan to operate.
   iii. Reasons for any changes in geographic spread – well researched and planned growth vs. following growth of principals.
c. Account size distribution:
   i. Typical size of an account written by the surety.
   ii. Diversification or concentration by size of account.
   iii. Exposure concentrations in a small number of large accounts, or spread over many accounts.
   iv. Changes in account size distribution.
d. Bond size:
   i. Typical size of bonds written by the surety.
   ii. Concentration of bonds within an individual account.
   iii. Changes in typical size of bonds written.
e. Tenor/tail risk:
   i. Duration of typical bonds written by the surety.
   ii. Distribution of bonds by duration.
   iii. Changes in duration.
   iv. Existence of any nontypical, long-term exposures.
   v. Insurer's ability to cancel bonds.
f. Account composition or business risk:
   i. Types of surety written.
   ii. Existence of any potentially hazardous exposures, such as financial guarantee or more risky commercial surety.

iii. Distribution by type of surety.
iv. Changes in distribution by type of surety.

(2) Claims:

a. Claims department operations conducted in house or through an outside vendor.
b. Claims-handling philosophy, including case load per adjuster, settlement authority, attorney relationships, expertise, etc.
c. Reserving practices:
   i. Procedures for setting initial case reserve, changes to case reserve.
   ii. Procedures for setting incurred but not reported (IBNR) reserves
   iii. Treatment of anticipated salvage and subrogation.
   iv. Frequency and quality of reserve reviews.

(3) Audits:

a. Accountability of management through self-audits or third-party reviews of underwriting and claims processes and practices.
b. Who performs the audits.
c. How frequently are the audits performed.
d. Who reviews the audits.
e. Outcome of recent audits.

(4) Collateral and Funds Control:

a. Types of collateral, typically including real estate, letters of credit, credit cards and personal guarantees (including spousal indemnification).
b. Liquidity of collateral.
c. Procedure for estimating value of collateral and frequency of valuation.
d. Process for accepting collateral.
e. Process when value of collateral declines.
f. Control and release of collateral.
g. Utilization of funds control.
h. Funds control performed in-house or third party.

(5) Other Risk Mitigation Strategies:

a. Reinsurance:
   i. Reinsurer credit quality and capacity.
   ii. Reinsurer expertise in surety.
   iii. Frequency and quality of claim and underwriting audits performed by reinsurers.
   iv. Length of the relationship with current reinsurers.
   v. Type of reinsurance provided.
   vi. Recent changes in reinsurers or type of reinsurance provided.
   vii. Dependence on reinsurance for capacity.
b. Cosurety:
   i. Procedure for using and selecting another insurer as a cosurety.
   ii. Expertise, credit quality and capacity of the cosurety.
   iii. Surety insurer's liability in event of cosurety default.
c. Joint venture:
   i. Policies and procedures for instances when multiple contractors are completing a project together.
   ii. Surety insurer's liability if one of the contractors fails to perform its obligations.

Court bonds are prescribed by statute and can be further broken down into two broad categories. *Fiduciary bonds* are required by the court to ensure that individuals in a position of trust will safeguard assets belonging to others placed under their control. *Judicial bonds* are required in judicial proceedings and include appeal bonds, guardianship bonds and bail bonds. A bail bond is a type of judicial bond that guarantees the appearance of a criminal defendant in court. When evaluating a bail bond writer, additional information is requested regarding the ways in which agents are appointed, managed and monitored, especially regarding powers of attorney.

Bail bonds are unique in that bail agents are contractually obligated to make sure the criminal defendant appears in court at the proper time. Generally, the gross premium paid by the defendant for a bail bond is 10% of the bond limit. Since the bail agent is the insurer's first line of defense against potential loss, the agent typically receives a commission of approximately 90% of the gross premium so that the agent has the financial resources to assure compliance with the court. Since the insurer keeps approximately 10% of the premium charged by the agent, and the premium charged by the agent is 10% of the bond limit, the net premium retained by the insurer is approximately 1% of the bond limit.

Depending on the state, some bail insurers are required to report their premiums net of commissions, while others are required to report it gross of commissions. This has implications for how A.M. Best treats premium in its Best's Capital Adequacy Ratio (BCAR) model. In an effort to ensure consistent treatment of bail bond insurers, A.M. Best will use the bail bond premium written net of commission as the basis for determining required capital for pricing risk on the premium risk page in BCAR. For U.S. insurers, this can be obtained from the Bail Bond Supplement in the statutory statement, provided it is completed accurately. The capital factors applied to the net premium will vary according to the size of net premium and profitability of the bail bond business. A sample calculation is shown in **Exhibit 1**. The benefit to using the net premium is that it reflects the relative net exposure of insurers using a managing general agency (MGA) structure versus those that do not. Bail bond insurers using an MGA structure retain a lower net premium because of the extra layer of commissions paid, but some of the losses are absorbed at the MGA level, resulting in lower net exposure to the bail bond insurer. Premiums net of commission can be reduced for premium ceded to reinsurers after capital factors have been determined using premium net of commission only.

Bail agents set aside a portion of their commission income in build-up funds (BUF) that the insurer has access to in the event an agent is unable to meet its obligations. For some insurers, the aggregate amount of BUF accounts can be sizable. It also can distort the balance sheet, as many bail companies record the BUF accounts as both a noninvested asset and a liability. As a result, current liquidity ratios (roughly defined as cash and invested assets divided by liabilities) may be low for bail bond writers because of the BUF fund liability. Since this liability is supported by noninvested assets, it is important to remove the impact from

Exhibit 1

Sample Capital Factor Calculations for Bail

Based on underwriting profit (excludes investment income).

Sample Highly Profitable Company

	Bail Bond Written Premium Capital Factors		
	(1)	(2)	(3) = (1) * (2)
Written Premium Net of Commission ($)	Industry Baseline NWP Capital Factor	Underwriting Profitability Factor*	Final NWP Capital Factor
NWP < 1 million	0.80	0.80	0.64
1m <= NWP < 2m	0.70	0.80	0.56
2m <= NWP < 3m	0.60	0.80	0.48
3m <= NWP < 4m	0.50	0.80	0.40
NWP >= 5m	0.40	0.80	0.32

Sample Unprofitable Company

	Bail Bond Written Premium Capital Factors		
	(1)	(2)	(3) = (1) * (2)
Written Premium Net of Commission ($)	Industry Baseline NWP Capital Factor	Underwriting Profitability Factor*	Final NWP Capital Factor
NWP < 1 million	0.80	1.20	0.96
1m <= NWP < 2m	0.70	1.20	0.84
2m <= NWP < 3m	0.60	1.20	0.72
3m <= NWP < 4m	0.50	1.20	0.60
NWP >= 5m	0.40	1.20	0.48

* Profitability Factor varies from 0.80 (highest profitability levels) to 1.20 (unprofitable).

this ratio to get a better view of the insurer's balance sheet liquidity. It should be noted that BUF accounts are not commingled and as a result, an insurer cannot reduce losses from one agency by using BUF accumulated by another agency.

Another divergence from traditional P/C ratios is in the loss, expense and combined ratios. Bail insurers typically have very low losses, as they are absorbed by the agents (through the BUF). As a result, loss ratios for the insurer tend to be less than 10 on average for bail writers rated by A.M. Best. However, with 90% or more of premiums retained by agents as commissions, this leaves a very low premium base with the insurer; expense ratios therefore tend to be very high, typically exceeding 80%. When a bail writer has an affiliated general agent that is responsible for bail production, A.M. Best also will look at that agency's expense structure and operating results to determine whether potential losses at that entity might spill over to the insurer in the form of demand for capital (through common ownership).

Premium Taxes

The issue of using premiums gross or net of commissions has evidently spilled over into the payment of premium taxes. Bail insurers face potential liabilities for premium tax payments. In the few states where insurers are required to report premiums gross of commission, some have reported premiums on a net basis, resulting in an accumulated liability for insufficient premium tax payments. South Carolina, Texas, Connecticut and Nevada are auditing bail insurers and have been fining those that are out of compliance. The analyst needs to find out whether the insurer has taken steps to mitigate this exposure to prevent being fined. A reduction to surplus may be necessary in the insurer's BCAR for this potential liability if the insurer has not accrued an estimated liability on its own.

Capitalization

As part of evaluating capitalization of contract surety writers and bail bond insurers, A.M. Best will include a reduction to reported surplus in the published BCAR due to a potential large loss.

For contract surety writers, the potential large loss will be the largest net after-tax loss, selected from the surety's principals with the largest exposures, such that the net loss for each principal is based on the 90% probable maximum loss (PML) net of collateral and

Exhibit 2

Sample Calculation of Potential Losses for Contract Surety

Amounts shown in whole dollars. Loss Severity Model Factors are based on the type of business, region of operation, size of total limits and concentration of bond limits for that principal.

		(1) Largest Exposure	(2) 2nd-Largest Exposure	(3) 3rd-Largest Exposure	(4) 4th-Largest Exposure	(5) 5th-Largest Exposure
1	Gross Exposure for Principal	$ 10,000,000	$ 7,000,000	$ 5,000,000	$ 3,000,000	$2,000,000
2	Loss Severity Model 90% PML Factor	0.15	0.30	0.16	0.25	0.40
3	**Loss Severity Model 90% PML Amount = (1) * (2)**	**1,500,000**	**2,100,000**	**800,000**	**750,000**	**800,000**
4	Co-surety's Share %	40.0	20.0	0.0	0.0	0.0
5	Co-surety's Share Amount = (3) * (4)	600,000	420,000	-	-	-
6	**Net PML Amount after Co-surety = (3) - (5)**	**900,000**	**1,680,000**	**800,000**	**750,000**	**800,000**
7	Acceptable* Collateral Amount	300,000	180,000	100,000	150,000	50,000
8	**Net PML Amount after Co-surety & Collateral = (6) - (7)**	**600,000**	**1,500,000**	**700,000**	**600,000**	**750,000**
9	XOL Reinsurance Amount	-	500,000	-	-	-
10	Quota Share Reinsurance Amount	120,000	200,000	140,000	120,000	150,000
11	**Pretax Net Potential Loss Amount = (8) - (9) - (10)**	**480,000**	**800,000**	**560,000**	**480,000**	**600,000**
12	Federal Tax Rate	35.0	35.0	35.0	35.0	35.0
13	**After-Tax Net Potential Loss Amount = (100% - (12)) * (11)**	**$ 312,000**	**$ 520,000**	**$ 364,000**	**$ 312,000**	**$ 390,000**
			Largest After-Tax Net Loss			2nd-Largest After-Tax Net Loss

*Collateral must be easily and quickly convertible into cash.

reinsurance. The 90% PML for each principal can be calculated using the most current construction loss severity model developed by the Surety & Fidelity Association of America (SFAA). The principals examined will be based on the total bond limits for each principal, where total bond limits equals the sum of in-force bond limits plus the sum of all bond limits expired in the past 12 months. A sample calculation of the net after-tax loss is shown in **Exhibit 2**.

For surety writers whose largest exposures are located outside the United States, potential large losses will be developed based on information provided by the surety company pertaining to its largest exposures, including open limits, limits expired in the past 12 months, cost to complete, historical large losses incurred, reinsurance program, co-sureties, etc.

In addition, A.M. Best will perform a stress test on the contract surety's BCAR. A stressed BCAR will be calculated by assuming the largest net loss occurred and then estimating what the insurer's BCAR would look like shortly after that first event occurred. This results in a reduction to reported surplus in the amount of the largest net loss (after tax), followed by an increase in recoverables (40% of the ceded loss), an increase in the net loss reserves (40% of the net pretax loss) and a reduction to surplus for the second-largest potential net loss (after tax) calculated from the principals with the largest exposures. The 40% factor may be adjusted up or down by the analyst based on the reinsurance contracts in place. The stressed BCAR will be examined and discussed with the company but will not be published.

For non-construction commercial surety portfolios, if the portfolio contains several large potential loss exposures, then the portfolio will be evaluated in a manner similar to construction contract exposures by estimating a potential large net loss for each large exposure and using the largest potential losses in the BCAR analyses. However, if the exposures are smaller and more effectively analyzed on an aggregate basis, then the aggregate exposure will be considered using an approach that is similar to the approach used on other P/C lines of business where non-catastrophe premium and reserve risks are captured through the use of capital factors in BCAR.

In a similar fashion for bail insurers, A.M. Best will gather information on the five largest bail agents producing business for the insurer. The open liability amount will be used to determine which agents are the five largest producing agents. For each of the top five bail agents, the open liability will be adjusted down to approximate the true current open liability, as the open liability reported by the insurer typically is overstated because of lags in the reporting of bond closures. A bond forfeiture rate of 3% is applied to the adjusted open liability for each bail agent, and the BUF held for that agent are used to reduce the agent's loss exposure. The result will be tax effected. The largest net after-tax amount from those five agents will be used as a potential loss in the published BCAR, resulting in a reduction to reported surplus. A sample calculation of the net after-tax loss is shown in **Exhibit 3**. A.M. Best also will review the insurer's current and historical total forfeitures to determine whether the amounts calculated for the top five agents need to be adjusted.

Exhibit 3

Sample Calculation of Potential Losses for Bail

($ Thousands)

Top Bail Agents	Reported Open Liability	Adjustment (%)	Estimated Current Open Liability	3% Bond Forfeiture Rate	BUF Balance	Gross Exposure	Reinsurance Amount	Pre-Tax Net Exposure	FIT Rate (%)	After-Tax Net Exposure	
Agent 1	$1,000,000	50	$500,000	$15,000	$10,000	$5,000	$2,000	$3,000	35	$1,950	= 2nd-Largest Net Loss
Agent 2	500,000	50	250,000	7,500	2,000	5,500	2,200	3,300	35	2,145	= Largest Net Loss
Agent 3	300,000	50	150,000	4,500	1,000	3,500	1,400	2,100	35	1,365	
Agent 4	200,000	50	100,000	3,000	500	2,500	1,000	1,500	35	975	
Agent 5	100,000	50	50,000	1,500	200	1,300	520	780	35	507	

In addition, A.M. Best will perform a stress test on the bail insurer's BCAR. A stressed BCAR will be calculated by assuming the largest net loss occurred and then estimating what the insurer's BCAR would look like shortly after that first event occurred. This results in a reduction to reported surplus in the amount of the largest net loss (after tax), followed by an increase in recoverables (40% of the ceded loss), an increase in the net loss reserves (40% of the net pretax loss) and a reduction to surplus for the second-largest potential net loss (after tax) calculated from the five largest agents. The 40% factor may be adjusted up or down by the analyst based on the reinsurance contracts in place. The stressed BCAR will be examined and discussed with the company but will not be published.

While these stress tests will represent A.M. Best's typical stress testing for contract surety and bail insurers, the analyst may determine that additional testing and/or adjustments to the above tests are appropriate. If an insurer writes both contract surety and bail, the potential losses used in BCAR will be from the calculations generating the higher potential losses. As long as the stressed BCAR does not fall more than 30 points below the BCAR guidelines for the rating, there likely will be no rating pressure from the stress test. For those insurers that write other lines of business that are exposed to other, uncorrelated catastrophe losses, the potential large losses used in BCAR will be the higher of surety, bail, catastrophe or other potential or actual recent large losses.

Exhibit 4

Sample Adjustments in BCAR for Contract Surety

Based on sample data in Exhibit 2.

(USD Thousands)

Adjustments in Published BCAR:		
	Amount	**Description**
Reduction to Reported Surplus:	520	Largest after-tax net loss (from Exhibit 2, Column 2, Line 13)
Adjustments in Stressed BCAR:		
	Amount	**Description**
Reduction to Reported Surplus:	520	Largest after-tax net loss (from Exhibit 2, Column 2, Line 13)
	390	2nd-largest after-tax net loss (from Exhibit 2, Column 5, Line 13)
	910	Total reduction to surplus
Increase to Recoverables:	448	40% of losses ceded to reinsurers & co-surety on largest net loss*
		= 40% times (420 + 500 + 200)
		= 40% times (Exhibit 2, Column 2, Lines 5, 9 and 10)
Increase to Net Loss Reserves:	320	40% of largest pretax net loss
		= 40% times 800
		= 40% times (Exhibit 2, Column 2, Line 11)

* Assumes surety is contingently liable for co-surety's share of loss. If surety is not contingently liable, then the co-surety's share will be removed.

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Rating Run-Off Insurers and Specialists

Although analyzed in a manner similar to other insurers, run-off insurance companies have unique characteristics that require additional analysis during the rating process. This criteria report describes 1) the approach to rating insurance companies that have been placed into run-off and 2) the approach to rating run-off specialists: insurance companies that have a business strategy of acquiring and managing run-off (re)insurers or run-off books of business.

Stand-Alone Considerations

Every insurance company that maintains an A.M. Best rating, including an insurer in run-off, is reviewed on a stand-alone basis. The insurer's strengths and weaknesses are analyzed, without any benefit or drag from its affiliation with a larger organization. As when evaluating other insurers, the balance sheet strength of an insurer in run-off is the most important area to evaluate when determining claims-paying ability.

Many life/health run-off companies are quite profitable, given the absence of new business expense strain. It is common for these companies to grow surplus organically – often more quickly than companies writing new business.

On the other hand, since property/casualty run-off insurers have no renewal premium and limited business profile, the stand-alone assessment of property/casualty run-off companies generally focuses on the adequacy of loss reserves to fulfill the company's policyholder obligations; the credit risk and structure of any existing reinsurance program; and the liquidity profile, asset allocation and revenue generated by the company's investments.

For property/casualty insurers, estimating the timing and amount of future loss reserve payout patterns on a run-off portfolio is subject to considerable uncertainty, especially when policy limits are high and claim settlements are unpredictable. Credible estimates of future payout patterns are critical to the forward-looking evaluation of a run-off insurer's creditworthiness and are a key component of A.M. Best's analysis of run-off insurers. Special attention is paid to historical payout patterns of the blocks of business, as the risk of adverse reserve development could threaten a run-off company's capitalization even more than a typical property/casualty (re)insurer, given the absence of annual renewal premium income to offset cash outflows that may have unexpected size or timing. Importantly, the circumstances that led the company to be placed into run-off are considered to determine what adjustments should be made to Best's Capital Adequacy Ratio (BCAR) to appropriately reflect the company's changed circumstances.

A.M. Best evaluates the run-off company's selected asset allocation strategy for risk and sustainability, and future investment income projections are evaluated against prior portfolio yields and new money rates. Insurers may be tempted to compensate for a historically low interest rate environment by imprudently chasing yield or riskier investments. In addition, annuity blocks in run-off face liquidity risks from increased surrenders due to low crediting rates or distributors' behavior. Many run-off life/health companies may have significant streams of renewal premiums, particularly for life insurance products, which give them the option to fund claims/benefits

Additional information

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Rating Members of Insurance Groups

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with either new money or existing investments. As a result, liquidity risk often is not materially higher than for other companies, and the ability to change asset allocation is not diminished significantly. By contrast, property/casualty run-off companies, with no new premium to invest, have more limited ability to reallocate investments. An increase in asset risk factors to reflect this limited ability to rebalance investments may be appropriate.

Asset-liability matching (ALM) is important, given the expectation that the company will sell its existing assets to pay claims. To the extent that assets and liabilities were not well-matched, it would be appropriate to increase the risk factor associated with the assets to reflect the increased liquidity risk.

Depending on the evaluation of the relevant factors described above, an insurer's stand-alone assessment may not necessarily change when the company is placed into run-off, if the surplus level at the insurer before entering run-off is maintained and supports the remaining balance sheet risks. However, the stand-alone assessment could be downgraded if the run-off status calls into question the insurer's ability to meet its policyholder obligations, particularly when those obligations are long-dated.

The Impact of Run-Off Specialists on Stand-Alone Analysis

Property/casualty run-off specialists are (re)insurance companies with a business strategy of acquiring reserve liabilities to profitably manage the settlement and payout of claims until all liabilities are exhausted. A run-off specialist that is managing the run-off insurer may handle claims more efficiently, given its specialization. In addition, a run-off specialist's financial projections may have more credibility if management has a successful track record of executing its run-off strategy. The run-off insurer owned by a run-off specialist also may have fewer operational risks than if it were owned by a traditional insurance group (e.g., systems issues, lost personnel and employee agency problems). Furthermore, capital at an entity owned by a run-off specialist may experience less pressure to be reallocated to other areas than within an active insurance group. Finally, reinsurance dispute risk can be greater when an entity within an active insurance group is placed into run-off, causing the business relationship and associated premium with the reinsurer to end abruptly.

In addition to property/casualty run-off specialists, life/health companies exist with business segments dedicated to investing in run-off insurers and/or blocks of business, as well as companies that have long histories of holding run-off entities to support earnings.

Rating Run-Off Specialists

The approach for rating an (re)insurance enterprise predominantly focused on the business of run-off is broadly similar to the approach for rating other insurance companies. The approach described above for analyzing the liabilities and assets of insurers in run-off also applies to analyzing run-off specialists. However, given its unique business strategy, additional considerations are included in the analysis for rating a run-off specialist. As mentioned above, run-off specialists are (re)insurance companies with a business strategy of acquiring reserve liabilities to profitably manage the settlement and payout of claims until all of the liabilities are exhausted. A run-off specialist seeks to use its experience managing complex claims, its specialized focus and its economies of scale to profitably manage the run-off of the loss reserves. A run-off specialist will be motivated to effectively run off acquired entities and thereby ease future regulatory approval of additional acquisitions.

A seller may be motivated to dispose of a portfolio of reserves to achieve a clean exit from the business, reduce administrative costs, focus on growth opportunities or reduce the risk of adverse reserve development. The structure by which run-off specialists acquire reserve liabilities can take many forms, including loss portfolio transfer, quota-share agreement or the purchase of an entire company. Notwithstanding the form, the key element of the deal is that the run-off specialist receives assets as consideration for assuming contractual liability for the payment of losses associated with the reserves.

One distinguishing characteristic of a run-off specialist is that it acquires all of its loss reserves from motivated sellers. This raises the concern of potential adverse selection. As a result, when analyzing a run-off specialist, A.M. Best requests actuarial reports detailing the past performance of current and prospective blocks of business. In addition, A.M. Best reviews the level of conservatism built into projections of future loss payments, given the uncertainty of profitability due to the risks of mispricing and adverse selection. Finally, the track record of management's prior deals is even more important in evaluating a run-off specialist. If prior acquisitions have a track record of unanticipated, material adverse development, then A.M. Best incorporates this into its view of management's projections of profitability.

A.M. Best re-evaluates its fundamental view of a run-off specialist's capitalization upon each potential acquisition of material size. When analyzing financial projections for operating performance and capitalization, the analysis reflects that future growth will be driven by acquisitions whose size, number and profitability are uncertain and could vary widely. The uncertainty in these factors influences the amount of capital required. Also, the ability of a run-off specialist enterprise to support all of its run-off liabilities is finite, and the ability to support older acquisitions is considered each time new run-off reserves are acquired. In addition to performing an analysis of the historical claim-settlement history of a block of business targeted for acquisition, an analysis must be done of the discount rate, expenses and profit margin assumptions used in pricing the deal. Reserve portfolios considered unpredictable will require significantly higher risk charges that could affect A.M. Best's view of overall capitalization.

Consideration of Rating Enhancement

When a run-off entity is owned by a parent that is a run-off specialist or maintains a dedicated run-off business segment, strategic importance is more likely to be considered, given that a run-off specialist has a business strategy of acquiring and profitably managing the settlement of reserve liabilities. If a run-off company is part of a larger group, then the approach for applying rating enhancement to a run-off insurer is similar to the approach used for applying rating enhancement to other insurers (see the criteria report *Rating Members of Insurance Groups*). This includes an analysis of the likelihood and level of future financial support that will be afforded from the group based on its strategic importance to the enterprise. However, since a run-off entity within an enterprise focused on ongoing operations is less likely to be considered strategically important to the overall operation, the decision to afford rating enhancement will be based primarily on the degree to which its operations cannot easily be separated from those of the parent or affiliates for legal or reputational reasons.

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Analyzing Perpetual Insurers

Perpetual insurance refers to a unique type of insurance policy that is underwritten without a termination date. Rather than paying an annual premium, the policyholder generally makes a fully refundable deposit to the company for insurance coverage. The company then invests those funds in securities that provide it with its primary source of revenue to cover future losses and expenses. The amount of the perpetual deposit calculated by the insurer is typically a significant multiple of that of an average one-year term insurance policy for the same risk. If the insured cancels the policy at any time, the entire deposit is refunded without interest. Because of the fully refundable feature of the deposit, it is recorded as a liability on the company's balance sheet.

Since the perpetual deposit is fully refundable, the perpetual insurer does not record it as premium revenue. This renders many of the underwriting metrics such as loss ratio, combined ratio, premium leverage, etc. as analytically meaningless for a perpetual insurer. Moreover, the lack of reported premium means that Best's Capital Adequacy Ratio (BCAR) must be adjusted to properly capture the pricing risk represented by the accumulated deposits to represent a meaningful underwriting exposure.

Another distinguishing feature of perpetual insurers is that they tend to follow a "buy and hold" investment strategy. Their equity investment portfolios are most commonly a significant component of their surplus base, consisting typically of long–held, blue-chip issues with significant embedded unrealized capital gains.

A perpetual insurer also may take the form of an assessable mutual, in which the policyholder pays an initial premium that may be higher than that of a term policy, but significantly lower than a perpetual deposit. This is followed by annual assessments, typically expressed as a percentage of the initial premium, which are dependent upon the insurer's past, present and projected operating results. The initial premium and subsequent annual assessments are fully earned in the year billed.

I. Evaluation of Balance Sheet Strength

As stated previously, the lack of traditional reported net written premium means that the BCAR model needs to be adjusted to fully capture the pricing risk represented by the accumulated deposits or assessments.

Consistent with the perpetual insurer's income statement, the premium amounts shown in BCAR are typically negative, reflecting ceded premium for any reinsurance treaties the insurer may have. Thus, to properly account for the premium risk in BCAR, the underwriting exposure represented by the deposits needs to be converted into a "term-equivalent" premium base, which then can be risk charged by the respective capital factors in BCAR to generate an appropriate premium risk charge.

There are two methods of converting to an annual term-equivalent premium:

1) The company provides an estimate of its net written premium (usually based on the subject premium of its existing reinsurance contracts, which can be used as a proxy for its term-equivalent premium).

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2) The analyst calculates a term-equivalent premium based on the comparable average premium for a typical term policy and applies it to the existing policies in force.

Under either method, a net written premium or term-equivalent premium is determined and then used to calculate the appropriate pricing risk charge in the BCAR model. The conversion of the perpetual deposits into a term-equivalent premium results in a more accurate capture of exposure to pricing risk in BCAR for perpetual insurers.

Because of the critical role of total investment returns and the challenges associated with accurately projecting them over the extended life of the company's policies, a perpetual insurer, particularly one using the perpetual deposit method, generally is held to a higher level of risk-adjusted capitalization (BCAR).

Example of Adjustments to BCAR:

Before Term-Equivalent Premium adjustment:

Baseline Premium in BCAR is typically negative for perpetual insurers because of the booking of only ceded premium. The baseline premium thus needs to be adjusted to reflect Term-Equivalent premium. In the hypothetical example, assume that the baseline net written premium in BCAR is -$1.5 million (i.e., represents the ceded written premium).

After Term-Equivalent (TE) Premium adjustment:

Average deposit on a typical perpetual policy: $12,000

Average premium of comparable 12-month term-equivalent policy: $1,500

Total policies in force: 4,000

TE Direct Written Premiums (DWP): $6 million (i.e., $1,500/policy × 4,000)*

TE Net Written Premiums (NWP): $4.5 million ($6 million DWP - $1.5 million Ceded)**

* Use in Page 8 of BCAR for growth charge calculation.

** Use in Page 6 of BCAR for calculation of net written premium risk.

Net Impact on Premium Risk in BCAR:

Premium Capital Factor (PCF) = 0.25

Premium risk charge prior to adjustment: $0 (reflects negative net written premium).

Premium risk charge following adjustment: $4.5 million NWP × 0.25 PCF = $1,125,000

Net increase in premium risk charge in BCAR: $1,125,000

II. Evaluation of Operating Performance

Because of the unique business models used and the resulting effect on traditional written or earned premium, many of the standard underwriting and operating

performance metrics used to evaluate a property/casualty term insurer are not applicable to the analysis of a perpetual insurer. Thus, the loss and loss-adjustment expense (LAE) ratio, expense ratio, combined ratio and investment income ratio, all of which are calculated by using written or earned premium as the denominator, are not meaningful. Furthermore, certain operating return measures, such as pretax and after-tax return on revenues, also are not applicable as measures of operating performance, since premium revenues are not a meaningful part of a perpetual insurer's income statement.

The evaluation of a perpetual's long-term profitability and capital generation also considers management's assumptions regarding total investment returns. Fluctuating interest rate and volatile equity market environments present challenges regarding expectations of future investment income and capital appreciation. However, as they are integral to arriving at the amount of perpetual deposit sufficient to support the long-term nature of the company's underwriting risk, a complete understanding of these assumptions is a key component of the analytical process.

In addition to proper pricing in the context of investment income, the risk factors assigned in BCAR by the analyst to the investment portfolio (as explained previously) also highly influence the rating analysis and final rating decision.

For deposit-based perpetuals, an inverse relationship exists between new business growth or retention and interest rate levels. It is possible that if interest rates are high, existing perpetual policyholders may surrender their existing policies to get full deposit refunds, or potential insureds would not purchase perpetual policies, as returns on market-based investments would be viewed as more attractive. Since the deposits are recorded as liabilities, the surrender of an existing policy would not reduce surplus. Conversely, if market interest rates are low, current and potential insureds would more likely consider the perpetual policy more desirable.

For the analyst, return measures such as total return on invested assets (TROIA), which is a measure of the profitability of the investment portfolio, and total return on equity (ROE), which takes into account both investment and underwriting performance, better indicate a perpetual insurer's overall profitability. Loss data are requested from management to show the profitability of the book of business. In addition, expense data are evaluated to measure efficiency within the operation. As in the analysis of traditional homeowners writers, trends of these measures, typically over the past five years, are evaluated. An importance difference from deposit-based perpetuals, however, is that assessable mutuals have the ability to increase annual assessment rates when operating or investment results are impacted negatively by catastrophe losses or volatile investment markets.

Policy language is evaluated to determine whether there are any long-term concerns regarding emerging risks to which the company cannot typically respond because of the permanent nature of the policy.

Depending on the geographical spread of risks, this business has the potential to be volatile because of catastrophe-related losses. Therefore, in all cases, the analyst requests probable maximum loss (PML) data along with the structure of the reinsurance program to help determine the effectiveness of this risk management strategy.

Since the perpetual business model is so dependent on investment returns, capital gains/losses both before and after taxes are evaluated. Investment reports also help reveal potential concerns such as sector concentrations, large single-issue investments and the degree of volatility in returns. The analyst also determines whether investments

are handled internally or externally and how the investment manager's performance is evaluated. The volatility of earnings, driven by both investments and underwriting, and its resulting impact on surplus are considered in the rating evaluation process.

III. Evaluation of Business Profile

Perpetual insurance is the oldest form of property insurance offered in the United States, with the first policy offered as far back as the 1750s. However, this form of insurance currently represents a niche market, since only a handful of companies offer it. As the deposit generally required to purchase a perpetual insurance policy is usually many multiples of a standard term insurance policy premium, the deposit-based perpetual writers' customer base generally is limited to high-net-worth or high-income individuals or households. The large deposit required also serves as a high barrier to entry for other insurers that are interested in serving a more diversified insured base. Conversely, assessable mutuals may be able to serve a more diverse population because their initial premiums are in many instances within current market pricing.

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Rating Protected Cell Companies

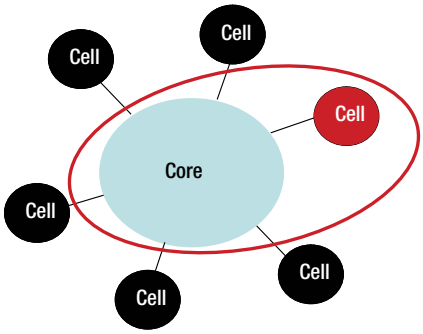
The protected cell company (PCC) is a highly complex and flexible structure that can be utilized in a variety of ways by multiple users and sponsors. It is used to hold any number or combination of insurance and financial operations, transactions or instruments.

Accordingly, the existing criteria used by A.M. Best to rate operating companies and debt issues also are applicable to PCCs. For example, *Alternative Risk Transfer* would apply to a single-parent captive program that is housed in a PCC.

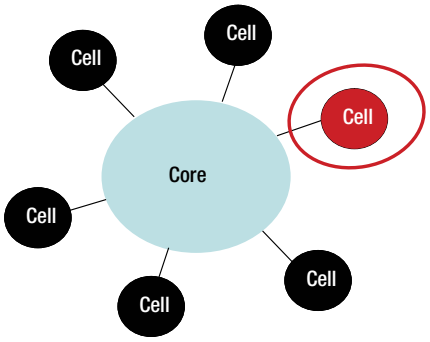
Evaluating the financial strength of a protected cell or protected cell company requires a clear understanding of the characteristics of the business that is placed in a PCC, the structure of the PCC, the domicile and the program's ability to handle the exposures of its sponsoring organization. If the insured organization establishes its own PCC and subdivides its risks into a number of protected cells (PCs) within the PCC, then for all practical purposes it will be treated like a pure captive insurer for rating purposes. Also, if a cell has financial flexibility to access additional funding from its sponsoring organization, this option would be treated on terms equivalent with that of a pure captive operation and can be rated in a comparable fashion.

On the other hand, if an organization places its risks into protected cells that either have no access to additional funding and/or are under the umbrella of another entity's PCC, or core, then that PC must be reviewed carefully to ensure that the anticipated

Ringfencing in Protected Cell Companies



In some jurisdictions and certain cell company configurations, creditors can claim against the core.



In other jurisdictions, assets of the cell are ringfenced from both the core and other cells.

Information Needed to Rate A Protected Cell Captive

The information needed will vary based on the particular business/issue placed in the PCC. However, most PCCs would have to provide at least the following information:

1) Audited financials for the PCC and each cell
2) Actuarial reports
3) Contractual agreements between cells
4) Collateral agreements
5) Reinsurance agreements
6) Cell sponsor/user information

Additional Information

Criteria:
Alternative Risk Transfer

2011 Special Report:
U.S. Captive Insurance – Market Review

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This criteria report can be found at *www.ambest.com/ratings/methodology*

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protection will exist should it be needed. It is important to know the quantity of risk transferred to the cell, based on both expected and worst-case scenarios. The generally smaller size and limited scope of individual PCs make stress testing for various adverse scenarios more important, particularly if financial flexibility is limited. Nonetheless, due to the flexibility allowed in the contractual arrangements in establishing a PC, mechanisms can be incorporated to allow for various means to either fund the cell adequately up front for all reasonable circumstances, or to have access to on-demand additional funding from the PCC or from the owner of the cell.

The analytical team will examine the PC's financial condition, its risk profile, its actuarially determined loss and IBNR reserves, and the credit exposures it has accumulated. In addition, its contractual relationships with other protected cells, if any, and with the core PCC will be reviewed thoroughly. Financial flexibility and the adequacy of the PC's capital relative to the risks assumed are the critical factors in this analysis. Assuming that designated, individual protected cells exclusively bear all the risks placed with a PCC organization, and that the PCC core does not take any of these underwriting risks, then the analysis will focus on the likelihood of the PCC's own capital base being eroded from any contractual relationships it has with the member PCs. This could take the form of capital maintenance guarantees, stop-loss agreements or similar arrangements with the PCs. Here too, the contracts need to be examined carefully to determine the extent of these liabilities, as well as the potential for attachment of funds by a regulator or a court of law in the case of any member PC becoming insolvent. In these cases, a financial evaluation of all PCs, which could have a potential material impact on the PCC, needs to be conducted, regardless of whether those PCs are rated individually or not, and the aggregate exposure to the PCC must be compared with the PCC's resources to respond to those needs. A financial strength rating on a PCC does not automatically extend to the individual PCs within the protected cell company structure.

To date, there has not been a full test in a court of competent jurisdiction of the legality of the walled-off structure between any two or more cells within a cell company. The preponderance of legal opinion on the legislation, however, comes in on the side of the protected nature of each cell. Lingering issues remain that could have an impact on the protected cell movement. These include tax liability matters; insolvencies of sponsoring companies; and run-off situations.

Control and monitoring of any protected cell captive program is crucial to ensure that the expectations for response to claim incidents will be met, given the capabilities and limitations of the cell captive. There are certain overriding themes and issues that will have an impact on the utility of such a program for the insured and on the financial strength associated with it. Fronting and reinsurance agreements will be examined in detail to determine whether the protected cell program will be impacted adversely by the provisions contained in those agreements. Other important considerations include the type of protected cell that is employed, whether open, closed or some variation in between; the contractual relationships among the cells in the program and between them and the core; and the ability of each cell to absorb shock losses or adverse development. Finally, as all domiciles offering venues for protected cells have some variations among their enabling legislative and regulatory provisions and their enforcement mechanisms, the regulatory framework under which the protected cell company and the PCs are established will be evaluated and monitored.

From RACs to SACs

There are a variety of terms used in reference to protected cell companies and similar structures. With more than 30 different domiciles having promulgated PCC legislation and with the differences among the laws, the multiplicity of terms is not surprising. In addition, the protected cell company may be viewed simply as a variation of the rent-a-captive structure or even a special-purpose vehicle. There also are several other legal structures that have similarities to the PCC. Hence, the multitude of terms, structures and perspectives may cause confusion, even for the experienced ART practitioner. Below are some of the terms and acronyms used:

PCC Structures:

The following list of names and acronyms includes examples of the terminology utilized by various domiciles to refer to actual PCCs.

Incorporated Cell Captive (ICC) (e.g., used in Jersey)

Protected Cell Company (PCC) (e.g., used in many U.S. state domiciles)

Segregated Accounts Company (SAC) (e.g., used in Bermuda)

Segregated Portfolio Company (SPC) (e.g., used in Cayman)

Sponsored Captive Insurance Company (SCIC) (e.g., used in Vermont)

Other Structures:

Producer Owned Reinsurance Company (PORC) – Captive reinsurance entity established to provide reinsurance for a producer's business.

Rent-a-Captive (RAC) – (Re)insurance entity that rents its capital, surplus and license to clients and provides administrative services. Clients' business is separated by accounting and contractual means.

Special-Purpose Vehicle (SPV) – Corporate entity created to enable a specific business transaction and fulfill a narrow objective.

Special-Purpose Financial Captive (SPFC) – Corporate entity created for the securitization of insurance risk. It may establish protected cells.

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Rating Takaful (Shari'a Compliant) Insurance Companies

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A.M. Best's Perspective on Operating Leverage

Risk Management and the Rating Process for Insurance Companies

Evaluating Country Risk

Rating Members of Insurance Groups

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This criteria report can be found at *www.ambest.com/ratings/methodology*

This report highlights the main issues arising when applying A.M. Best's rating methodology to takaful insurance companies. Takaful insurance (or insurance compliant with Islamic beliefs) is clearly on the rise, particularly in the Middle East and Malaysia, and despite their many similarities with conventional mutual operating structures, A.M. Best believes there are distinctive issues with these companies that need to be highlighted. However, it is important to mention that the main principles on which A.M. Best's financial strength methodology are based remain unchanged, regardless of the type of company being analysed.

As is discussed later, each takaful company must establish a Shari'a board that sets the basic rules and principles governing the takaful company's activities, and ensuring that it operates within Islamic Shari'a principles. A.M. Best will not specifically comment on takaful companies' degree of compliance with Shari'a. However, as part of the interactive rating evaluation, A.M. Best will discuss items such as: the organization's corporate and management structure; the type of takaful business model employed; corporate governance and the role of the Shari'a board; and the insurer's performance versus key strategic and financial objectives. For further information on the breadth and depth of the rating evaluation, please refer to Appendix 1 – Sample Takaful Meeting Agenda.

The discussion that follows includes: a review of some of the key principles of takaful; how these principles are incorporated into a takaful company's business model; and how A.M. Best's rating methodologies are applied in the assessment of these organizations.

Principles of Takaful

The first takaful insurer was established in Sudan in 1979, and the market now has grown to comprise roughly 200 companies, including "windows" (operations affiliated with conventional insurers). Takaful includes both general (non-life) and family (life) products. The family product line includes life and health insurance plans, as well as education, accident and travel medical plans. The surge of takaful companies in recent times is a response to the commonly accepted incompatibility between Islamic beliefs and the conventional insurance model.

Takaful insurance is essentially a cooperative risk-sharing program established for the well-being of the community. The purpose of this system is not to generate profit, but to uphold the Islamic principle of Al-Takaful – "bear ye one another's burden." As a result, takaful insurance is based on the concept of mutual cooperation, solidarity and brotherhood. Takaful participants contribute (donate) to help protect one another against the impact of unpredicted risk and catastrophe, whereas in the conventional insurance model, policyholders pay premiums to protect themselves, or their interests, from some form of risk.

Other Islamic beliefs or principles that takaful operations intend to address are the avoidance of both uncertainty, particularly in terms of

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the amount and timing of claim payments to be made; and excessive profit (seen as usury), be it in the form of payments received in the event of death, or any form of financial interest (e.g., bond coupon payments).

Underwriting and actuarial techniques apply in a similar manner as under conventional insurance, in that the takaful insurer evaluates the risk of potential loss and establishes a contribution (premium) base appropriate for that aggregate risk to protect the pool from undue losses. However, unlike the risk-based premium paid by a policyholder in a conventional insurance model (where each insured pays a rate commensurate with the assumed level of risk), each takaful participant shares equally in supporting the pool in recognition of the underlying principle of mutual cooperation.

As to reinsurance, it also should be based on the takaful pooling concept. The reinsurer should act primarily as a risk manager (retakaful operator) and should not profit excessively from the underwriting results. However, because of the relative lack of capacity and quality of true retakaful carriers, reinsurance with conventional reinsurers may be permitted under certain specified conditions and limitations.

Retakaful Capacity and Financial Security Issues

Reinsurance following the same applicable Islamic principles as takaful insurance is known as retakaful. Reinsurance of takaful business through retakaful companies has been somewhat controversial within the Islamic insurance marketplace, as the growth of direct takaful writers has far outpaced the available capacity of retakaful. In addition, from a financial strength perspective, there have been ongoing concerns over the placement of reinsurance with lower or non-rated retakaful companies, as opposed to higher rated conventional reinsurers. As a result, takaful insurers in effect face issues with both retakaful capacity and financial security.

This has caused takaful companies to develop alternate strategies, including reinsuring on a conventional basis, contrary to the preference of seeking retakaful support. In recognition of this market reality, the Shari'a scholars have allowed takaful companies to seek support from conventional reinsurers under confined conditions. However, the preference still is to utilize retakaful companies whenever possible. Another manner in which takaful insurers have addressed the issue of retakaful capacity is to co-insure (a form of reinsurance) each other's direct takaful writings to reduce the heavy reliance on conventional reinsurance support.

The shortage of retakaful capacity may inhibit the growth of the takaful industry; however, A.M. Best has observed that the issue of retakaful capacity has begun to ease recently as an increasing number of new retakaful companies are being established in response to the market demands. As part of the rating evaluation, as with any insurer, A.M. Best will review the takaful insurer's reinsurance program and the quality and diversity of its reinsurance providers, including the exposure to counterparty credit risk.

Takaful Models & Structures

For takaful programs to be financially sound over the long term, as well as to provide incentive to takaful insurers to develop and promulgate these programs to provide Muslims with alternatives to conventional insurance, these operators to some degree must be rewarded through profits in a more traditional sense. However, profits are not the end goal of the operation.

Muslims believe there is unity in diversity, so there is not one preferred operating model for takaful insurers. Shari'a scholars generally agree on certain fundamental components that are required to be an accepted takaful company; however, operational differences are tolerated as long as there is no contradiction to any essential religious tenets. There are now three primary operating models.

Ta'awuni Model

The Ta'awuni model (cooperative insurance) practices the concept of pure Mudharabah in daily transactions, where it encourages the Islamic values of brotherhood, unity, solidarity and mutual cooperation. In the pure Mudharabah concept, the takaful company and the participant share the direct investment income, while the participant is entitled to 100% of the surplus, with no deduction made prior to the distribution.

From the Ta'awuni concept, there are two basic models, Al Mudharabah and Al Wakalah. In reality, there are many variations of these basic models, but these variations fundamentally follow one of these two conceptual frameworks.

Al Mudharabah. This is a modified profit- and loss-sharing model. The participant and the takaful insurer share the surplus. The sharing of such profit (surplus) differs based on a ratio mutually agreed between the contracting parties. Generally, these risk-sharing arrangements allow the takaful insurer to share in the underwriting results

from operations, as well as the favourable performance returns on invested premiums.

Al Wakalah. This is a fee-based model. Cooperative risk-sharing occurs among participants where a takaful insurer simply earns a fee for services (as a Wakeel, or "Agent") and does not participate or share in any underwriting results. The insurer's fee may include a fund management fee and a performance incentive fee.

Waqf Model

Unlike the Al Mudharabah and Al Wakalah models, Waqf operates as a social/governmental enterprise, and programs are operated on a nonprofit basis. Under the Waqf model, the surplus or profit is not owned directly by either the insurer or the participants, and there is no mechanism to distribute the surplus funds. In effect, the insurer retains the surplus funds to support the participant community.

This model, with a single surplus fund, is most like a conventional mutual insurance model. As such, it is rated in a very similar manner to conventional mutuals. For further information on the rating dynamics of mutual insurance companies, please see A.M. Best's "Rating European Mutual Insurance Companies."

The remainder of the report will highlight the unique elements of takaful companies following the Ta'awuni model, and how these factors are incorporated in the rating analysis.

Main Characteristics of Takaful Companies

Takaful insurers have certain unique characteristics that recognize the key principles of Al-Takaful and fundamental Islamic beliefs.

The establishment of two separate funds: A takaful (or policyholders') fund and an operator's (or shareholders') fund. The takaful fund operates under pure cooperative principles, in a very similar way to conventional mutual insurance entities. Underwriting deficits and surpluses are accrued over time within this fund, to which the operator has no direct recourse. As a result, the takaful fund effectively is ring-fenced and protected from default of the operator's fund. Management expenses and seed capital are borne by the operator's fund, where the main income takes the form of either a predefined management fee (to cover costs) or a share of investment returns and underwriting results (or a combination of both).

Solidarity principle and equal surplus distribution: Given the fact that the takaful fund is seen as a pool of risks managed under solidarity principles, it is not meant to accumulate surpluses at levels excessively higher than those strictly needed to protect the fund from volatile results and to support further growth. Likewise, any fees or profit shares received by the operator should be just sufficient to cover management and capital costs while keeping the company running as an ongoing concern.

In case of financial distress for the takaful fund, the operator is committed to provide it with an interest-free loan, Qard' Hasan, for however long it is deemed necessary – providing an additional layer of financial security to the participants. The Qard' Hasan is likely to be limited to the available capital in the operator's fund or a prescribed limit.

The surplus distribution structure is expected to be managed carefully and in a balanced way, so that neither policyholders nor operator make excessive profits at the expense of the other party.

Restricted investments: Shari'a compliance refers not only to the operational structure of the company, but also to its investment policy. Takaful companies must avoid investing in traditional fixed-income securities (due to the coupon interest payment attached). Instead, they are allowed to invest in sukuk (or Islamic bonds, where coupon payments take the form of a profit share on a particular enterprise). Moreover, investments in stocks (in principle allowed) should avoid the financing of non-Islamic activities (such as alcohol or gambling).

In practice, these restrictions often translate into an excessive concentration in stocks (due to the relative scarcity of sukuk), lower than average credit ratings (increased counterparty exposure) and high geographical concentration.

Establishment of a Shari'a board: An essential component in a takaful company's corporate governance is the establishment of a Shari'a board, in addition to the conventional board of directors. The Shari'a board is made up of

recognised Islamic scholars, who ensure the company's operational model, profit distribution policies, product design and investment guidelines comply with Islamic principles.

The global shortage of recognised Islamic scholars in the insurance arena and lack of consensus in terms of what constitutes Shari'a compliance is, in A.M. Best's view, a challenge for more rapid development of the industry. Having said this, the emergence of some inter-regional and government-supported initiatives in this respect, as well as the participation of individual scholars in more than one Shari'a board, are positive signs of a gradual but slow trend toward convergence.

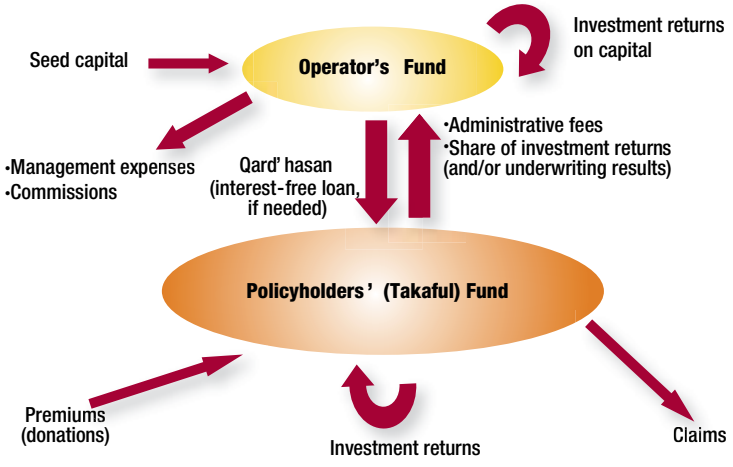
Analysing a Takaful Company

As with conventional mutual insurance companies, takaful insurers have certain limiting features inherent to their business model, such as a relative lack of financial flexibility compared with stock companies, or increased concentration risk compared with broadly diversified insurers. This section discusses some unique elements of takaful insurers and how these are assessed in the rating process.

Two Separate Funds – a Two-Stage Risk-Based Capital Approach

Given that one of the key characteristics of a takaful operation is the existence of two separate funds (the takaful fund and the operator's fund), the starting point for assessing the financial strength of a particular insurance company is to apply Best's Capital Adequacy Ratio (BCAR) proprietary model to the takaful fund in a way very similar to a mutual company.

Exhibit 1
Basic Takaful Model



This first-tier analysis compares the takaful fund's surplus to the capital required to support the fund's obligations to participants, per the BCAR model. The BCAR ratio for the takaful fund, as well as an analysis of the trends in the ratio and other key metrics, is the primary driver of A.M. Best's assessment of the takaful company's balance sheet strength.

A second-tier capital assessment also is performed on the operator's fund. The second-tier analysis compares the surplus position of the operator's fund to the capital required to support the fund's obligations, per the BCAR model.

An operator's fund with much higher financial strength than its corresponding takaful fund normally will enhance the capitalisation assessment in respect of the whole insurance operation, reflecting the increased financial strength provided to the takaful fund's participants. This enhanced financial strength stems from the operator's obligation to provide an interest-free loan (Qard' Hasan) to the takaful or policyholders' fund in situations of financial distress. In cases where such a loan has been made to the takaful fund, the loan will be considered part of the takaful fund's capital base. Additionally, in circumstances where the potential Qard' Hasan (dependent on strength of regulation) is not sufficient to bring the takaful fund to a suitable capital adequacy level, consideration will be given for shareholders' commitment to the takaful fund, such as ring fencing assets in favor of policyholders.

This consolidated view of capital, in effect combining the takaful and operator's fund for analytical purposes, is particularly important in the assessment of takaful insurers in the early years of operation. Currently, it is not uncommon for the operator's fund to be in a stronger relative position, given the relatively short track record of most companies with the resulting low level of surpluses, if any, accumulated at a takaful fund level.

An operator's fund with a weaker financial strength position may not detract from the overall analysis significantly, since the operator's fund cannot access the takaful fund surplus. However, in all cases, regardless of which fund is in a stronger relative position, it also is important to note that this two-tier analysis is supplemented further by a com-

parison of the capital accumulation trends in each of the separate funds to ensure an appropriate balance in the surplus distribution and fee structure.

Main Drivers of Balance Sheet Strength in a Takaful Company

Given the comparatively restricted investment policy of a typical takaful company; its consequent higher levels of counterparty risk; geographical concentration; and higher than average proportion of stock holdings, capital requirements in many cases are significantly larger than for a conventional company of a similar size.

The limited classes of invested assets long have been a barrier to the growth of the takaful industry, as well as a limitation on the development of more long-term products, due to the difficulty in addressing asset-liability management issues. The current situation has improved as the capital markets in Islamic countries have begun to mature and more Shari'a-compliant investment products are available in the market. However, demand is still higher than supply, resulting in increased expense for such investment products.

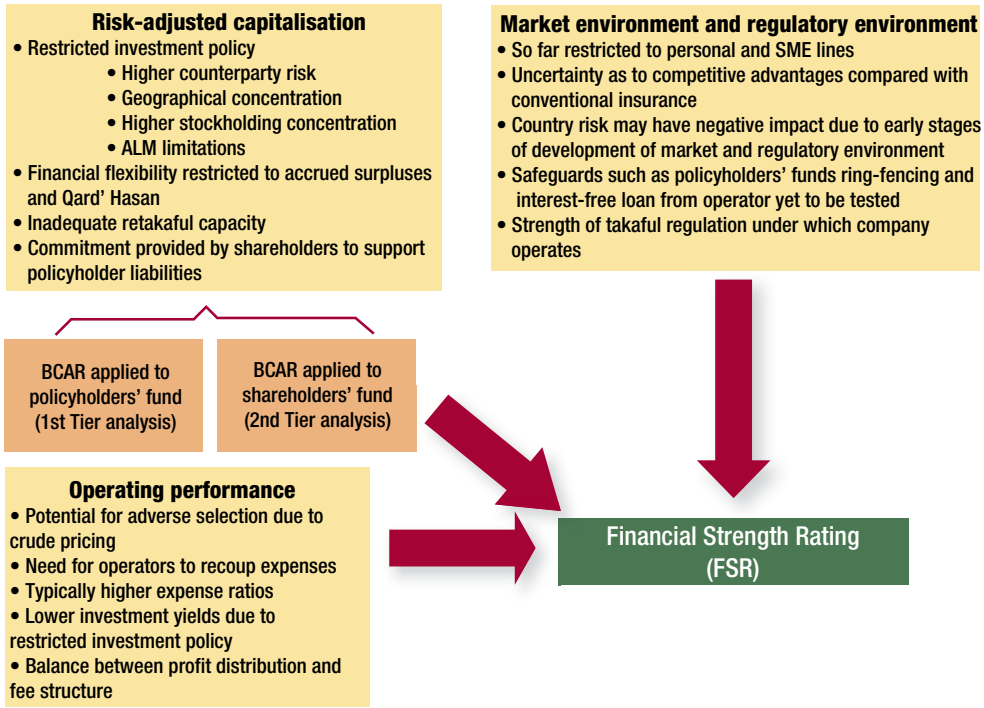
In terms of insurance risk borne by takaful companies, the currently moderate exposures and relative specialisation on domestic and small to medium-sized corporate lines should be expected to keep the capital requirements (as per the BCAR model) modest. These factors, nonetheless, easily can be more than offset by rapid growth of business and excessive concentration in a few product lines, with resulting pressures on capital needs.

An essential feature of all takaful models is participants' sharing of the underwriting surpluses/deficits. Accurately determining the surplus/deficit is, therefore, fundamental to the accounting process. Setting aside a reserve for contingencies always raises the question as to which policyholders own it, i.e. the participants that helped set it up or later generations. This is relevant because the significance of the reserve in the initial years of takaful operations is likely to be substantially greater than in subsequent years. This effectively will result in earlier participants paying to stabilize underwriting results for later participants.

Despite the possible inequity in a pure sense, the building up of a contingency

Exhibit 2

Analysing a Takaful Company



reserve is desirable to enable stability in underwriting results and make it practical to expand the size of the risk pool (as there will be limits to what amounts the takaful operator will be able to provide as Qard' Hasan in case of deficits). A.M. Best considers contingency reserves as part of the capital and surplus of a company when assessing balance sheet strength.

As with conventional insurance operations, an important driving factor in the rating decision for a takaful company is its degree of financial flexibility (i.e. the company's ability to raise equity capital). As with mutual companies, the capital available normally would be expected to reflect significant surpluses accrued over the years within the takaful fund. This component of the analysis is focused mainly on the operator because of the mutual nature of the takaful fund and its inherent lack of financial flexibility. The assessment normally involves a detailed analysis of the ownership structure (and shareholders' solvency) and the record of equity or debt issues. Furthermore, consideration needs to be given for shareholders' capital commitment to the takaful fund.

A.M. Best monitors carefully the quality of the reinsurance program to assess a takaful company's balance sheet protection through reinsurance. This is particularly relevant given the previously mentioned restricted retakaful capacity (and virtual nonexistence of retrotakaful), which may force direct insurers to compromise the security of their insureds.

Operating Performance Issues In a Takaful Company

In principle, any fees paid to the operator on average should be lower than the difference between premiums and claims. In other words, as long as the takaful fund continues to generate surpluses in the long term, there should be no major reason for concern. Having satisfied this condition, at a second level of analysis, A.M. Best believes that to ensure the ongoing existence of the whole insurance operation, it is important as well that the operator at least can cover its expenses from the fees received from the policyholders' fund. For companies to achieve more secure ratings, it is important that the takaful fund generates profits and that there is a suitable balance of profit distribution between shareholders and policyholders, in addition to appropriate management fees to generate surpluses.

During the past few years, takaful companies (particularly in the Middle East) have shown higher expense ratios than their conventional counterparts. The main driver is relatively high management charges and fees to the takaful fund, resulting in low surplus accumulation. However, some companies are adopting prudent fee structures and surplus accumulation to assure a suitable balance of profit distribution and charges is maintained. A.M. Best would expect the current gap to narrow in coming years as takaful business volumes continue to expand rapidly. In addition, A.M. Best expects that over time, the issue of higher expense ratios will be somewhat mitigated by higher customer loyalty and policy persistency driven by the participants' belief in the principles of takaful.

As for investment returns, given takaful companies' constraints in asset management, higher concentration in shares and in a particular geographical region, and increased counterparty credit risk, A.M. Best expects, takaful funds on average to yield lower risk-adjusted returns, experiencing higher volatility and credit defaults. Despite the continuous growth in the supply of Islamic securities, A.M. Best believes the investment opportunities are bound to remain limited for years to come.

Market Environment and Country Risk

Despite the continued impressive growth of the takaful sector overall, rapid growth has not been experienced in all product lines, as the expansion of general or non-life business has outpaced that of the family or life product line. In addition, the typical size of a takaful company remains smaller than that of a conventional insurer. Takaful insurers tend to be smaller, in part due to their relative lack of operating experience (takaful insurers have only been in existence since 1979), and the more limited operating profile of takaful insurers when compared with conventional insurers that have diverse operating platforms and more than a century of operating history.

Going forward, A.M. Best believes the main opportunities and challenges for the sector overall are the development of more robust life insurance platforms, and compulsory lines such as motor third-party liability and health

within the non-life business (in particular countries). A growth area within the corporate product line is medium-sized business risk products within the energy and construction sectors, which continue to expand. In general, retention levels for corporate product lines have been improving gradually, providing a more stable base for growth, although the largest risks still are expected to be ceded to the international markets.

A.M. Best believes it is not yet clear whether takaful companies offer any competitive advantage within this market environment. It is debatable whether there is actually an untapped demand (especially in family/life insurance business) due strictly to religious beliefs – and whether this can be unlocked easily through the offer of takaful products.

A material component of the rating process focuses on the market position of the company – its diversification in terms of client base, business lines and distribution network. In particular for takaful companies based in the Middle East, all these factors are related closely to A.M. Best's country risk assessment. The early stage of development of complementary sectors or activities (e.g. Islamic bonds, bancassurance or Internet distribution and retakaful capacity) often may have a negative impact on the final rating assigned.

Regulatory Environment And Risk Management

Regulation is extremely important in A.M. Best's assessment of takaful companies. The strength of regulation varies significantly among jurisdictions, and the protection to policyholders is somewhat unclear. While regulation of takaful companies has developed and improved in recent years, there remains an inherent lack of transparency in certain jurisdictions, particularly concerning the liabilities on winding up a takaful company. Where regulation is deemed to be weak or unclear, benefit can be given for additional commitments to the takaful fund from shareholders in favor of policyholders, such as ring-fenced assets which will be made explicit in A.M. Best's analysis of a company. Additionally, A.M. Best will consider the role of the Shari'a board within the organization and any potential differences with regulators on winding up a company.

Moreover, in A.M. Best's opinion, some of the regulatory safeguards (e.g., ring-fencing of assets within the takaful fund, interest-free loans from operators in case of solvency difficulties, etc.) are yet to be tested. The development of the Islamic insurance industry, including the regulatory environment, needs to keep pace with the rest of the financial industry in the region (especially banking).

In A.M. Best's view, a robust regulatory regime is crucial for the development of a risk management culture. A.M. Best believes that given their constraints, takaful companies need to develop and demonstrate that they can apply an adequate risk-based approach to investment management (because of the reduced investment opportunities); capital adequacy and reserving (given the need for building up surpluses in the long term, especially for family/life business); and pricing/adverse selection control (given the restrictions on charging extra risk premiums for policyholders representing a greater risk of loss than the aggregate participant pool).

Overall, one of the unique challenges facing takaful companies – and A.M. Best as it endeavours to assess their financial strength – is the need to ensure that the objectives set by their Shari'a boards are consistent with key performance indicators based on conventional sound financial and risk management. That includes establishing processes to address all material risks, despite the challenges presented by the limited capacity of retakaful, and concentration risks presented by restrictive investment guidelines and the limited geographic diversity of the current takaful marketplace.

Rating Takaful Windows And Takaful Subsidiaries

There has been an increasing use of takaful windows and takaful subsidiaries as companies seek to widen their offering and service clients. While contributions from the takaful operations are currently small, volumes are increasing and becoming more prominent within conventional insurers' profiles. In addition to the takaful methodology herein, A.M. Best will also use *Rating Members of Insurance Groups* when rating takaful windows and subsidiaries.

Appendix 1

Sample Takaful Meeting Agenda

Organization Structure and Overview
- Ownership and Participant Requirements
- Overview of Corporate Structure
  - Takaful Model Employed
  - Relationship between Takaful Fund and Operator's Fund (Sharing of Profits)
- Management Structure and Board of Directors
  - Senior Management
  - Board of Directors (if applicable)
  - Shari'a Board
- Assessment of Business Environment
- Key Strategic Objectives and Financial Targets
  - Takaful Fund
  - Operator's Fund

Corporate Governance
- Mission Statement
- Management's Perspectives on Key Risks
- Risk Management Framework
  - Roles and Responsibilities
  - Corporate Oversight
  - Shari'a Compliance
- Board Involvement
- Systems and Internal Controls

Capital Structure
- Composition
  - Takaful Fund
  - Operator's Fund
- Capital Management Strategy
- Capital Adequacy
  - Takaful Fund
  - Operator's Fund
  - Qard' Hasan
- Sources and Uses of Capital
- Cash and Liquidity

Product Development and Underwriting
- Product Offerings
  - General (Non-life)
  - Family (Life and Health)
- Geographic Footprint
- Retention
- Cycle Management Strategy
- Price Monitoring and Controls
- Expansion Initiatives and New Products
- External Risk Factors

Marketing and Business Production
- Competitive Market Position
  - Within Takaful Market
  - Within Broader Insurance Market
- Distribution Sources
- Distribution Productivity
- Production by Line of Business
- Business Strategies
  - By Line of Business
  - Short Term
  - Long Term
- Growth Targets by Line of Business

Claims and Loss Reserves
- Severity and Frequency Trends (General)
- Mortality and Morbidity Trends (Family)
- Claims Administration
- New Potential Claim Emergence
- Loss Reserves
- Management's Perspective on Reserve Adequacy

Reinsurance
- Reinsurance Program Overview
- Reinsurance Providers
  - Retakaful Providers
  - Commercial Providers
- Catastrophic Reinsurance Programs
- Credit Risk Analysis
- Net Retention

Investments
- Balance Sheet Composition
- Investment Strategy and Guidelines
- Performance of Portfolio
  - Gross and Risk-Adjusted Yields
  - Performance versus Benchmarks
- Asset-Liability Management
- Credit Risk
- Concentration Risk
  - By Asset Type and Geographic
  - Availability of Shari'a Compliant Assets
- Capital Markets Risk

Financial Performance
- Profitability by Line of Business
  - Sources of Profits
  - Profit Sharing between Takaful and Operator's Fund
  - Projections
- Operating Expenses – Operator's Fund
  - Trends
  - Expense Management Initiatives
  - Reported Expenses vs. Reimbursement from Takaful Fund
  - Budgets

Catastrophe Management Framework
- Natural and Man-Made Catastrophe Exposure

Analysis
- Catastrophe Models Used
- Probable Maximum Loss and Tail Risk Analysis
- Risk Aggregation and Mapping

Enterprise Risk Management (ERM)*
- ERM Framework
- Risk Correlation
- Modeling Capabilities
- Risk Tolerance and Risk Management Objectives

Other
- Regulatory
- Legislative
- Judicial

* A.M. Best's expectation of a company's ERM capabilities will vary depending on an insurer's scope of operations, size and risk complexity. In some cases, a separate ERM meeting may be required.

Appendix 2

Comparison of Basic Terms

	Takaful and Conventional Insurance
Accounts	Takaful participant contributions are credited into one of two accounts, depending upon the type of takaful firm and any predetermined risk-sharing or profit-sharing arrangements. The two accounts are described below. PA account (managed according to the al-Tabarru principle) – Funds whichthat are ring-fenced to cover policyholders' claims only (i.e. operators or shareholders do not have access to this fund). PSA account (managed according to the al-Mudharabah principle) – Funds in which profit-sharing surpluses (between policyholders and shareholders, normally in fixed proportions) are accumulated. In a conventional insurance model, the paid premium for both general and life products is credited into what is commonly referred to as the general insurance account. For certain life products in which the policyholder maintains ownership and control of the assets, payments often are referred to as deposits and are placed in a segregated or separate account.
Bonus	Takaful contracts specify from the outset how the profits from takaful investments are to be shared between the operator and the participants. This is done in accordance with the principle of al-Mudharabah, and the share split typically is expressed in the form of a ratio as agreed between the participant and the operator – regardless of the amount of investment profit made during the year. Certain types of conventional insurance may offer some form of bonus or profits in general terms related to either investment or underwriting performance. This bonus may take the form of a dividend payment, an increase in insurance coverage or lower premium payments. The conventional carrier can decide to give or not to give a bonus for any particular year, depending on the result of the investment and/or underwriting returns. The rate of bonus itself can vary from year to year and typically is at the discretion of the company's board of directors.
Claims	In a takaful policy, if the participant dies, or the covered risk occurs, the beneficiary(s) may claim the policy value from the PSA, in addition to the accumulated account value from the PA. In the case where the participant survives at the maturity of the policy, or if the covered risk does not occur, his/her claim is confined to the account value available in the PA. In conventional insurance, when the policyholder dies or the covered risk occurs, the beneficiary(s) may claim the whole amount named in the policy (often referred to as the face amount of a life policy), or the prescribed reimbursement for loss as defined in a general insurance policy. When a covered risk does not occur, the insured is not entitled to any reimbursement of premium or investment results in many forms of conventional insurance, such as term life insurance and typical personal general insurance. However, for certain types of investment-related products, the insured shall have the right to claim the policy value at maturity together with the interest, if any.
Damages	In takaful, in compliance with the Islamic principles of mutual cooperation and shared responsibility, there is no justification to award unlimited or unreasonable damages related to any claim or dispute. Under the conventional insurance model, the local court system with jurisdiction in a particular matter (depending on the relevant statutes and laws in the jurisdiction) often is empowered to award unlimited punitive damages against the insurer.
Extra Risk Premiums	In takaful, generally, the contribution or premium rates imposed are fixed by the actuarial evaluation for the entire risk pool. No participant is charged a higher rate, or is discriminated against due to foreseeable extra risk. However, if a particular participant is considered to have an extraordinary risk profile and poses an undue strain on the mutual fund, the participant may have to increase his proportion of Tabarru, i.e. the contribution from his premium to the PSA. In other words, the participant's total contribution remains the same, but the portion that is credited to his/her PA would be less than it generally would have been. In conventional insurance, an extra premium typically is charged in addition to the normal amount against the policyholder where an extra risk is foreseeable. For example, in life insurance, an extra premium may be charged to reflect the higher mortality rates for smokers or people with highly dangerous and strenuous jobs, such as firefighters, miners and so on. Similarly, in non-life insurance, an extra premium may be charged to reflect higher probable losses for a home located in a flood zone.
Guarantees	In takaful, the operator gives no contractual guarantees. The underlying principles of community, solidarity and brotherhood create joint indemnity or risk sharing among the participants. In the conventional model, the insurer guarantees the payment of the benefit or claim within the stipulations of the contract.
Investments	In takaful, the funds must be invested in non-interest bearing assets where investment returns are generated through some form of profit sharing or appreciation. All investments must comply with the guidelines of Shari'a. As such, investment returns must not be driven by any unethical commercial activities that may be in conflict with Islamic beliefs. Under the conventional model, assets typically are invested in a variety of interest-bearing assets, such as fixed-income instruments, as well as in equity-related securities. Each company typically develops a set of investment guidelines considering domestic insurance regulation, the profile of the insurer's liability base and the company's appetite for risk.

Appendix 2

Comparison of Basic Terms *(continued)*

	Takaful and Conventional Insurance
Premium	In takaful, fixed minimum contribution or premium rates are set and are the same for all participants, in deference to Islamic principles and beliefs. Under the conventional model, premiums paid by the policyholder vary based on the risk profile of the individual or corporate entity. For life policies, attained age when the policyholder first takes out a policy is one of the key elements of the pricing decision. The older the policyholder is at the time of contract, the higher the level of premium, reflecting the increased mortality rate as age increases. Similarly, for non-life auto policies, the safety features and relative repair cost of a vehicle are taken into account when determining premium rates.
Profits	In takaful, the proportion or split of any profits typically is prescribed in the contract; however, the amount of profits in total depends on the aggregate investment and underwriting performance for the period. In a conventional insurance policy, there generally is no provision for profit sharing, other than through the dividend or bonus schemes mentioned above.
Term of the Policy	All takaful policies have a fixed and definite term or period of maturity, e.g. 10, 15, 20 years, etc. This is in recognition of the Islamic principle of avoiding uncertainty (Garar). In conventional insurance, the term of a policy varies based on the type of policy. Some life insurance policies have a definite time period, such as temporary and endowment assurance policies, while others may have an indefinite period as long as the policyholder continues to make premium payments. As for general insurance, there typically is a term specified in the contract.

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BCAR for Title Insurance Companies

Introduction to A.M. Best Rating Process

A.M. Best's interactive rating process for title insurance companies is intended to provide an opinion on a company's ability to meet its ongoing obligations to policyholders. The evaluation of a company's financial strength is based on an in-depth analysis of its balance sheet strength, operating performance and business profile. These three components then are compared with A.M. Best's quantitative benchmarks and qualitative standards to assign financial strength (FSR) and issuer credit (ICR) ratings.

While it is only one of the three components of a title insurance company's rating, balance sheet strength represents the foundation of a company's financial strength. A key component of an evaluation of balance sheet strength is a company's Best's Capital

Adequacy Ratio (BCAR), which evaluates and quantifies the adequacy of a company's risk-adjusted capital position. The purpose of this paper is to explain the components of the BCAR; its role in the determination of balance sheet strength; and its impact on the overall rating of a title insurer.

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This publication release updates the version issued April 2, 2014, to include the exhibit of credit risk factors applied to recoverables (pg. 12). Minor corrections were made to the Standard and Stress BCAR Score Calculation (pg. 13) and the footnote in the Loss Scenario Tests (pg. 16). Any references to secure/vulnerable and investment/non-investment grade categories were removed from the BCAR Guidelines Table and Implied Balance Sheet section (pp 5 & 12).

Balance Sheet Strength

In determining a company's ability to meet its current and ongoing obligations to policyholders, the most important area to evaluate is its balance sheet strength, since it is the foundation for policyholder security. The primary objective of an evaluation of balance sheet strength is to determine the exposure of a company's surplus to operating and financial risks.

Measurement and analysis of a title insurer's underwriting, asset and financial leverage are key components to determining its overall balance sheet strength. Even though a highly leveraged company can demonstrate highly favorable rates of return on surplus, it also may be exposed to a greater degree of volatility in its earnings and may be hindered in its ability to withstand financial and market risk events. Companies that are more conservatively leveraged, however, may not show high rates of return on surplus but generally produce earnings that are less volatile and are generally better able to manage risks to surplus.

In measuring leverage ratios for title insurers, A.M. Best recognizes that because of statutory premium reserve requirements as mandated by title insurance regulators in most states, reported surplus may be understated, which results in inflated leverage measures. Ratios therefore are calculated on the basis of both reported surplus and surplus adjusted for statutory premium reserves in excess of incurred but not reported (IBNR) reserves when evaluating underwriting, asset and financial leverage. Leverage ratios on a reported basis tend to be significantly higher than those measured on an adjusted basis.

Underwriting leverage is a measure of the exposure of a company's surplus to its underwriting risks, which includes underpricing of its book of business and underestimation of its loss and loss-adjustment expense reserves. Underwriting leverage is generated from current premium writings, loss reserves and reinsurance recoverables. To assess the appropriateness of a company's underwriting leverage, consideration also is given to its geographic spread of risk and distribution mix (agency versus direct distribution).

Since title insurance is a loss-prevention line of business, title insurers often maintain high premium leverage.

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Asset leverage measures the exposure of a title insurer's surplus to investment, credit and interest-rate risks. These leverage measures take into account the credit quality, market volatility and asset class concentration of a title insurer's investment portfolio and its impact on balance sheet strength.

Financial leverage is created through debt or debt-like instruments and measures what impact the repayment of these securities can have on a title insurer's earnings and future cash flow. Common measures of financial leverage include debt-to-capital and debt-to-equity ratios, as well as coverage ratios, which measure the extent to which a company's earnings and cash flow cover interest payments and other fixed obligations. An analysis of financial leverage also is conducted at the holding-company level, since debt at the holding company can reduce financial flexibility and place greater strain on an operating entity's future earnings and surplus growth.

A company's underwriting and asset leverage also are subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR), which allows for an integrated review of these leverage measures. BCAR calculates the net required capital to support risks associated with the exposure of assets and underwriting to adverse economic and market conditions, and compares it with capital adjusted to reflect an economic basis. A.M. Best also conducts stress tests within the BCAR framework that measure the impact of economic "shock events," such as a sharp rise in mortgage interest rates, on a title insurer's prospective earnings and surplus growth. This integrated stress evaluation permits a more discerning view of a company's balance sheet strength relative to its operating risks.

While a company's BCAR is a useful indicator of its balance sheet strength, it is only one component of that analysis. Moreover, balance sheet strength is only one determinant of a company's overall FSR and ICR, which also depend upon its operating performance and business profile. BCAR is often a guideline to support a rating, but other factors driving expectations of future balance sheet strength influence the rating as well. All of these factors are significant to the overall rating process. Following is a description of the methodology used in the BCAR model.

Overview of BCAR

A.M. Best's capital formula uses a risk-based capital approach whereby net required capital is calculated to support two broad risk categories: underwriting risk and asset risk. A.M. Best's capital adequacy formula also contains an adjustment for covariance, reflecting the statistical independence of the individual components. A company's adjusted surplus is divided by its net required capital, after the covariance adjustment, to determine its BCAR.

Adjusted Surplus

A.M. Best makes a number of adjustments to a company's reported surplus within the Title BCAR model to provide a more economic and comparable basis for evaluating capital adequacy. These adjustments are related largely to the uniqueness of title insurance and its governing statutory regulations. Some of the significant positive adjustments to surplus include credits for statutory premium reserves in excess of IBNR;excess of replacement value over book for title plants (subject to a cap of 20% of surplus);and substantial credit for the non-admitted portion of agents' balances. Additionally,adjustments to surplus are made for economic values embedded in loss and loss-adjustment expense reserves and fixed-income investments.

Significant negative adjustments also are applied to surplus, including economic stress tests that measure the potential impact of "economic shock" events. An example of such an event, as modeled in the stress tests, is a rapid increase in interest rates resulting in a slowdown in real estate activity. This type of event could have a significant impact on the demand for title insurance, and consequently could have a negative impact on future earnings and surplus growth.

Net Required Capital

Underwriting Risk

Underwriting risk is typically the largest risk category, encompassing the risks associated with net premiums written and net loss and loss-adjustment expense reserves. The net premiums written component is forward looking and requires capital based on the pricing risk inherent in a company's expected book of business for the upcoming year. The reserve component requires capital based on the risk inherent in a company's loss and loss-adjustment expense reserves, adjusted for A.M. Best's assessment of its reserve equity. In addition, required capital for the premium and reserve components may be increased to reflect an additional surcharge for "excessive" growth in exposure. Finally, although title insurance is a mono-line business, credit is given for a geographically well-diversified book of business.

Asset Risk

Asset risk includes the following components: fixed-income securities, equities, interest rate, title plant impairment and credit risk. Capital charges are applied to different asset classes based on the risk of default, illiquidity and declines in market value of both equity and fixed-income securities. The BCAR model has incorporated an interest-rate risk component that considers the decline in market value of a company's fixed-income portfolio as a result of rising interest rates. Additionally, higher capital charges are ascribed to affiliated investment holdings; real estate and mortgages; below-investment-grade bonds; and nonaffiliated, privately traded common and preferred shares, because of the relatively illiquid nature of such assets as well as the potential volatility of their reported values.

BCAR Model — Structural Overview

BCAR Ratio = Adjusted Surplus/Net Required Capital

Adjusted Surplus	Net Required Capital
Reported Surplus	Asset Risk—
Plus:	Fixed-Income Securities Risk (B1) Equity-Market and Title Plant Impairment Risk (B2) Interest-Rate Risk (B3) Credit Risk (B4)
Surplus Adjustments—	Plus:
Statutory Premium Reserve Fixed-Income Equity Loss-Reserve Equity Title Plant (Adjustment for Fair Value) Agents' Balances Over 90 days	Underwriting Risk—
Minus:	Loss & LAE Reserve Risk (B5) Premium/Pricing Risk (B6)
Loss Scenario Adjustments—	Plus:
Standard BCAR: 250 BP Stress BCAR: 150 BP (Cumulative 400 BP)	Off-Balance Sheet/Business Risk (B7)
Minus:	Minus:
Other Adjustments (Debt, Intangible Assets)	Covariance Adjustment
Equals:	Equals:
Adjusted Surplus	Net Required Capital (NRC)

$$NRC = \sqrt{(B1)^2+(B2)^2+(.25xB3)^2+(.50xB4)^2+(B5)^2+[(.75xB3)+(.50xB4)+(B6)]^2} + (B7)$$

For those companies that have a material amount of foreign investments in a particular investment category, the risk charge for that asset category may be increased to reflect the increase in volatility and/or decrease in liquidity associated with those foreign markets, financial systems and economies.

With regard to investments in affiliated title agencies,A.M. Best assigns a reduced asset-risk charge to ensure more consistent treatment between those entities that choose this type of organizational structure versus those with a branch structure. Also,A.M. Best assigns a capital charge reflecting the risk of impairment to the calculated fair replacement value of title plants, which are a title insurance company's core operating asset. The excess of replacement value over book also is credited to surplus on a tax-adjusted basis, subject to a cap.

Capital charges are applied to various receivable balances to reflect third-party default risk, including charges for premium receivables from agents and brokers. The title industry's unique business practices, which result in timing differences between when the real estate transaction closes and when premiums are reported, often result in significantly large non-admitted agents' balances reflecting accounts receivable over 90 days. However, these balances typically have shown modest default risk. In recognition of this industry characteristic, the BCAR model gives substantial credit to surplus for the non-admitted portion of premium balances and subjects both the admitted and non-admitted components to the same asset-risk charge. However, any high concentration of non-admitted receivables from any single entity/agent is subject to a higher risk charge. Finally, credit risk factors are applied to recoverables from all reinsurance companies.

Collectively, the underwriting and asset-risk components typically contribute almost all of the company's gross required capital. A third component, known as business risk, typically generates minimal capital requirements for off-balance-sheet items. Off-balance sheet items include items such as non-controlled assets, guarantees for affiliates, contingent liabilities, pension obligations and other post employment/retirement obligations.

Covariance Adjustment

A company's gross required capital, which is the sum of the capital required to support all of its risk components, reflects the amount of capital needed to support all of those risks if they were to develop simultaneously. However, these individual components are subjected to a covariance calculation within the BCAR formula to account for the assumed statistical independence of these components. The application of the covariance adjustment, which produces the company's net required capital, essentially makes the assumption that it is unlikely that all of the individual risk components will occur at the same time. Application of this covariance adjustment generally results in a moderate reduction in a company's gross required capital.

Formula Drivers

A majority of a company's gross capital requirement within A.M. Best's Title capital model is generated from its net premiums written and loss reserve components. Consequently, a company's BCAR value is influenced largely by the capital required to support its net underwriting commitment, which in turn is largely a function of its premium and reserve size; geographic diversification; mix of distribution channels; pace of premium growth; profitability; stability of loss development; and loss-reserve adequacy. The BCAR score of a company will be impacted negatively by higher capital requirements associated with higher underwriting leverage, greater indicated reserve deficiencies, and unstable or unprofitable business.

While the gross capital requirements generated from its investment risk, credit risk and interest-rate risk components are relatively low compared with premium and reserve risk,

a company that maintains a more aggressive investment portfolio with relatively riskier and/or illiquid investments; is heavily dependent on pyramided capital; or has excessive credit risk likely will generate a lower BCAR value.

The basis of risk measurement for some of the key drivers of required capital in the title BCAR model is expected policyholder deficit. A.M. Best adopted the concept of Expected Policyholder Deficit to better calibrate the model's premium and loss-reserve risk factors, as well as other risk factors in the model. The Expected Policyholder Deficit concept allows risk charges to be calibrated to a specific level of insolvency risk and also takes into consideration the expected cost, or severity, of insolvency.

BCAR Guidelines

BCAR	Implied Balance Sheet Strength
175	A++
160	A+
145	A
130	A-
115	B++
100	B+
90	B
80	B-
70	C++
60	C+
50	C
40	C-
<40	D

The Expected Policyholder Deficit concept is reviewed in more detail in A.M. Best's methodology "Understanding BCAR for U.S. Property/Casualty Insurers."

BCAR Is an Absolute Measure

BCAR provides an integrated evaluation of a company's underwriting and asset risk as it compares with the company's level of economic surplus. Within this evaluation,A.M. Best includes many adjustments that recognize company-specific risks to its adjusted surplus. Because of this integrated evaluation of operating risk, BCAR is an important tool in evaluating a company's balance sheet strength.

Implied Balance Sheet

Since BCAR is the ratio of an insurer's own adjusted surplus to its own net required capital, BCAR is an absolute measure. For a company with strong, stable operating performance, a strong business profile, high-quality capital and strong financial flexibility, the chart above provides a reasonable guide for the BCAR levels needed to support A.M. Best's financial strength rating.

Technical Review of the BCAR Formula

Below are summaries of key features and issues related to each of the distinct risk components of required capital, along with a discussion of adjustments made to reported policyholder surplus within the BCAR model. The exhibit titled "Standard and Stress BCAR Score Calculation" illustrates the key aspects of the BCAR calculation for a hypothetical title insurer. It highlights the factors that drive its BCAR results and provides examples of company-specific adjustments.

Adjusted Surplus

A.M. Best makes a number of adjustments to a company's reported surplus within the capital model to provide a more economic and comparable basis for evaluating capital adequacy. These adjustments serve to even the playing field and to compensate for certain economic values not reflected in the statutory financials. They also take into account certain unique features of title insurance. Reported surplus is modified for equity adjustments related to statutory premium reserves, loss reserves, title plants, fixed-income assets on an after-tax basis and non-admitted agents' balances on a pretax basis. Surplus also is adjusted for economic "shock events" such as a sudden increase in mortgage interest rates, which may have a negative impact on real estate prices and activity. Such events have a disproportionate impact on title insurers, whose operating revenue and earnings outlook are heavily influenced by fluctuations in demand for housing caused by volatility in real estate markets and general economic conditions. Events of differing magnitudes are used to arrive at "standard" and "stress" BCAR scores.

Excess Statutory Premium Reserves (SPR).While requirements vary by state, these reserves are mandated by most states to be carried on the balance sheet as a liability and are available for paying claims in addition to known claims reserves (KCR). However, because of state–mandated, formula-based reserving requirements that could be conservative in some instances, these statutory premium reserves may be in excess of net incurred but not reported (IBNR) loss reserves. In such cases,A.M. Best credits a company's reported surplus with the excess of SPR over that of IBNR reserves on an after-tax basis. In those cases where the SPR is below that of the IBNR reserves, the company posts supplemental reserves to bring the SPR up to the level of the net IBNR reserves, thus eliminating the shortfall.

Fixed-Income Assets. Surplus is adjusted to reflect an insurer's fixed-income securities' market value. This allows for a better view of a company's current economic capital position. The pretax benefit of this adjustment is limited to caps of +10% and -15% of surplus, and the result is then tax-effected.

Loss-Reserve Equity. A.M. Best adjusts surplus to reflect the net equity embedded within loss reserves. This equity represents the difference between a company's economic reserves, which reflect A.M. Best's view of ultimate reserves on a discounted basis, and carried reserves. The carried reserves equal the sum of the KCR and IBNR reserves. The adjustment enables A.M. Best to "level the playing field" and better differentiate companies that have historically under-reserved from those that have strong loss-reserve positions.

Title Plants. Title plants represent the core asset required for the ongoing operations of a title company. Due to their treatment in statutory accounting regulations, title plants must be carried on the balance sheet at original or acquired value, while maintenance and improvements cannot be capitalized and must be expensed. This leads to an understatement of the value of long-standing, established title plants. In recognition of the frequent understatement of the value of this asset on title companies' balance sheets, which in turn understates reported surplus,A.M. Best will estimate a current fair replacement value of a company's title plant based on all information made available.

The initial estimate of fair replacement value may be based on the original or acquisition cost and any maintenance/improvements made on the plant over time, adjusted to current dollars using an inflation factor. Any additional information provided, such as an independent, third-party evaluation, may be used in determining a final estimate of the title plant's current fair replacement value. The excess of this replacement value over book may be credited to surplus on a tax-effected basis, subject to a cap of 20% of reported surplus.

Accounts Receivable Over 90 Days. Unique business practices within the title insurance industry often result in significantly large non-admitted agents' balances, reflecting accounts receivable more than 90 days overdue. The over-90-day balance is primarily the result of the significant time lag between when the real estate transaction closes and when the policy is reported to the underwriter. Since the aging is based on policy effective date and not when it is received by the underwriter, the receivable frequently is 90 days past due at the time the policy is reported to the underwriter. However, these balances historically have shown minimal default risk. In recognition of this industry characteristic,A.M. Best's capital model gives significant credit to surplus for the non-admitted portion of premium balances, subject to an evaluation of the agent concentration risk of such receivables.

Debt and Surplus Notes. A.M. Best's capital model emphasizes permanent capital and consequently will reduce a company's reported surplus for encumbered capital, which includes surplus notes and future debt-service requirements of an affiliated holding company.

This reduction, in whole or in part, depends on an insurance group's magnitude of and dependence on debt-like instruments and their associated repayment features.

On a qualitative basis, issues considered include where the debt is held vs. where the cash is used; the existence of other sources of income to offset the cost of debt; fixed-charge coverage; and the overall level of debt relative to the organization's total capital.

For example, when debt is issued at the holding company, but the cash is held at the operating insurance company, even though the cash is given full credit in the BCAR analysis of the operating company, the actual rating of the operating company could be limited by the evaluation of the financial leverage and earnings coverage at the holding company.

Economic Shock Loss and "Standard" BCAR. As title companies' profitability and operating revenues are tied closely to the magnitude and direction of interest rate changes, statistical relationships between these variables are used to measure the impact on a company's balance sheet from a 250 Basis Point (BP) increase in 30-year mortgage interest rates in one year. The impact on earnings then is deducted from current surplus on a tax-effected basis, and the resulting ratio of Adjusted Surplus divided by Net Required Capital is referred to as the "standard" BCAR.

Stress-Test Adjustments and "Stress" BCAR. A.M. Best's use of sensitivity analysis or stress testing within the framework of the BCAR model measures the ability of companies to withstand the impact from an economic "shock event" such as a sharp rise in mortgage interest rates. Therefore,A.M. Best also conducts a stress test of an additional increase of 150 BP in 30-year fixed mortgage interest rates for a cumulative two-year impact of a 400 BP increase. The resulting additional impact on a company's projected earnings in the second year then is deducted from the projected surplus on a tax-effected basis and the resulting ratio is known as a "stress" BCAR.

Depending on a company's ability to manage expenses during real estate down cycles, as well as its financial flexibility in terms of access to capital, the"Stress"BCAR could be as much as 30 points below the individual company's required Standard BCAR that supports its rating.

This multi-period approach is a useful indicator of both the strength of a company's current surplus position to absorb an immediate interest rate "shock event," as well as whether it has the financial resilience to survive a prolonged period of high interest rates. The loss-scenario tests use a statistical model of relationships between changes in interest rates and pretax operating margin to predict the impact on a company's earnings and consequently its surplus position.

(Please refer to the Appendix titled "Loss Scenario Testing and Impact on BCAR" for a more detailed review.)

Treatment of Key Risk Components of Required Capital

I. Underwriting Risk

To develop loss and loss-adjustment expense reserve risk factors,A.M. Best compared the carried calendar-year-end reserve with the projected ultimate development of those reserves for individual companies, using seven year-end evaluation points. The projected deviation from the original reserve provided an indication of the volatility of loss development. Similar calculations were made to measure the volatility in premium adequacy using a measure of operating profit, which was calculated by subtracting company expenses and ultimate losses from premiums plus investment income.

A.M. Best modifies both premium and reserve baseline capital factors based on a company's premium and reserve size. A.M. Best's analysis found greater variation in smaller companies than in larger companies for both premium and reserves. The variation of capital factors by size can represent a significant reduction to the industry baseline reserve risk and premium risk capital factors. This reduction reflects the inherent flexibility and diversification of a larger company to better monitor its reserves and pricing programs.

Loss and Loss-Adjustment Expense Reserve Risk

To a large extent,A.M. Best's loss and loss-adjustment expense reserve risk component emphasizes adjusted reserve leverage and stability in loss development as gauges of a company's exposure to reserving errors in its book of business. Consequently, all other factors being equal, the capital model will generate a greater reserve capital requirement for an insurer that is more leveraged or more volatile, after adjusting for A.M. Best's view of its reserve adequacy, than for its peer companies and vice versa.

Required capital for loss-reserve risk is generated by applying a capital factor to an insurer's adjusted loss reserves. To ensure equitable capital treatment among insurers, A.M. Best's model places considerable weight on a company's adjusted reserves, which emphasizes reserve adequacy and the time value of money imbedded in those reserves. An insurer that historically has under-reserved will be penalized for maintaining lower reported loss reserves. A.M. Best's reserve risk factor is based on an integration of the stability of a company's loss-development pattern, the size of the company's reserves and the inherent risk of title insurance. Consequently, a company's required capital for loss reserve is driven by these key factors:

Reserve Equity Adjustments. A company's carried loss reserves are adjusted to an economic basis that reflects A.M. Best's view of an insurer's ultimate reserves, which are discounted to their present value, recognizing the time value of money. Carried loss reserves represent the sum of the known claims reserves and the IBNR reserves, and they are adjusted to an economic basis through two company modification factors: the reserve deficiency factor and the discount factor.

The reserve deficiency factor reflects A.M. Best's view of an insurer's reserve deficiency expressed as a percentage of its original reserve plus 1. For example, a company with a 10% reserve deficiency would show a 1.10 reserve deficiency factor in the model, whereas a company with a 20% reserve deficiency would show a 1.20 reserve deficiency factor in the model. The initial determination of reserve deficiency is based on using a number of actuarial techniques within A.M. Best's loss-reserve model, including paid development, case-incurred development and expected loss methods. In addition to the reserve model, a diagnostic analysis of Schedule P and a qualitative assessment of the company's operating environment and historical reserve development are used to arrive at A.M. Best's view of reserve deficiency. Generally, unseasoned insurers with insufficient loss experience are compared with industry experience, while the reserves of seasoned insurers are determined relative to their own historical experience.

A number of issues can affect A.M. Best's view of a title insurance company's reserve position, including the number of reserve adjustments; the size of the adjustments; the policy years generating the adverse development; and whether the adjustment was anticipated or unexpected. For companies of concern, a minimum deficiency factor of 10% will be used in the model. A discount factor, based on the payout pattern of the individual company's reserves and a 4% discount rate, is applied to the estimated ultimate loss reserves. The resulting deficiency and discount factors are applied to a company's reported loss and loss-adjustment expense reserves to derive the company's adjusted reserves.

Reserve Capital Factors. Once adjusted reserves have been determined, they can be multiplied by company-specific reserve capital factors to determine a company's reserve

capital requirement. The reserve capital factor is the capital charge associated with the risk of worse-than-anticipated development in a company's expected reserves. The company's reserve capital factor is determined by an industry baseline capital factor modified by the size of the company's reserves and the volatility of a company's case incurred loss development.

The industry baseline capital factor is a function of all individual companies' adverse/ favorable loss-development data from seven prior year-end reserves that have had at least three years of observed development. The data then are used to analyze the potential variation in reserve deficiency for the industry as a whole, which determines the selection of an industry baseline capital factor. Depending on changes in loss-development patterns for the industry, this baseline capital factor may be updated annually.

"Stability factors" are used to differentiate the potential volatility in a specific company's loss reserves. The stability factors are calculated based on the stability of the company's case-incurred loss development pattern and could result in either an increase or a reduction in the baseline capital factor.

A.M. Best views the variation in a company's case-incurred loss development pattern as a strong indicator of the risk inherent in its loss reserves and of the company's ability to accurately project ultimate losses.

To calculate a company's final reserve capital factor, the stability factor is applied to the industry baseline capital factor, adjusted to reflect the size of the company's reserves. The final capital factor then is applied to the company's adjusted loss and loss-adjustment expense reserves to produce the required capital charge.

Growth Charge. A.M. Best also may apply a growth charge that reflects the additional risk that typically comes from rapid growth and is based on the growth in a company's exposures. The growth charge applied to the loss reserve aggregate required capital reflects the substantial risk a company faces in the claims and reserving areas during a time of significant growth. In applying a growth charge, A.M. Best also takes into account the unique nature of the title insurance industry, where the demand for its product is derived largely from changes in real estate market activity that often are subject to a high degree of volatility owing to rapid movements in interest rates and the housing market. A growth charge is applied when a company's growth in exposure exceeds industry thresholds, which vary over the real estate cycle. Therefore,A.M. Best takes into account the current phase of the real estate cycle in evaluating the growth in exposures for an individual company relative to the industry.

Net Premiums Written Risk

The required capital for premiums written within A.M. Best's capital model is generated by applying a premium capital factor to an insurer's written premiums. The premium risk capital factor is the capital charge associated with the risk that a company has underpriced its book of business. The charge is applied prospectively and is modified by the company's premium size and profitability.

To calculate the company premium capital factor,A.M. Best applies a company profitability factor to the industry baseline premium capital factor, adjusted to reflect the size of the company's net written premium. The capital factor then is applied to the company's written premium, net of any applicable reinsurance, to produce the required premium capital charge.

The industry baseline capital factor is developed from 10 years of policy year underwriting profit/loss data for individual companies as a ratio to premium plus other income. Credit is given in the profit/loss calculation to investment income earned on the loss and LAE payout pattern. These data then are used to analyze the potential variation in profitability for the industry as

a whole, which determines the selection of an industry baseline capital factor. Depending on changes in industry profitability, this baseline capital factor may be updated on an annual basis.

The company profitability factor is used to modify the industry baseline capital factor and could result in either an increase or a reduction to the baseline capital factor. The measurement used to judge the profitability of an individual company is a five-year average ultimate policy-year underwriting profit and loss expressed as a ratio to premium plus other income.

A.M. Best believes the profitability of a company's business and the overall industry pricing levels are good indicators of the level of risk margin expected within a company's future business. Those companies with better historical profitability are expected to maintain a greater risk margin in the pricing and underwriting of future business and therefore require a lower premium capital factor.

Two final adjustments are made to the required premium capital charge. These adjustments include a charge to reflect the additional risk that typically comes from growth and the benefit derived from a more diversified book of business.

Growth Charge. This charge reflects the risks a company faces when generating substantial new business. The rapid growth can place increased pressure on its existing infrastructure, resulting in poor underwriting results due to weaker underwriting or poor claims handling. Calculation of the premium growth charge is identical to the calculation of reserve growth charge and is applied directly to the aggregate required capital for premium risk. In the case of both the premium and reserve growth charges, adjustments are made to reflect issues within growth such as substantial historical control of the book of business.

Diversification Credit. For title companies, the diversification factor reflects the reduction in overall premium risk within a geographically well-diversified book of business, ranging from 1.00 (no diversification credit) to 0.70 (full credit).Although a significant share of title insurance premiums nationwide are written in the four large real estate markets of California, New York,Texas and Florida, those title insurance companies that have a more concentrated book of business are more susceptible to changes in regional real estate markets and economic conditions, and therefore face greater premium risk than companies that have a greater spread of risk.

II. Asset Risk

Investment Risk

Nonaffiliated Bonds. A.M. Best looks at the distribution of quality in an insurer's bond portfolio and assigns risk charges for default risk that are modestly higher than those applied by the National Association of Insurance Commissioners, with no capital charged for U.S. government bonds.

Common and Preferred Stocks. A.M. Best continues to apply its historical investment leverage approach, which assumes a 15% reduction in the market value of publicly traded common stocks held. A.M. Best continues to treat preferred stocks consistently with common stocks. However, for companies that have demonstrated their willingness and ability to hold onto preferred stock for the long term, the non-affiliated preferred stock portfolio will be treated in a manner similar to bonds and will receive risk factors based on NAIC designations provided in the annual statement.

Real Estate and Other Investments. Given the greater volatility of real estate investments and their risk of being valued improperly,A.M. Best applies higher risk factors to this asset class. Separate risk charges of 10% and 20% are applied to real estate occupied by the company and real estate held for investment purposes, respectively. In addition, A.M. Best applies a 20% baseline factor to Schedule BA assets, which typically include some speculative, higher-risk assets. These charges are broadly in line with the NAIC's risk factors.

Cash. The 0.3% risk charge applied to cash balances represents the risk that cash deposited in a banking institution may be un-collectible if the bank becomes insolvent. Short-term investments carry a 1% risk charge.

Title Agency Affiliates. A.M. Best recognizes that the affiliated status of such privately held entities, instead of being a branch in the organizational structure of a title insurance company, is largely a matter of form over substance. Therefore, such entities receive a lower investment-risk charge of 15% compared with other private investment affiliates, which will continue to receive a 100% risk charge. However, in the case of companies acquiring such entities, any goodwill resulting from such acquisitions will receive a 100% capital charge.

Title Insurer Affiliates. All investments in affiliated title insurers will be charged 100% to eliminate the stacking of capital, regardless of the investment schedule in which it is recorded (i.e., surplus notes recorded as other investments in Schedule BA, etc.).

Other Non-Insurance Investment Affiliates. A.M. Best charges the full statutory carrying value of the non-insurance affiliate to the parent. Unless a title insurer is actively committed to selling a non-insurer, with proceeds to be reinvested in the title insurance operations,A.M. Best's baseline treatment is a 100% capital charge. In this regard,A.M. Best presumes that the net asset value of the affiliate is needed to support its own operations and is not available to support the title insurance operation.

Title Plants. Title plants represent the core asset to the operation of any title insurance company. However, according to statutory regulations, they are carried on the books at original or acquired value, often resulting in a current fair replacement value in excess of book, especially in the case of long-standing title plants. Accordingly, if additional information is available and verifiable,A.M. Best may calculate a fair replacement value for such title plants and assign a risk charge to the entire value of 10%.The fair replacement value is capped at 20% of surplus.

Intercompany Loans. If an intercompany loan that normally is recorded as a liability is given surplus credit by A.M. Best, then the amount of credit given to the borrower will be removed directly from the surplus and the investments of the lender. The intent is to avoid giving surplus credit in more than one company.

Asset Concentration Adjustment. A.M. Best increases the asset risk charge for single, large investment holdings that are greater than 10% of surplus. This additional capital requirement applies to amounts in excess of the single investment limit, with the baseline charge for that investment type applying to the amount less than 10% of surplus.

Spread-of-Risk Factor Adjustment. A.M. Best's model generates additional required capital to support investment risk relating to the lack of portfolio diversification, utilizing a size factor related to the spread of risk among all major asset classifications. The factor decreases as the size of the invested asset base increases. This factor decreases from 1.5 (invested asset base of $5 million or less) to 1.0 (invested asset base of $500 million or more) and is applied to the total required capital for investment risk. The invested asset base excludes U.S. government bonds, affiliated investments and company-occupied real estate.

High Investment Leverage. Equity-market trends in the past several years have shown that companies with high investment leverage in common stocks generally are subject to greater volatility in their reported surplus. In response, A.M. Best will stress the capital with higher risk charges for those companies with high investment leverage in common stocks. The

current baseline risk charge of 15% will be increased to 20% or 30% when common stocks are greater than 50% or 100% of reported surplus, respectively.

Credit Risk

Accounts Receivable Over 90 Days. As discussed earlier, the title insurance industry's unique business practices and statutory regulations often result in a significant accumulation of non-admitted receivable agents' balances. However, these balances typically have shown modest default risk. Therefore, A.M. Best assigns the same risk charge of 5% to these balances as it does to receivables due less than 90 days, which are admitted under statutory accounting regulations. However, in instances where there is a high concentration of receivables from an entity/agent, the risk charge may be increased. A.M. Best also will give significant credit to surplus for the non-admitted balances.

Other Receivables. Other receivable balances generally are assessed a 5% charge and represent a minor overall capital requirement.

Nonaffiliated Reinsurance. A.M. Best's capital model, which starts with a baseline 10% charge for nonaffiliated reinsurance recoverables, allows the analyst to assign risk charges based on a reinsurer's financial strength rating. This can range from a low of 2.0% for an A++ reinsurer up to a charge of 100% for companies rated C++ or lower. Unrated reinsurers will receive a 100% risk charge as shown in the exhibit titled "Credit Risk Factors Applied to Recoverables."

Credit Risk Factors
Applied to Recoverables*

Best's FSR of Reinsurer	Risk Factor
A++	2%
A+	4%
A	6%
A-	10%
B++	15%
B+	20%
B	30%
B-	40%
C++ and Lower	100%
Not Rated	100%

*Includes reinsurance recoverables on paid loss & LAE, known case loss & LAE reserves, IBNR loss & LAE reserves, and unearned premium.

Affiliated Reinsurance. When analyzing an individual company's balance sheet strength, A.M. Best will charge for reinsurance due from both domestic and foreign affiliates. The charge will be adjusted based upon the financial strength rating of the affiliate using the same procedure that is used on nonaffiliated reinsurers. However, when analyzing a group's balance sheet strength, any intercompany reinsurance will be eliminated from the credit risk analysis.

Interest Rate Risk

Interest rate movements and their impact on real estate activity drive demand for title products and consequently have the greatest impact on a title insurance company's prospective revenue and earnings. However, when the insurer's prospective earnings are insufficient to absorb projected losses and expenses, as well as when an agency defalcation occurs, then that company also has a significant exposure to short-term cash needs and may be exposed to interest rate risk on its investment portfolio. To measure the risk of a decline in the market value of the fixed-income portfolio, A.M. Best uses an increase in interest rates of 250 basis points (BP) over a one-year period. The selection of a potential 250 BP increase in one year was based on a review of historical data over the past 30 years of the volatility and magnitude of actual interest rate increases, and is considered to be a scenario which is likely to result in a loss of earnings and surplus sufficient to force a premature liquidation of fixed-income securities.

The interest rate risk calculation takes into account the company's potential loss to earnings and surplus from the 250 BP interest rate increase. The potential loss represents the exposure of a company's invested asset portfolio to interest rate risk. The required capital for interest rate risk is calculated by taking the ratio of the company's potential loss to its liquid assets and then applying this factor to the company's decline in market value of fixed-income securities following a 250 BP rise in interest rates. However, since the increase of 250 BP is not expected to take place instantaneously, but rather over a period of one year, the company may be able to

Standard and Stress BCAR Score Calculation

Sample Title Company
($ Thousands)

ADJUSTED SURPLUS

	Baseline	35% Tax Rate	Tax-Adjusted Basis
Reported Surplus (Beginning)	$285,000	N/A	$285,000
Plus:			
Surplus Adjustments:			
SPR (excess over IBNR)	40,000	-$14,000	26,000
Fixed-Income Equity	3,000	-1,050	1,950
Loss-Reserve Equity	2,000	-700	1,300
Title Plants (Fair Value Over Book)	5,000	-1,750	3,250
Agents' Balances > 90 days	10,000	N/A	10,000
Total Surplus Adjustments	60,000	-21,000	42,500
Less:			
Loss Scenario Adjustments*:			
Standard BCAR: 250 BP 1-Year Impact to Surplus	-20,625	7,219	-13,406
Stress BCAR: 150 BP (Cumulative 400 BP) 2-Year Impact to Surplus	-94,465	33,063	-61,402
Equals:			
Adjusted Surplus (Standard)			314,094
Adjusted Surplus (Stressed)			266,098

* For a more detailed discussion, please see Appendix: Loss Scenario Testing and Impact on BCAR.

NET REQUIRED CAPITAL

Gross Required Capital

Equals:

Asset Risk	Baseline	Asset Risk Factor	Adjusted Req. Capital
Fixed-Income Securities	$215,000	0.030	$6,450
Equity Securities	95,000	0.150	14,250
Cash/Short-Term Investments	45,000	0.005	225
Title Plant	25,000	0.100	2,500
Credit Risk	30,000	0.050	1,500
Interest-Rate Risk	10,000	0.100	1,000
Total Asset Risk	420,000		25,925

Underwriting Risk	Baseline	Required Capital Factor	Adjusted Req. Capital
Loss and LAE Reserves	95,000	0.330	31,350
Net Premiums Written	1,450,000	0.140	203,000
Total Underwriting Risk	1,545,000		234,350
Off-Balance Sheet/Business Risk	1,000	0.010	10
Gross Required Capital	1,966,000		260,285
Less: Covariance Adjustment			-52,600
Equals: Net Required Capital			207,685

STANDARD BCAR =====>	**151.2**	**($314,094/$207,685)**
STRESS BCAR =====>	**128.1**	**($266,098/$207,685)**

avoid premature liquidation of its fixed-income investments that have a short term to maturity (i.e., less than one year) and thus suffer no potential loss in their market value. Therefore, the required capital is discounted by a factor that takes into account bonds maturing in one year or less, reflecting the lower risk to capital from that portion of the portfolio.

By relating the company's potential loss to all liquid assets first,A.M. Best assumes a company is no more likely to liquidate a fixed-income asset at a loss than it is likely to liquidate any other investment at a loss. A.M. Best has established a minimum 10% potential loss exposure percentage applied against the company's decline in market value following the 250 BP rise in interest rates, recognizing that there may be other reasons for a company to have a short-term cash need, such as an agent's defalcation.

A.M. Best also will conduct additional "stress tests" on a company's balance sheet and earnings. In such stress scenarios, the interest-rate test used is 400 BP over a two-year period. To measure interest rate risk for the purposes of the stress test, a minimum 15% potential loss exposure

percentage is applied against the decline in market value from a 400 BP increase over two years. However, the required capital also is discounted by a slightly larger factor that takes into account bonds maturing in two years or less, reflecting the two-year time horizon over which the 400 BP increase in interest rates takes place.

Conclusion

BCAR is an important tool in the evaluation of capital adequacy. A.M. Best cautions, however, that although the BCAR model for title insurance companies is an important tool in the rating process, it isn't the sole basis of a rating assignment. BCAR, like other quantitative measures, has certain limitations and may not be the definitive measure of financial strength for every company in every situation. Consequently, capital adequacy should be viewed within the overall context of the operating and strategic issues surrounding a title insurance company. Business profile and operating performance are important rating considerations in evaluating a company's long-term financial strength and viability, as well as the quality of the capital that supports the BCAR result. In addition, any holding company considerations also will play a key role in evaluating the financial strength of a title insurance company.

A.M. Best believes that well-managed and highly rated title insurers will continue to focus on the fundamentals of building future economic value and financial stability, rather than on managing the BCAR score, which is just one, albeit important, component of A.M. Best's rating evaluation.

Appendix: Loss Scenario Testing and Impact on BCAR

Title insurance is unique among most insurance lines in that the demand for its product is derived largely from a single industry, i.e., real estate. Since a residential or commercial title policy is either sold or renewed only when a home or business is either purchased or the mortgage on that asset is refinanced, title industry revenues and earnings are largely a function of the level and trend of activity in real estate markets. Real estate market activity, in turn, is partly determined by interest-rate movements. Generally, a rapid rise in mortgage interest rates results in reduced transactions in real estate markets and consequently a decline in demand for title insurance.

The objective of A.M. Best's loss scenario tests for title insurance companies is to measure their ability to withstand the impact of economic "shock" events, such as a significant increase in mortgage interest rates, that negatively impact their capital position. Since a title company's profitability and operating revenue normally are closely tied to the direction of interest-rate changes, the tests use statistical relationships between these variables to measure the impact on individual companies' balance sheets.

The loss scenario tests typically are structured to capture the impact from two successive interest-rate events: a 250 Basis Point (BP) rise in interest rates in the first year, followed by a 150 BP rise in rates in the second year, for a cumulative impact of 400 BP over two years. Although both tests are designed to stress the capital position of an individual company, the 250 BP test is included as part of a "Standard BCAR."The second-year test of an additional increase of 150 BP thus is considered to yield a "Stress BCAR."The choice of using the first- year 250 BP and second-year 150 BP scenarios was based on data of actual interest-rate movements over the past 30 years.

The loss scenario tests use a basic statistical relationship between changes in interest rates and pretax operating income (underwriting results including escrow and other title fees and services) to determine the impact on a company's earnings and surplus. The basic relationship, which was based on statistical modeling and econometric analysis of interest rate and earnings data for the industry, found that for every 100 BP increase in interest rates, the pretax operating margin was reduced by 2.5 points. (Note: for interest rates, the data used was the 30-year fixed mortgage rate,

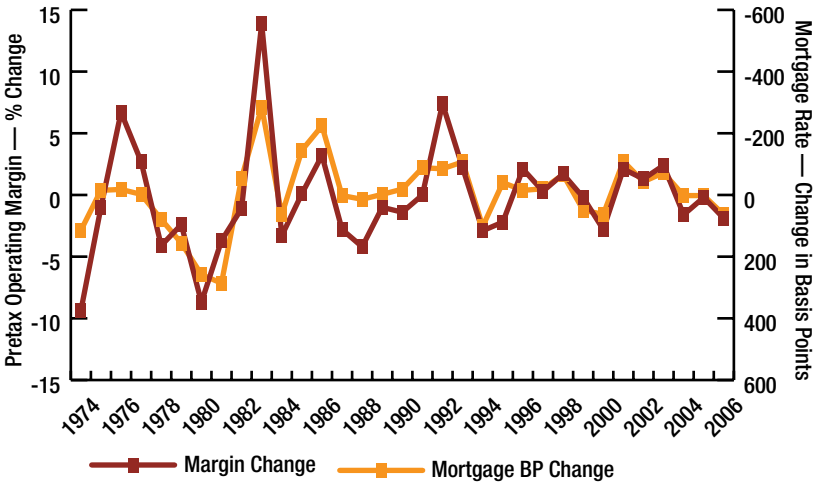
while pretax operating margin is defined as pretax operating income (PTOI) divided by pretax operating revenue).

This basic relationship then is used to calculate the first-year (250 BP increase) and second-year (150 BP increase) impact on a company's pretax operating income and surplus. For example, a 250 BP increase in interest rates represents a reduction in pretax operating margin of 6.25% (250 BP increase = (250/100) × 2.5% change in PTOI = 6.25% reduction in pretax operating margin).

Business Cycle Trends

Pretax Operating Margin vs. Mortgage Rates (Annual Changes)

Note: Scale on Change in Mortgage Rate Inverted to Show Relationship



During periods of strong real estate market activity when title insurance companies are generally profitable, the impact of a 250 BP increase may not result in a loss of surplus, depending on the company's initial margin of profitability (i.e., before the 250 BP impact). However, during downturns in the real estate market when profit margins are weak or negative, the impact of a 250 BP increase in interest rates is likely to be negative, resulting in a loss of surplus. In such cases, any resulting pretax operating loss is deducted from beginning surplus on a tax-effected basis, and this projected lower surplus number at the end of the first year then becomes the starting point for the impact of the second-year, additional 150 BP increase. The resulting impact on earnings from the second-year, 150 BP test then is deducted from the projected surplus on a tax-effected basis. Therefore, the surplus at the end of the two-year period represents the total cumulative impact on a company's capital position of a 400 BP increase over two years.

A.M. Best also recognizes that as interest rates rise, operating revenue tends to decline. Therefore, based on statistical modeling of historical industry revenue and interest-rate data, the model assumes that for every 100 BP increase in interest rates, operating revenue declines by 7%. For example, a 250 BP increase in interest rates represents a reduction in operating revenue of 17.5% (250 BP increase = (250/100) × 7% change in pretax operating revenue = 17.5% reduction).

From a rating perspective, depending on an individual company's access to capital and financial flexibility, along with its ability to manage expenses over the course of a real estate down cycle, the "Stress" BCAR could be as much as 30 points lower than the company's required BCAR needed to maintain its current rating level.

A.M. Best would like to caution that interest rates are only one of a number of economic variables that may impact a title insurer's operating results and future financial strength. Therefore, either the magnitude of the interest-rate increase or the type of economic variable used for the above tests may change in the future, depending on prevailing market circumstances. In addition, the application of the stress test can vary over the real estate cycle. During the down side of the cycle, the stress test may be used as a directional measure of the rating in the form of a rating outlook. Since this test looks out into the future two years, companies have ample time to take corrective actions such as reducing expenses to mitigate operating losses during this difficult period. The rating outlook therefore would be based not only on the stress test, but also on discussions with management to determine what, if any, mitigating actions they are taking and how well they historically have navigated through previous down cycles in the real estate and financial markets.

Loss Scenario Tests: Numerical Example

($ Millions)

Sample Title Company	
Prior Year Operating Revenue	$2,000.0
Prior Year Pretax Operating Income (PTOI)	$100.0
Prior Year Pretax Operating Margin	5.00%

Standard BCAR Test: (250 Basis Point Increase)		
Prior Year-End/Current Year Beginning Surplus	**$285.0**	
Current Year Operating Revenue	$1,650.0	A
Change in Pretax Operating Margin	-6.25%	B
Current Year Pretax Operating Margin (After Impact)	-1.25%	(5.00% 6.25%)
Current Year PTOI (Pretax Margin * CY Op. Rev.)	$(20.6)	(-1.25% * 1,650)
Tax Rate	35%	
Tax-Effected Impact to Current Year Surplus	**$(13.4)**	**(adjust surplus if < 0)**
Current Year-End Surplus Position	**$271.6**	**(285.0-13.4}**

Current Year Operating Revenue	$1,650.0
Current Year Pre-Tax Operating Income	$(20.6)
Current Year Pre-Tax Operating Margin	-1.25%

Stress BCAR Test: (150 BP Increase—Cumulative 400 BP)		
Current Year End/Subsequent Yr. Beginning Surplus	**$271.6**	
Subsequent Year Operating Revenue (impacted by 150 BP)	$1,476.8	C
Change in Pretax Operating Margin	-3.75%	D
Subsequent Year Pretax Operating margin (after impact)	-5.00%	(-1.25% 3.75%)
Subsequent Year PTOI (Pretax Margin * SY Op. Rev.)	$(73.8)	(-5.00% * 1,476.8)
Tax Rate	35%	
Tax-Effected Impact to Subsequent Yr. Surplus	**$(48.0)**	
Subsequent Year-End Surplus Position	**$223.6**	**(271.6-48.0)**
Total 2-year impact to Surplus from Stress Test	**$(61.4)**	**(Adjust surplus if < 0)**

Footnotes:

Modeled Profitability/Interest Rate Relationship reflected above:	Modeled Revenue/Interest Rate Relationship reflected above:
Basic Relationship:	Basic Relationship:
Chg in 100 BP Chg = Chg in Pretax Operating Income of 2.5%	Chg in 100 BP = Chg in Pretax Operating Revenue of 7%
B 250 BP increase = (250/100 = 2.5 × -2.5% = -6.25% decrease in PTOI)	A 250 BP increase = (250/100 = 2.5 × -7% = -17.5% decrease in PTOR)
D 150 BP increase = (150/100 = 1.5 × -2.5% = -3.75% decrease in PTOI)	C 150 BP increase = (150/100 = 1.5 × -7% = -10.5% decrease in PTOR)

Note:
Interest rate data used in model reflect the annual average yield of the 30-year fixed mortgage interest rate as published by the Federal Reserve.

Published by A.M. Best Company

Methodology

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A Best's Financial Strength Rating (FSR) is an independent opinion of an insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. An FSR is not assigned to specific insurance policies or contracts.

A Best's Issuer Credit Rating (ICR) is an independent opinion of an entity's ability to meet its ongoing financial obligations and can be issued on either a long- or short-term basis.

A Best's Issue Rating (IR) is an independent opinion of credit quality assigned to issues that gauges the ability to meet the terms of the obligation and can be issued on a long- or short-term basis (obligations with original maturities generally less than one year).

Rating Disclosure: Use and Limitations

A Best's Credit Rating (BCR) is a forward-looking independent and objective opinion regarding an insurer's, issuer's or financial obligation's relative creditworthiness. The opinion represents a comprehensive analysis consisting of a quantitative and qualitative evaluation of balance sheet strength, operating performance and business profile or, where appropriate, the specific nature and details of a security. Because a BCR is a forward-looking opinion as of the date it is released, it cannot be considered as a fact or guarantee of future credit quality and therefore cannot be described as accurate or inaccurate. A BCR is a relative measure of risk that implies credit quality and is assigned using a scale with a defined population of categories and notches. Entities or obligations assigned the same BCR symbol developed using the same scale, should not be viewed as completely identical in terms of credit quality. Alternatively, they are alike in category (or notches within a category), but given there is a prescribed progression of categories (and notches) used in assigning the ratings of a much larger population of entities or obligations, the categories (notches) cannot mirror the precise subtleties of risk that are inherent within similarly rated entities or obligations. While a BCR reflects the opinion of A.M. Best Company Inc. (AMB) of relative creditworthiness, it is not an indicator or predictor of defined impairment or default probability with respect to any specific insurer, issuer or financial obligation. A BCR is not investment advice, nor should it be construed as a consulting or advisory service, as such; it is not intended to be utilized as a recommendation to purchase, hold or terminate any insurance policy, contract, security or any other financial obligation, nor does it address the suitability of any particular policy or contract for a specific purpose or purchaser. Users of a BCR should not rely on it in making any investment decision; however, if used, the BCR must be considered as only one factor. Users must make their own evaluation of each investment decision. A BCR opinion is provided on an "as is" basis without any expressed or implied warranty. In addition, a BCR may be changed, suspended or withdrawn at any time for any reason at the sole discretion of AMB.

October 23, 2015

Rating Title Insurance Companies

A.M. Best recognizes that while its rating process generally is applicable to the rating of all insurance companies and groups, the evaluation of title insurance companies must take into account the key differences of title from other lines of insurance and the role that title insurance plays in the overall economy, as well as the susceptibility of title underwriting performance to economic volatility and changes in real estate cycles.

The title industry plays a critical role in the U.S. economy by facilitating the growth of the secondary mortgage market, as the process of insuring the proper transfer of real estate from seller to buyer is critical to the real estate transfer process. At any real estate closing, the parties involved must be assured that the title of the subject real property is as represented.

The functions of search and examination of title concerning the legal interest affecting the title to real property compose the title insurance underwriting process. The search-and-examination process very often includes identifying and curing defects to title to indemnify an owner's or lender's financial interest in real property for any covered loss caused by a defect in title that existed as of the effective date of the policy. The title search and examination can require the search of numerous public documents, including tax, court judgment, bankruptcies, deed, encumbrances, etc. Despite increasing automation, this process is often quite labor intensive.

Exhibit 1
Translation of Financial Strength Rating to Credit Market Scale

Financial Strength Rating	Credit Market Scale
A++	aaa aa+
A+	aa aa-
A	a+ a
A-	a-
B++	bbb+ bbb
B+	bbb-
B	bb+ bb
B-	bb-
C++	b+ b
C+	b-
C	ccc+ ccc
C-	ccc- cc
D	c
E, F	

Note: e/E, f/F and d are non-rating designation status. e/E and f/F are used for insurers, while d is used for non-insurers and securites.
Source: A.M. Best Co.

The title insurance industry is highly concentrated, with four national writers accounting for approximately 90% of total industry premium. However, there are regional players that do provide effective competition to the national writers.

While similar to certain property/casualty lines such as surety and boiler and machinery in its loss-prevention characteristics, title insurance involves coverage regarding past transactional events and few future occurrence events associated with all other P/C exposures. In addition, title insurance coverage can be in effect for a long period of time. Lender's coverage terminates on repayment of the loan, and owner's coverage lasts as long as the insured owns an interest in the property.

While comparisons on an operating ratio basis yield similar results for both title and P/C companies, there are important differences for combined ratio and investment ratio, which are the major components of the operating ratio. Since title insurance usually involves the acceptance of prior transaction-related risk, the underwriting process in the title insurance industry differs markedly from the typical property/casualty underwriting process. The title underwriting process is based on loss prevention designed to limit risk exposure through

Additional Information

Criteria:
Risk Management and the Rating Process For Insurance Companies

Rating Members of Insurance Groups

BCAR for Title Insurance Companies

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SR-2012-M-013

This publication release updates the version issued March 2, 2012 to reflect observed industry loss & LAE ratios (pg. 2) and observed industry premium-to-surplus ratios (pg. 3). The Supplemental Rating Questionnaire was added to the list of requested information in Exhibit 4 (pg. 3). Any references to secure/vulnerable and investment/non-investment grade categories were removed (pp 1 & 4). Additionally, Exhibit 1 was updated to reflect the current translation table of rating scales.

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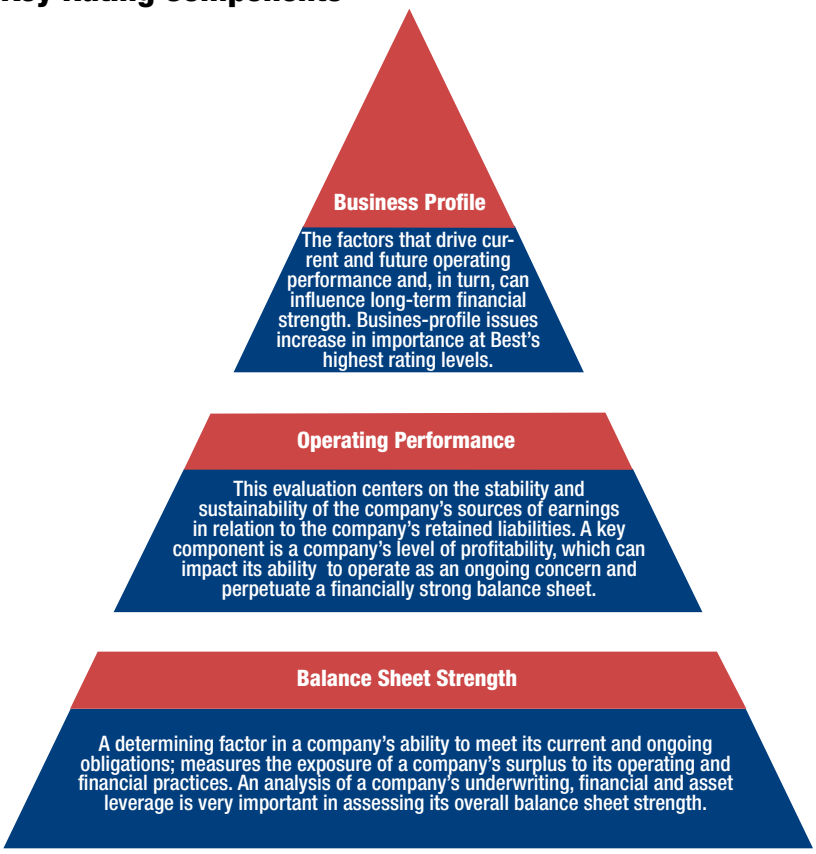
a thorough search of the recorded documents affecting a particular property. Property/ casualty underwriters are concerned with determining the probability of loss based on the characteristics of the insured, while title underwriters are concerned with reducing the possibility of loss by discovering as much information as possible about the past through extensive searches of public records and stringent examinations of title. This results in typical loss and loss-adjustment expense ratios of 4% to 13% for title insurers, compared with the 65% to 85% typical of the P/C industry.

The title industry is characterized by high fixed costs, with typical total underwriting expense ratios of 85% to 95%, unlike the P/C industry, where expense ratios are comparatively lower, ranging typically from 20 % to 30%. This is because title insurers must physically produce policies, which is labor and system intensive. A typical property/ casualty policy might involve filling out some basic information, while the title policy might require the transcription of a complex legal description unique to the insured property, along with enmeration of often equally complex and unique terms of easements or other special property rights. In property and casualty lines, agents' commissions are generally in the range of approximately 5% to 25% of premium on policies that agents write. In title insurance, the agent retains a much larger proportion, generally 70% to 90% of the amount charged, depending on the state, which is more properly described as agent's retention or agent's labor or work charges. Agents' activities not only reflect a sales commission but also incorporate underwriting, loss prevention and administration costs that title insurers would incur if policies were issued directly. These unique characteristics of the title insurance industry, combined with the necessity of maintaining indexed databases (i.e., title plant) or searching public records, contribute to the high fixed costs. The general underwriting examination and search requirements, coupled with the disarray and geographical dispersion of records, has fostered the development of privately owned title plants. These title plants must be maintained regardless of the level of real estate activity during any given period. The cost to maintain the economic life of a title plant and continuously update the records is moderately high. This is one factor adding to the higher overall fixed-cost percentage for title insurers as compared with property/casualty insurers.

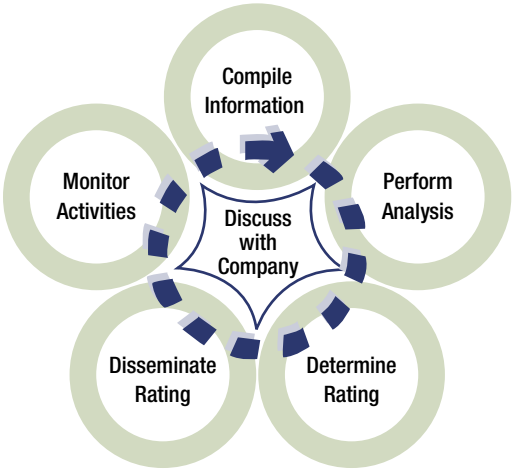
Exhibit 2
Key Rating Components



Title insurers also typically generate far lower investment income from underwriting as compared with property/casualty companies because of the large, up-front commission payment to title agencies. These payments result in a smaller retained portion of the original premium available to title insurers for investments. The typical title insurer has an investment income ratio (investment income as a

percentage of net written premium) of 3% to 6%, compared with 8% to 15% for a P/C company. Thus, while individual components of the operating ratio differ significantly when comparing title with P/C companies, the 10-year average operating ratios are similar at approximately 90% to 95%.

Exhibit 3
The Interactive Rating Process



The title industry generally operates on a much higher premium-to surplus ratio than does the average P/C insurer. This is due to title insurance being a loss-prevention line of business characterized by high fixed costs and typically low loss ratios. Therefore, surplus required to protect against unexpected events is typically lower. This differs significantly from the experience of property/casualty companies, which require a relatively larger surplus cushion to protect property underwriters from catastrophes or casualty underwriters from adverse loss-reserve development. Reported net-premium-to-surplus ratios typically range from 3-1 to 5-1 for the title insurance industry, compared with 2-1 or significantly less for the P/C industry.

Title insurers carry a statutory liability known as the statutory premium reserve (SPR), which is mandated by each state to be kept aside to provide ultimate loss protection to policyholders. This is in addition to the Known Claims Reserve (KCR). Rules for maintaining the level and length of time of these reserves vary by state. To compare companies domiciled in different states, the excess of the SPR over incurred but not reported (IBNR) reserves on a tax-effected basis is treated as an adjustment to surplus when calculating a title company's overall capitalization and its leverage and return on-surplus ratios. The excess of the change in SPR over change in IBNR is treated as an adjustment to earnings when calculating the loss ratio as well as return on revenue.

Another factor that makes comparing ratios difficult between title companies is the different methods each state uses in accounting for title premium and agent fees. Some states use the Risk Rate (RR) method, which allows agents to deduct search-and-exam fees up front. Other states use the All-Inclusive (AI) method, whereby the insurer includes the search and exam costs it pays to the agent. The typical commission that the insurer pays to agents in "RR" states therefore is significantly lower than that of the "AI" states. This implies that those companies that primarily do business in "RR" states are likely to have significantly lower expense ratios than companies operating in "AI" states, thereby making combined ratios (termed "composite" ratio in title insurance terminology) difficult to compare between companies that primarily do business in different jurisdictions. Therefore, A.M. Best places greater emphasis on comparing results among title companies by using the return on surplus measure.

Exhibit 4
Typical Rating Information Requested

1. Annual financial reports – latest five years preferably or credible projections for a less-experienced or start-up company
2. Audited financial statements for parent and subsidiary companies, if applicable
3. Actuarial reports, both internal and external
4. Corporate structure and history
5. Management structure and key executive committees
6. Biographical information on principal officers
7. Operating and business plans
8. Capital management strategies
9. Any other information management believes is relevant to the rating process
10. Any other reasonable information requested by A.M. Best, including but not limited to:
    (a) Estimated impact (net and gross) from economic or other unusual events
    (b) Details of changes in ownership, management, products or operations
    (c) Projection of year-end results
    (d) Plans to mitigate losses and/or to correct an identified problem
11. Pro forma projections for title insurer and parent, if applicable
12. History of losses and premiums
13. Organizational structure for parent organization and subsidiaries
14. Additional data as needed including responses to A.M. Best's Supplemental Rating Questionnaire.

The title industry is more susceptible to changes in the real estate cycle than is the P/C industry. As real estate closings generate title orders, the title

industry is far more dependent on changes in real estate market conditions, and therefore, title premiums and profitability are far more sensitive to changes in interest rates and availability of mortgage credit than they are in the P/C industry. The economy's disproportionate impact on title insurance, which is synchronized with the business cycle rather than the underwriting cycle that characterizes the P/C industry, is a major factor in the evaluation of title insurance companies and their ability to withstand downturns in the economy and the real estate market. Since relative to P/C lines, a significant portion of the cost structure is fixed , sudden declines in revenue can have a disproportionate negative impact on profitability. Companies that have more flexible operating cost structures, as evidenced by balanced management of the distribution mix (agency versus direct), are in a better position to respond to rapidly changing economic conditions.

Title insurance companies are also subject to agency defalcation risk, especially during economic downturns. Defalcation occurs when agents illegally divert fiduciary escrow funds without authority. Defalcation losses are similar to catastrophe losses experienced by property/casualty insurers. Agent defalcation claims are the only shock-loss type of claim that has concentrated geographic reach, depending upon the region in which the defrauding agent operates.

Although A.M. Best's approach to the evaluation of a title insurer's financial strength and creditworthiness is similar to its approach toward other insurance entities, A.M. Best also recognizes within its evaluation certain unique aspects of title insurance that distinguish it from other forms of insurance.

Balance Sheet Strength

Balance sheet strength forms the base of the ratings "pyramid," as all companies rated B+ or higher must demonstrate adequate capitalization, which represents the foundation of a company's financial strength and flexibility. There are several criteria for measuring balance sheet strength, and while many of these criteria apply to all insurance entities, certain features unique to title insurers need to be incorporated in their evaluation for a more accurate analysis.

Leverage Tests and Capitalization

Measurement and analysis of a title insurer's underwriting, asset and financial leverage are key components in determining its capital adequacy. The primary objective of an evaluation of balance sheet strength is to determine the exposure of a company's surplus to operating and financial risks. While a highly leveraged company can demonstrate strongly favorable rates of return on surplus, it also may be exposed to a greater degree of volatility in its earnings and may be hindered in its ability to withstand financial and market risk events. Companies that are more conservatively leveraged, however, may not show high rates of return on surplus, but they generally produce earnings that are less volatile and are generally better able to manage risks to surplus. Because title insurance is a loss-prevention line of business that results in lower loss ratios and a resulting low level of required loss reserves, title insurers can and often do have significantly higher premium leverage than their P/C counterparts. However, in measuring leverage ratios for title insurers, A.M. Best recognizes that because of statutory premium reserve requirements as mandated by title insurance regulators in most states, reported surplus may be understated, which would result in inflated leverage measures.

Ratios therefore are calculated both on a reported surplus basis and on surplus adjusted for excess statutory premium reserves when evaluating underwriting, asset and financial leverage. Leverage ratios on a reported basis tend to be higher than those measured on an adjusted basis. Underwriting leverage includes premium writings to surplus, which is a measure of the exposure of a company's capital to risk of underpricing its book of business. Other measures of underwriting leverage include net liabilities to surplus, which measures exposure of unpaid obligations to surplus, and premiums and reserves ceded and related reinsurance recoverables to surplus, which measure

reinsurance dependence. Since title insurance companies do not normally rely on traditional reinsurance, the latter measure is usually negligible. To assess the appropriateness of a company's underwriting leverage, consideration also is given to its geographic spread of risk; type of title insurance business written (residential versus commercial); origin of business written (purchase versus refinancing); and distribution mix (agency versus direct).

A.M. Best also evaluates asset leverage, which measures the exposure of a title insurer's surplus to investment, credit and interest rate risks. These leverage measures take into account the credit quality, market volatility and asset-class concentration of a title insurer's investment portfolio and its impact on balance sheet strength. The quality and diversification of a company's asset base may also impact the amount of underwriting risk a company may assume for a given rating level.

A company's underwriting, financial and asset leverage also are subjected to an evaluation by the Best's Capital Adequacy Ratio (BCAR) model , which allows for an integrated review of these leverage measures (see BCAR for Title Insurance Companies).

A.M. Best also reviews a company's financial leverage, which measures to what extent debt or debt-like instruments may place a burden on a title insurer's earnings and consequently impact its cash flow. Common measures of financial leverage include debt-to-capital and debt-to-equity ratios, as well as coverage ratios, which measure the extent to which a company's earnings and cash flow cover interest payments and other fixed obligations. However, in determining whether a company's financial leverage is excessive, consideration also is given to management's history in managing debt. In cases where a title insurer has a parent, the analysis is conducted at the holding-company level. Holding companies and their associated capital structures can have a significant impact on a subsidiary company's financial strength. While holding-company structures can provide greater financial flexibility and access to capital to a title insurance subsidiary, excessive debt or debt-like obligations at the holding company level also can reduce financial flexibility and place greater strain on future growth in earnings and surplus of the operating subsidiary. A holding company may have obligations comprising debt, preferred stock or hybrid securities in its capital structure. Therefore, A.M. Best places great emphasis on evaluating the quality of capital of both the operating company and its parent, reviewing both the debt and equity components of individual securities in determining overall financial leverage.

Adequacy of Loss Reserves

Although title insurers have relatively low levels of case loss reserves called Known Claim Reserves (KCR), they also carry statutory premium reserves (SPR) as liabilities on their balance sheet. The comparison of SPR and KCR reserves to estimated IBNR and KCR determines whether a title insurer is reserved adequately. If SPR and KCR is less than the combined IBNR and KCR, then a supplemental reserve must be posted to make up the difference. However, if the SPR and KCR is greater than the IBNR and KCR, then the resulting "excess reserves" on a tax-effected basis are included as a component of surplus in A.M. Best's evaluation of a title insurer's overall capitalization.

Quality and Diversification of Assets

The quality and diversification of a title insurer's invested assets is an important indicator of its balance sheet strength and overall financial stability. The quality of assets is evaluated to assess the risk of default and premature liquidation. Greater diversification also contributes to greater stability of investment income and lessens the impact of a default on the balance sheet. A.M. Best reviews a title insurer's investment portfolio for any concentration of asset classes, geographic and industry spread of risk, and the presence of any large single investment that exceeds 10% of a company's total capital. Title insurers that hold illiquid , concentrated and / or speculative assets may experience high volatility in investment earnings from sudden changes in economic and market conditions, which could pose greater risks to policyholders' surplus.

Liquidity

A title insurer's liquidity impacts its ability to meet its short and long-term obligations to policyholders and other creditors. The holding of liquid, high-quality investments and solid operating cash flow provides a high degree of liquidity, enabling a title insurer to meet unanticipated needs for cash without the untimely sale of investments and fixed assets that could result in significant realized losses under adverse market conditions. A.M. Best evaluates several liquidity measures, including quick liquidity, which measures a company's ability to meet short-term liquidity needs with cash or assets readily convertible to cash, and current liquidity, which measures a company's ability to meet its long-term liquidity needs with cash and unaffiliated invested assets. A.M. Best also reviews a company's operating and net cash flows as an indicator of its ability to meet liquidity needs, provided that they are positive, stable and large relative to cash requirements.

Operating Performance

Operating performance represents the second tier of the ratings "pyramid." As companies move up the ratings scale, this measure of financial strength takes on greater importance. To reinforce and enhance its balance sheet strength, a title insurer should demonstrate profitable statutory operating earnings over time. A.M. Best reviews the components of a company's statutory earnings over the most recent five-year period to assess the sources of growth in earnings and how profitability measures are trending. In the case of title insurance, where companies face high fixed costs and highly volatile revenues, profitability is correlated with the ability of a company to manage its variable expenses over the course of the business cycle. Generally, title insurers that have flexible cost structures and can anticipate and adapt to sudden changes in real estate markets, including changes in credit market conditions and rapid interest-rate movements, tend to demonstrate greater consistency in generating profitable operating earnings.

Profitability

A.M. Best reviews several areas of profitability, including underwriting, investments, capital gains and losses, and total operating earnings, on both a pretax and an after-tax basis. Similar to the adjustment made to reported surplus for any excess statutory premium reserves and KCR over IBNR and KCR, reported earnings also are adjusted for any potential "earnings credit" by calculating the difference between the change in SPR and the change in net IBNR. This credit then is applied to premium and operating earnings when calculating the combined ratio (called composite ratio in the title industry, which also includes escrow and other fee income) and rates of return on operating revenue and surplus on an adjusted basis. A.M. Best also recognizes that there may be differences in composite ratios and return on revenue between title insurance companies, depending on their geographic mix of business. This is because some states, called "Risk Rate" states, exclude certain premiums and their associated expenses such as title agent fees and services as part of underwriting expenses. Other states, known as "All-Inclusive" states, require all fees and services to be accounted for when calculating underwriting income or loss. Since these fees often can be a large portion of a title company's underwriting expenses and premium base, they potentially can make comparisons of composite ratios and return on revenue difficult between companies that primarily operate in states with starkly different regulatory regimes. For this reason, A.M. Best places a greater emphasis on return-on-surplus measures when comparing operating performance across the industry.

Business Profile

Business profile represents the top tier of the "ratings pyramid" and is an important qualitative component of the overall rating evaluation. Along with solid capitalization and consistent, profitable operating performance, highly rated companies must demonstrate a strong business profile that reflects the title insurer's competitive market position, the degree of risk inherent in the company's book of business, and the quality and stability of its management, which can have a significant impact on its ability to manage enterprise-wide risks as well as sustain and enhance its market position.

Geographic and Product Segment Spread of Risk

Title insurance is a mono-line business that derives its income from the residential and commercial real estate industry. It is also subject to highly volatile revenue and earnings, as the demand for its product depends greatly on changes in the economic environment, real estate market cycles, sudden interest-rate movements and changes in credit market conditions. As such , it is critical for title insurance companies to achieve greater spread of risk geographically to mitigate their product and industry concentrations. Generally, larger companies with a nationwide book of business have a natural spread of risk. However, smaller companies that have a long-standing presence in certain markets and efficient distribution channels may be able to compensate for their more concentrated books of business. Although approximately 40% of total title insurance premiums are written in four states (California, Texas, Florida and New York), this concentration has decreased somewhat in recent years. While most title insurance companies are predominantly writers of residential title policies, the commercial title market represents an important source of revenue because of the high value of premiums and typically higher profit margins associated with these policies. The commercial segment also requires title insurers to have greater underwriting sophistication in writing these large policies. Title insurers that have an established presence in the commercial market segment characterized by a long history of commercial underwriting may be at a greater advantage than companies that are new to this market segment. A.M. Best takes into consideration a title insurer's geographic and product-segment spread of risk, as well as a company's operating history and market presence, to assess the quality of the company's overall spread of risk.

Competitive Market Position

As stated above, a title insurer's historical presence in markets where it operates may give it a competitive advantage over its peers. However, given that the title insurance industry is subject to high levels of fixed costs and volatile earnings, the ability of a company to respond quickly to such challenges ultimately will determine the sustain-ability of its competitive advantage. The ability to manage costs and use distribution channels efficiently is critical for a title insurer in maintaining a competitive advantage over its peers. Because title agents retain a significant portion of title insurance charges (i.e., premiums and fees), companies may benefit from a predominantly agency distribution mix during real estate down cycles; this cost structure automatically reduces expenses as revenue falls. Conversely, when real estate markets are on an upswing, resulting in stronger demand for title insurance, companies that write mostly direct business with relatively fixed labor costs may benefit more in an environment of rapid growth in revenue. Thus, companies with a flexible cost structure that can adapt quickly to changes in the real estate cycle can afford a greater degree of control over variable costs through the use of multiple distribution channels. Similarly, effective utilization and leveraging of technology, superior service, underwriting expertise, careful monitoring of agents' business practices, financial flexibility and access to capital will allow companies to be in a better position to both weather down cycles and take advantage of market upturns, and therefore to sustain and enhance their competitive market positions.

Regulatory, Market and Event Risk

Title insurance companies, as all other insurance lines of business, are subject to state regulation where title insurance premium and underwriter retention rates are mandated by the state and they are subject to revision, given changes in the regulatory environment. While these systemic risks are common to all market participants, title insurers also face a high degree of market risk due to the nature of the demand for their product, which is derived from the real estate and financial markets. Any adverse developments in these markets, such as changes or reforms in the financial services industry; changes in tax laws that negatively impact the mortgage and real estate industries; a sudden downturn in property prices; or a reduction in demand owing to recessionary business and economic

cycles, a sharp increase in mortgage interest rates or a sudden tightening in the availability of mortgage credit are likely to have a greater negative impact on title insurers whose business profile does not afford them a favorable spread of risk and a competitive market position.

Management Quality

The experience and depth of management represents a critical component in the evaluation of a company's overall business profile. Since the insurance business is based on a model of fiduciary responsibility, prudent guidance of management generally plays a more vital role than in other industries. Because of the high degree of competitive pressure in the title insurance marketplace, the ability of management to develop and execute a coherent, sustainable and competitive operating strategy is vital to a company's long-term financial success. A.M. Best's assessment of management's active monitoring and mitigation of enterprise-wide risks and a clear understanding of management's operating goals is inherent in the qualitative evaluation of a company's prospective operating performance and its ability to sustain and enhance balance sheet strength. A.M. Best places great emphasis on ongoing communication and periodic meetings between its analytical team and company management. These interactions provide A.M. Best with crucial insight into the organization's operating mission and whether and how management policies are designed to implement that mission on an ongoing basis.

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February 7, 2011

Rating Lloyd's Syndicates

A.M. Best's rating criteria for Lloyd's syndicates address factors specific to individual syndicates and not already covered by A.M. Best's well-established insurance rating methodology. Syndicate ratings are assigned through the application of A.M. Best's interactive rating process. They should be regarded as a complementary analytical service to A.M. Best's rating on the overall Lloyd's market and should be considered only in this context.

Financial strength ratings provide A.M. Best's view as to the ability of a rated organisation to meet policyholder obligations. The market rating is the "floor" of security for all policies written at Lloyd's. The existence of the market rating reflects the "chain of security" and, in particular, the role of the Central Fund, which partially mutualises capital at a market level. This ensures that each syndicate is backed by capital consistent with a financial strength rating of at least that of the Lloyd's market. A policyholder exposed to a syndicate with a financial strength profile weaker than the market would still have market-level security, given the Central Fund's role as a guarantee fund. However, A.M. Best believes that the specific characteristics of some syndicates could be consistent with a financial strength rating at or above the level of the market rating and that this is a valuable perspective for policyholders, brokers and others with a vital interest in security at Lloyd's.

The relationship between the Lloyd's market rating and the syndicate ratings is demonstrated by the fact that an amendment to the market rating would automatically trigger a review of all syndicate ratings, as these cannot be viewed in isolation from the market as a whole. However, this would not necessarily mean that any given rating would change. That would depend on the basis for the change in the Lloyd's rating and the syndicate-specific characteristics that support the syndicate's rating.

A specialised analytical team assesses each syndicate according to A.M. Best's traditional key ratings factors – capital strength, operating performance and business profile – after which A.M. Best is in a position to assign a rating. An "s" modifier, e.g. A+ s, differentiates ratings on individual syndicates from the overall market's rating.

Key Rating Factors

Capital Strength

A.M. Best evaluates a syndicate's financial strength and flexibility by looking at leverage, capital structure, reinsurance, asset quality, reserves and liquidity. However, most of the standard measures of balance sheet strength can only be analysed at the whole market level, the syndicate's balance sheet information being of limited use for measuring capital strength. This is because the capital backing a syndicate is held at the member level, in the form of funds at Lloyd's (FAL), and is fungible across all of a member's syndicate participations. There is therefore no capital shown in the syndicate's balance sheet; moreover, syndicates do not retain profits and there is no policyholders' surplus. Consequently, Best's Capital Adequacy Ratio (BCAR model) cannot be used. Capital adequacy is addressed largely through assessment of the application at Lloyd's of the Individual Capital Adequacy Standards (ICAS) methodology, required by the U.K. regulator, the Prudential Regulation Authority (PRA). This forms a key part of A.M. Best's analysis for the Lloyd's rating. Lloyd's as a whole and individual syndicates are required to produce an Individual Capital Assessment (ICA). Additionally, A.M. Best uses some syndicate-specific indicators and ratios, insofar as they affect operating resilience.

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a) Leverage: Standard indicators of operating, financial and asset leverage are considered at the Lloyd's market level. In addition, A.M. Best assesses characteristics pertaining to the syndicate itself, including the extent of reliance on reinsurance and associated credit exposure; the size of technical reserves – particularly the reinsurance to close ("RITC") – relative to capacity and premiums; and the degree of asset risk attaching to the syndicate's premiums trust fund investments. The following are the main ratios employed in A.M. Best's assessment of leverage at the syndicate level:

- Gross Premiums Written/Capacity
- Net Premiums Written/Capacity
- Net Premiums Written/Gross Premiums Written
- RITC Brought Forward/Capacity
- RITC Brought Forward/Net Premiums Written
- Gross RITC/Net RITC

b) Capital Structure: A syndicate's capital structure influences financial strength when the syndicate is backed largely or entirely by "integrated" capital through an integrated Lloyd's vehicle ("ILV") – i.e. where the same group owns the managing agency and the capital backing the syndicate. ILVs can provide their syndicates with financial flexibility, including capital infusions and, in some cases, additional sources of cash flow from other operations. A.M. Best therefore reviews the ILV's capital structure to determine whether the finances are sound and unencumbered. For example, the existence of debt and other financial instruments could reduce the quality of an ILV's capital structure and might place a drag on its ability to provide future capital to a syndicate. In addition, A.M. Best reviews any non-insurance operations of the holding company for their potential impact on the financial condition of insurance operations.

c) Reinsurance: A.M. Best analyses the quality and appropriateness of a syndicate's reinsurance programme insofar as it affects prospective operating performance and how that, in turn, could affect the ability to retain and attract capital. Each syndicate's gross and net Realistic Disaster Scenarios are also reviewed, partly to assess the efficacy of reinsurance purchased. The ICA requirement applied to syndicates will reflect to some extent Lloyd's view as to the quality of reinsurance, because review of syndicate ICAs is delegated to Lloyd's by the PRA. Beyond this, consideration of a syndicate's reinsurance programme in the context of current capital strength may have shortcomings, since the capital backing the syndicate (FAL) is held at the member level.

d) Reserves: This element in A.M. Best's assessment of individual syndicates is considered largely in relation to prospective operating performance rather than capital strength. Again, this reflects the fungibility of capital held at the member level.

e) Asset Quality: A.M. Best's analysis of asset quality is derived mainly from the overall market rating, taking into account all the assets held as FAL. Assets held in the premiums trust funds are held at syndicate level and are analysed to determine how they affect a syndicate's liquidity.

f) Liquidity: The limitations inherent in syndicates' balance sheets mean that the standard indicators of liquidity are not strictly applicable. Therefore, A.M. Best focuses on a syndicate's operating cash flows and any other contingent funding facilities in place to cover deficits.

Operating Performance

In addition to the impact of reinsurance and reserve quality mentioned above, A.M. Best measures the operating performance of a syndicate by evaluating the following three areas:

profitability, revenue and quality of management.

a) Profitability: With the introduction of annual accounting, A.M. Best largely analyses syndicates' profitability using similar ratios against gross and net premiums written to those used with an insurance company, as follows:

- Gross Loss Ratio
- Net Loss Ratio
- Expense Ratio
- Combined Ratio
- Net Investment Income/NPW
- Result after Personal Expenses/NPW
- Pure Year Underwriting Result/NPW

A.M. Best also analyses syndicates' profitability by measuring traditional indicators against capacity.

b) Revenue Composition: A.M. Best applies its standard analysis of revenues.

c) Management Experience and Objectives: As with any company, management is a critical factor in a syndicate's long-term financial strength. A.M. Best considers the management team's experience and background, together with the key managerial and operational procedures employed. In particular, A.M. Best considers the management team's approach to risk management and control, as A.M. Best believes that enterprise risk management – establishing a risk-aware culture and using sophisticated tools to identify and measure risk and risk correlations – is an increasingly important component of that framework.

Business Profile

The business profile of a Lloyd's syndicate represents the amalgamation of all core activities in which a syndicate is engaged. In the context of Lloyd's, it is evident that all syndicates depend on, and are part of, the business profile of Lloyd's as a whole. Therefore, any weakening of Lloyd's business position will act as a drag on an individual syndicate's rating. However, the particular characteristics that distinguish one syndicate from another and from the insurance industry as a whole can offset this to some extent. These characteristics are the main drivers of A.M. Best's analysis of the business profile of Lloyd's syndicates.

Potential Scenarios for Syndicates Rated Above Market Level

At the end of the interactive process and the assessment of the above key rating factors, A.M. Best believes two scenarios could emerge under which an individual syndicate could be assigned a rating above that of the market:

I.) The syndicate is backed by a capital provider that, in A.M. Best's opinion, offers a higher level of financial strength than the market and is fully committed to supporting the syndicate beyond the member's limited liability obligations and before recourse to Lloyd's Central Fund. A.M. Best undertakes a detailed analysis of the capital provider's commitment. A.M. Best would also have to be satisfied that the capital provider would not cease underwriting at Lloyd's under adverse circumstances not related to its own syndicate's performance, such as an additional Central Fund levy. Eligibility for a rating enhancement due to capital backing also may be affected if the corporate member participates in other syndicates, since capital held at member level is fungible across all syndicates in which the member participates.

II.) The business profile and/or operating performance of a syndicate are in line with the

characteristics of insurers with higher ratings. As with an insurance company, these two factors are key, leading indicators of a syndicate's ability to retain and attract capital and thereby support long-term financial strength.

The two scenarios are not mutually exclusive. An individual syndicate may achieve a rating above the level of the market through one or both scenarios.

A.M. Best's rating methodology for Lloyd's syndicates, as for all other ratings, is based on a combination of quantitative and qualitative standards, and the fundamental areas of analysis are the same as those employed for a traditional Best's Rating. Direct quantitative comparisons with traditional insurance companies' financials are not strictly possible because of Lloyd's unique capital structure. Therefore, results from a syndicate's quantitative analysis are compared with other syndicates and insurance companies of a comparable size and business mix, to the extent possible.

In A.M. Best's quantitative analysis, for the latest open years of account, A.M. Best will use data from the syndicate quarterly monitoring returns (QMR) when voluntarily provided by the syndicates. These reports, although technically unaudited, are Lloyd's regulatory returns. When using these data, A.M. Best also takes into account the syndicate's track record in producing reliable QMR data.

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Methodology

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Rating Monoline Financial Guarantors In the Public Finance Sector

Financial guarantors are monoline insurance companies that issue insurance policies designed to provide credit enhancements to debt instruments. Specifically, they unconditionally and irrevocably pledge to make timely payment of principal and interest when due in the event of defaults by insured obligors. Because financial guarantors are fundamentally insurance companies, *Best's Credit Rating Methodology (BCRM)* remains the governing document that provides a comprehensive explanation of A.M. Best's general rating process, including the complete set of rating criteria employed in the rating. This criteria report highlights rating considerations unique to the evaluation of financial guarantors that provide credit enhancements primarily to U.S. municipal bonds, such as the calculation of reserve risk, which depends heavily on the credit quality of the insured portfolio.

Municipal Bonds and Financial Guarantors

The roots of the financial guarantor industry were firmly fixed in the public finance sector until the late 1980s and early 1990s, when many of them began insuring collateralized debt obligations, mortgage-backed securities, credit card securitizations and other structured finance transactions. These asset classes underwent considerable stress during the 2008-2009 global credit crisis, and consequently the then-existing eight primary financial guarantors –which relied heavily on their high credit ratings to sustain their business model of enhancing the credits of the securities they insured – were downgraded. Many of the financial guarantors were downgraded severely enough to be effectively put out of business for new originations or placed in runoff. Over the past year, the financial guarantor industry has been attempting to return to its public finance roots with announcements of newly emerging insurers specializing exclusively in the public finance sector.

State and local government entities issue municipal bonds to finance a broad array of long-term public projects, to provide working capital for government projects, and to finance nongovernmental needs that benefit the public such as multifamily housing, hospitals and nursing homes, airports and seaports, solid waste disposal facilities, student loan programs, industrial development projects and other endeavors. The debt service associated with municipal bonds can be paid from a variety of sources, including the general revenues of the municipal issuer, specific tax receipts, cash flows from public projects, payment from private entities and other channels.

Prior to the 2008-2009 global credit crisis, the ratings of approximately 50% of newly issued municipal bonds were enhanced by monoline financial guarantors. That number since has dropped to only about 4% and has put a focus on better disclosures (to enable investors to better evaluate the credit quality of municipal securities) such as: the need for better and more timely financial information; audited annual statements; ease of data comparability among municipal securities; better disclosure by nongovernmental "conduit" borrowers that avail themselves of the municipal market; disclosure on municipalities' exposures to derivatives; conflict of interest issues (undisclosed payments, political contributions, etc.); and others.

Additional Information
Criteria
Understanding BCAR for Property/Casualty Insurers

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The General Rating Process

A.M. Best's rating process for both established insurance companies and new company formations (i.e., start-up ventures) involves quantitative and qualitative assessments grouped into three main categories: balance sheet strength, operating performance and business profile. In the case of a start-up venture, given the additional degree of uncertainty and lack of a track record, assessing the long-term sustainability of earnings and cash flows – keys to the interactive rating process – requires additional rigor in all areas of the rating process. These include the review and analysis of business plans; the assumptions underlying the company's projections; and operational controls. In addition, to reflect the heightened level of uncertainty inherent in reviewing a newly formed entity, more stringent quantitative and qualitative metrics are applied during the rating process. Extensive conversations with, and an assessment of, management are central to this process. This assessment of management includes developing an understanding of the organization's risk management and financial management framework and expertise.

The Special Nature of Financial Guarantors

This criteria report focuses on the evaluation of the balance sheet strength of financial guarantors – particularly the underwriting risk component. The balance sheet strength addresses the financial leverage, which may involve evaluation of any debt that is carried at a parent or holding-company level; underwriting leverage, including direct premium leverage and dependence on reinsurance; loss-reserve leverage; investment leverage and its impact on liquidity; credit risk; market risk; and risks relating to geographic concentration, the regulatory environment and changing economic and market conditions.

A company's underwriting, financial and investment leverage is subjected to an evaluation by Best's Capital Adequacy Ratio (BCAR). Capital represents financial strength of a financial guarantor. Reserves, surplus, unearned premium and other claims-paying resources form a buffer to protect policyholders against losses in the event claims are presented. A.M. Best's capital formula uses a risk-based capital approach whereby net required capital is calculated to support the three broad risk categories: investment risk, credit risk and underwriting risk. The BCAR model calculates the Net Required Capital to support the financial risks of the company associated with the exposure of assets and underwriting to adverse economic and market conditions, and compares this required capital to economic capital. Please see the criteria report *Understanding BCAR for Property/Casualty Insurers* for more details on the BCAR.

The capital factors used in the BCAR model to determine the capital charges for the underwriting risk components it addresses were derived from historical loss ratio data associated with multiple lines of insurance business. The financial guarantor space, however, has changed since the 1990s, when these insurers moved away from just wrapping municipal bonds into also wrapping structured finance securities. This makes it difficult to develop capital factors solely for financial guarantors specializing in the municipal space. Further, historical defaults in the municipal space have been quite low compared with defaults of corporate bonds. However, there is no assurance that this trend will continue, given the budgetary constraints faced by states and municipalities over the past few years.

Estimating reserve risk – particularly the amount of capital to be held to withstand losses within specific confidence levels – requires evaluating the credit risk of the municipal bonds that are being insured by financial guarantors. The process involves performing Monte Carlo simulations to produce the aggregate default profile of the portfolio of municipal bonds and translating such a profile into claims against the financial guarantors.

This simulation process fundamentally requires a view of the default risk associated with the rated municipal credits, recoveries, default correlations and other factors.

Establishing Default Risk of Municipal Securities

Claims against a financial guarantor are primarily driven by the credit quality of the bonds it insures, so it is important to evaluate historical default risk and determine whether it is appropriate to apply these data to current and future insured municipal bonds.

Most research on the default risk of municipal securities begins with a review of a publication titled *The Post War Quality of State and Local Debt* (The Hempel Study), written by George H. Hempel and published in 1971 by the National Bureau of Economic Research. The Hempel Study covered the last period of major municipal bond defaults experienced in the United States, which occurred in the Great Depression era of the 1930s. Specifically, the study covered the period from 1929 to 1937, and recorded a peak of $2.85 billion in

Exhibit 1
Best's Idealized Default Matrix

Credit Market Scale

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-
1	0.026%	0.034%	0.043%	0.053%	0.064%	0.113%	0.162%	0.212%	0.231%	0.270%
2	0.076	0.105	0.135	0.227	0.318	0.437	0.556	0.674	0.736	0.888
3	0.142	0.199	0.257	0.417	0.576	0.761	0.945	1.130	1.252	1.509
4	0.221	0.315	0.408	0.623	0.838	1.085	1.332	1.579	1.758	2.131
5	0.314	0.449	0.585	0.844	1.103	1.409	1.715	2.021	2.253	2.752
6	0.419	0.602	0.786	1.078	1.371	1.733	2.094	2.456	2.738	3.369
7	0.534	0.772	1.009	1.326	1.643	2.057	2.470	2.884	3.213	3.981
8	0.660	0.956	1.251	1.585	1.918	2.380	2.843	3.306	3.677	4.585
9	0.795	1.154	1.512	1.854	2.196	2.704	3.212	3.720	4.131	5.179
10	0.937	1.363	1.789	2.134	2.479	3.028	3.578	4.128	4.575	5.762
11	1.087	1.583	2.079	2.422	2.764	3.352	3.941	4.529	5.009	6.331
12	1.242	1.812	2.381	2.717	3.053	3.676	4.299	4.923	5.432	6.884
13	1.402	2.048	2.693	3.019	3.345	4.000	4.655	5.310	5.845	7.419
14	1.566	2.289	3.012	3.327	3.641	4.324	5.007	5.690	6.247	7.935
15	1.733	2.535	3.337	3.639	3.941	4.648	5.356	6.063	6.639	8.428

Credit Market Scale

Years	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.671%	1.202%	2.296%	2.812%	5.802%	7.610%	8.514%	9.410%	10.171%
2	1.956	3.259	5.276	7.296	10.599	14.353	16.840	18.218	19.396
3	3.183	5.229	8.103	11.464	15.081	20.601	24.459	26.225	27.741
4	4.351	7.114	10.781	15.328	19.258	26.374	31.411	33.485	35.269
5	5.461	8.914	13.314	18.900	23.144	31.694	37.739	40.048	42.038
6	6.515	10.631	15.706	22.192	26.752	36.582	43.480	45.961	48.106
7	7.512	12.264	17.962	25.216	30.095	41.058	48.670	51.272	53.526
8	8.455	13.814	20.086	27.984	33.185	45.144	53.344	56.022	58.349
9	9.342	15.284	22.081	30.508	36.035	48.861	57.534	60.255	62.623
10	10.177	16.672	23.952	32.800	38.659	52.229	61.271	64.007	66.395
11	10.958	17.981	25.703	34.872	41.069	55.271	64.585	67.318	69.708
12	11.687	19.210	27.339	36.736	43.277	58.006	67.503	70.221	72.605
13	12.364	20.362	28.863	38.404	45.297	60.456	70.050	72.750	75.123
14	12.991	21.435	30.279	39.888	47.142	62.642	72.253	74.937	77.301
15	13.568	22.433	31.592	41.200	48.824	64.586	74.133	76.812	79.175

Source: *Best's Idealized Default Matrix*

defaulted securities representing about a 15% default rate (associated with the average debt outstanding in the period) and a 0.50% net loss as a percentage of par value.

Municipal bonds during the Depression era study almost totally consisted of general obligation bonds or essential purpose bonds. Today, the nearly $4 trillion municipal bond market includes a whole array of financing schemes that include private-entity financings, which appear to have higher default rates than general obligation bonds whose debt service relies solely on the taxing authority of municipalities. Still, recent studies by major rating agencies, though generally showing an increase in municipal bond defaults from 2010 to 2012, have not shown default rates approaching those of corporate bonds. Nevertheless, any sanguine view of municipal bond defaults should be tempered by a few facts:

• The sluggish economy has put enormous pressure on state and local governments as tax revenues fall short of the incomes needed to provide essential services and cover obligations such as unfunded pension and healthcare benefit costs.

• The ability to raise property, sales, and other taxes to provide the revenues for debt service on "general obligation" municipal bonds is not unlimited, and the willingness to do so is constrained in a difficult economic environment.

• In 2011, Jefferson County in Alabama filed for a voluntary petition under Chapter 9 of the Bankruptcy Code – a $4.15 billion municipal bankruptcy that is the largest in U.S. history to date.

• In 2013, the City of Stockton, California gained protection under Chapter 9 of the Bankruptcy Code providing the stage for possibly a precedent-setting municipal debt

Exhibit 2

Municipal Bonds – A.M. Best Risk Classifications

Risk Classification	Groupings Description	Risk Class Relativity	Recovery Rate	Default Period
1	State and Local Government General Obligation Utilities: Water, Sewer, Solid Waste State Government Special Tax Obligation: Sales, Income, Gas, Other Public Colleges and Universities State Revolving Fund: Environmental Projects Housing: FHA Insured and State Agency Obligations	1.0	95%	2 Years
2	State & Local Government Lease Appropriation & Other General Fund Obligations Local Government Special Tax Obligation: Sales, Income, Excise, etc. Public Power: Electric and Gas Airport and Port General Revenue Toll Roads, Transit and Bridges – Established Federal Grants and Leases	1.1	90%	3 Years
3	Local Government Tax Increment and Assessments Resource Recovery Private Colleges & Universities: Broad-Based Tuition & General Obligation Local Agency Single-Family Housing Health Care Systems: Hospital and Other	1.5	80%	4 Years
4	Private Colleges and Universities: Auxiliary Facilities Housing Other: Affordable Housing-Section 8, Military, Mobile Home & Misc. Development: Hotel, Convention Center, Stadium Toll Roads and Bridges: Start-up Special Facilities: Airport, Port, Single-Site Parking Health Care Single-Site Facilities: Hospitals, Life-Care Centers Not-for-Profit: Charter Schools, Cultural and Other	2.0	60%	4 Years

Source: A.M. Best

reorganization plan for the City. The ultimate resolution of this bankruptcy could have ramifications for the City as well as capital market creditors nationwide in terms of priority of payments made by distressed governmental entities.

• Defaulted municipal securities have been concentrated in the following sectors: multifamily housing, healthcare and land-backed deals.

In reviewing the major default studies on municipal bonds – both by academics and rating agencies – it is clear that historical defaults in certain segments of the municipal bond market are below defaults as observed in the corporate bond market. This is especially true for essential-purpose bonds such as state and local general obligation bonds. Other segments of the municipal bond market, such as the housing and health care sectors, exhibit default rates that approach those of corporate bonds. However, it appears that a significant reason for the differences between municipal and corporate bond default rates is that some rating agencies were using two different rating scales. By 2010, these rating agencies had recalibrated their municipal bond ratings to effectively rate municipal bonds and corporate bonds on the same scale. The result was that many municipal bond ratings were moved up in the calibration process. It may take some time before new default studies can show the extent to which the recalibrations have converged the default probabilities of municipal bonds and corporate bonds within the same rating bands. If indeed the default probabilities of municipal and corporate bonds in the same rating bands have moved closer, it may change the view of the relationship between corporate and municipal bond default rates. Until then, A.M. Best's view of the relationship between corporate bond default rates and municipal bond default rates based on the current available data will be influenced by the fact that a new cycle of municipal bond defaults may yet emerge over the coming years, given the financial stresses currently experienced by states and municipalities.

In modeling claims associated with insuring municipal bonds, A.M. Best will apply the default rates in *Best's Idealized Default Matrix* as shown in **Exhibit 1**. The matrix shows the idealized cumulative default rates for A.M. Best's senior debt ratings on the issuer credit rating (ICR) scale. In cases where A.M. Best does not rate a municipal bond or has not provided a credit assessment, A.M. Best will translate the rating of other rating agencies to the scale on this matrix and then apply the corresponding cumulative default rates in the modeling process. If no credit rating agency has publicly rated the municipal securities being wrapped, and if A.M. Best has not provided any credit assessments, the securities will be assigned a "bb+" rating.

Risk Classification

A.M. Best groups municipal bonds into four broad risk classifications to reflect municipal bonds with similar expectations of default and recoveries based on informed judgment and empirical data. The items taken into consideration in determining these risk classifications include revenue predictability and the competitive environment of the enterprises in question. Generally, insurers of low-risk municipal debt such as tax-backed general obligation bonds are expected to receive higher recoveries compared with insurers of high-risk municipal debt such as revenue bonds associated with sports stadiums. A.M. Best categorizes municipal bonds in four broad risk classifications, which reflect risk hierarchies from 1 (lowest risk) to 4 (highest risk) as shown in **Exhibit 2**. Each municipal security is mapped to this risk classification table, and the assigned default probability is increased based on the "risk class relativity" column. For example, if a municipal bond falls in risk classification 3, the assumed default probability of that bond would be multiplied by 150%.

Recovery Rates

A.M. Best also assigns recovery rates to each of the risk classifications to recognize the variability in recoveries associated with the different types of municipal bonds. High recovery rates are given to low-risk municipal business, and low recovery rates are assigned to the highest risk class. The listed recovery rates are based on informed judgment and a review of historical recovery rates of municipal bonds. A.M. Best's review of the available data on municipal bonds shows that although recoveries can be volatile, they are generally high for essential-service bonds. In general, A.M. Best expects high recoveries for insured municipal bonds due to insurers' control rights, loss-mitigation efforts, remedies and active surveillance. A.M. Best's selected risk classifications, the associated risk class relativities and recovery rates are reflected in A.M. Best's simulation model when deriving the loss estimates associated with a financial guarantor municipal bond book of business. **Exhibit 2** shows an overview of the selected risk classifications, the associated class relativities and the recovery rates.

Default Period

The default period is the period in which a financial guarantor is responsible for making all debt service payments before any recoveries. The default period may be seen as the period in which bond payments are suspended until there is resolution of the missed payment. A.M. Best assumes this period ranges from two to four years as shown in **Exhibit 2**, depending on the risk classifications, and generally would expect a higher default period for higher risk classifications.

Exhibit 3

Net Claims for Default of a Municipal Bond in Risk Classification 3

A	B	C	D	E	F	G
Year	Annual Debt Service Scheduled to Be Paid by Obligor	Gross Claims Against FG* Assuming Default Occurred in Yr 5 (Col B From Default Year On)	Recoveries From Obligor on Claims in Default Period – 1st 4 Yrs of Default in Risk Class (80%* Col C) – Lagged by 4 Yrs	Recoveries From Obligor on Ongoing Claims (80%* Col C) From Yr 9 On	Net Claims Against FG* Col C+Col D+Col E	Present Value Net Claims Against FG* (Col F PV @ 4%)
1	$1,000				$0	$0
2	$990				$0	$0
3	$984				$0	$0
4	$978				$0	$0
5	$973	$973			$973	$800
6	$968	$968			$968	$765
7	$956	$956			$956	$726
8	$947	$947			$947	$692
9	$942	$942	$(778)	$(754)	$(590)	$(415)
10	$932	$932	$(774)	$(746)	$(588)	$(397)
11	$918	$918	$(765)	$(734)	$(581)	$(378)
12	$914	$914	$(757)	$(731)	$(574)	$(359)
13	$905	$905		$(724)	$181	$109
14	$896	$896		$(717)	$179	$104
15	$889	$889		$(711)	$178	$99
16	$876	$876		$(701)	$175	$94
17	$870	$870		$(696)	$174	$89
18	$867	$867		$(694)	$173	$86
19	$856	$856		$(685)	$171	$81
20	$851	$851		$(681)	$170	$78
	$18,513	$14,560	$(3,075)	$(8,574)	$2,912	$2,173

* FG = Financial Guarantor
Source: A.M. Best

Correlations

A.M. Best will assume that if the debt service of multiple municipal bonds issued by the same municipal obligor is made from the same source of revenue, those bonds are 100% correlated and therefore will be consolidated for modeling purposes. For all other municipal bonds issued within a state, A.M. Best will assume a base default intrastate correlation of 10%. Base interstate default correlations will be assumed to be 2%.

Simulating Claims

To simulate claims, A.M. Best begins with a yearly debt service schedule for each municipal bond from the current period to maturity. A.M. Best assigns a default probability to each of the bonds and then draws random numbers, correlates those random numbers and determines the timing of each municipal bond default. From the time the bond defaults, A.M. Best assumes that the financial guarantor makes the full debt service payments (instead of the original obligor) until the bond matures or is called. A.M. Best uses the nomenclature, Net Claims, to indicate the amount of debt service the financial guarantor has to pay each period after taking recoveries into consideration.

Exhibit 4

Best's Idealized Default Rates of Insurers*

1-year default rates on the Credit Market Scale (in %).

Rating	Default Probability
aaa	0.0341
aa+	0.0636
aa	0.1129
aa-	0.1623
a+	0.2116
a	0.2310
a-	0.2697
bbb+	0.6708
bbb	1.2018
bbb-	2.2956

* Derived from Best's Idealized Default Matrix
Source: A.M. Best

The calculation of Net Claims represents three cash flow components. The hypothetical example in **Exhibit 3** (which assumes a municipal bond in risk classification 3 that defaults in year 5) illustrates these components, which are more fully described below:

Gross Claims Against Financial Guarantor (Column C): In the modeling process of the insured municipal bond portfolio, A.M. Best assumes that if a municipal bond defaults, the financial guarantor becomes responsible for making the Annual Debt Service (shown in Column B) from the time of default until maturity. In the example in **Exhibit 3**, Column C shows the debt service that the financial guarantor has to pay from the time of default (year 5) until the maturity of the bond in the 20th year.

Recoveries from Obligor on Claims in Default Period (Column D): A.M. Best assumes that during the first four years of the municipal bond's default (the default period for risk classification 3), the financial guarantor makes the full debt service payment due without the benefit of any recoveries from the obligor. The recoveries from the obligor on these four years of debt service ultimately are achieved with a four-year lag based on an assumed recovery percentage commensurate with the risk classification. **Exhibit 3** assumes a recovery percentage of 80% based on risk classification 3 and that the recovery begins in the fourth year (assuming a four-year recovery lag period) after the municipal bond's default. In **Exhibit 3** (Column D), the recoveries associated with the first four years of defaults begin in the ninth year and end in the 12th year. To be specific, the recovery associated with the default in the fifth year, $778 (=80%* $973) would be realized in the ninth year. The recovery associated with the default in the sixth year, $774 (=80%* $968) would be realized in the 10th year and so on, until the last recovery associated with default in the eighth year is realized in the 12th year.

Recoveries From Obligor on Ongoing Claims (Column E): While the financial guarantor receives a recovery based on the obligor's first four years of defaulted debt service with a four-year lag (as described above in our example), it also receives a recovery on the defaulted debt service from the fifth year of the default until the bond's maturity with no lag. In **Exhibit 3**, Column E shows the recoveries based on 80% of the gross claims against the financial guarantor (Column C) starting in year 5 of the default. Therefore, in the ninth year (which represents year 5 of the municipal bond's default), the recovery in Column E is $754 (=80%*$942).

The summation of the three items listed above results in Net Claims that a financial guarantor will have to pay in the event of a municipal bond default. A.M. Best discounts the Net Claims to recognize the equity built into such claims. The calculation of the Net Claims per year in the example in **Exhibit 3** is shown in Column F. Column G is the present value of the Net Claims.The discount rate applied in the present value calculation is 4%, which is consistent with the discount rate used in other A.M. Best rating criteria, including *Understanding BCAR for Property/Casualty Insurers*.

A.M. Best's Monte Carlo simulation model calculates the present value of total Net Claims against a financial guarantor on a portfolio basis after applying appropriate default, recovery and correlation assumptions. A.M. Best then chooses the appropriate claims from an array of the 100,000 or more simulated claims such that the probability of exceeding such claims is no more than the one-year default probability shown in **Exhibit 4** for the targeted rating level. For a "aaa" rating target, the default threshold is 0.0341% over a one-year period. The effective confidence level is approximately 99.97%. A.M. Best uses this confidence level approach because the statistical credibility associated with the expected default frequency and loss severity of insured municipal bonds, much like the statistical credibility of such measures related to excess casualty and natural catastrophe insurance, is relatively low compared with that associated with life insurance and personal automobile insurance. Thus, A.M. Best expects the loss distributions associated with financial guarantors to be positively skewed with considerable tail risk. The one-year confidence level is used in A.M. Best's analyses because A.M. Best applies a one-year risk period in the credit risk evaluation of insurance carriers.

BCAR Results & Adjustments

The present value of the Net Claims tabulated as described in the prior section is used in A.M. Best's BCAR model to determine the ratio of a financial guarantor's adjusted capital to its net required capital. In general, the ratio indicates whether an insurer's capital strength aligns with A.M. Best's "Secure" or "Vulnerable" rating categories and is based on the specific risk profile of a company's operations. A BCAR score below 100% would be considered vulnerable. The criteria report *Understanding BCAR for Property/Casualty Insurers* explains fully the significance of the BCAR score and how it reflects one aspect of an insurer's financial strength rating.

Collectively, the investment, credit and underwriting risk components generate more than 99% of a company's gross required capital. A company's gross required capital, which is the sum of the capital required to support all of its risk components, reflects the amount of capital needed to support all of those risks if they were to develop simultaneously. However, these individual components then are subjected to a covariance calculation within the BCAR formula to account for the assumed statistical independence of these components. This covariance adjustment signals that it is unlikely that all of the individual risk components will develop simultaneously, and this adjustment generally reduces a company's overall required capital. However, in certain instances, A.M. Best will modify

elements of the covariance adjustment to reflect some level of correlation among some of the components. With respect to financial guarantors, A.M. Best is aware that such entities may buy bonds similar to those they insure for their investment portfolios. From a risk management point of view, this could mean that the aggregate loss experienced by the financial guarantor due to claims on the bonds it has insured could be correlated with the default risk of the portion of assets in its investment portfolio. In such instances, A.M. Best will add a portion of investment risk to reserve risk in the covariance adjustment formula. Please see the criteria *Understanding BCAR for Property/Casualty Insurers* for the details of the covariance adjustment.

A.M. Best makes a number of adjustments to a company's reported capital within its BCAR model to provide a more economic and comparable basis for evaluating capital adequacy. Different accounting methods and regulatory requirements in various jurisdictions require numerous adjustments to a company's reported capital. Goodwill and other intangible assets are eliminated. Pre-event catastrophe reserves, where applicable, are removed from the loss reserves and moved into available capital on a tax-effected basis. Adjustments for any embedded value in unearned premium reserves, loss reserves and fixed-income securities are made if the company has not already reflected these in its reported capital. Further adjustments are made to capital to reflect other non-balance sheet risks, including catastrophe exposures and debt-service requirements.

A.M. Best's capital model emphasizes permanent capital and consequently will reduce a company's reported surplus for encumbered capital, which includes surplus notes and future debt-service requirements of an affiliated holding company. This reduction, in whole or in part, depends on the magnitude of, and dependence an insurance group has on, debt-like instruments and their associated repayment features. Both quantitative and qualitative factors are considered in the evaluation of debt. As part of the quantitative analysis, A.M. Best uses a separate model to assist in determining the amount of surplus credit given to surplus notes and debt instruments. The primary issue, which determines the level of credit given, is the term of the debt compared with the length of time needed to pay the bulk of the policy liabilities. Usually, more credit is given to longer term than to short-term debt. Another key determinant is the company's rate of return compared with the interest rate charged on the debt. A company should be earning more than its cost of capital to receive credit for the debt.

On a qualitative basis, issues such as where the debt is held as opposed to where the cash is used; the existence of other sources of income to offset the cost of debt; fixed charge coverage; and the overall level of debt relative to the organization's total capital all are considered. For example, when debt is issued at the holding company but the cash is held at the operating insurance company, even though the cash is given full credit in the BCAR analysis of the operating company, the actual rating of the operating company could be limited by the evaluation of the financial leverage.

Stresses and Sensitivities Applied

While the loss simulation model calculates probability loss distributions, which reflect a portfolio's credit quality, maturity profile and risk distribution across the various risk classes, the level of losses in stress scenarios critically depends on: concentration risk; increased credit risk of vulnerable obligors; and idiosyncratic risks such as severe economic downturns. The reader should be aware that the stresses will not necessarily be applied simultaneously, and that the extent of the reserve increase after applying such stresses may affect the ultimate rating of the financial guarantor. The following stresses may be incorporated into our calculation of loss estimates:

Systematic Credit Deterioration: A random sample of 33% of the insured portfolio is drawn, and then three separate tests designed to stress the effect of a systematic credit deterioration are performed:

1. The ratings associated with the random sample are downgraded by one notch.

2. The ratings associated with the random sample are downgraded by two notches.

3. The ratings associated with the random sample are downgraded by three notches.

Overall Issuer Concentration: Single-issuer concentration can make financial guarantors susceptible to changing economic conditions. There are three separate issuer concentration tests:

1. Excluding issuers already in default, 2% of the top issuers are downgraded by three notches.

2. Excluding issuers already in default, 2% of the top issuers in specific rating bands are downgraded by three notches. The rating bands are as follows: "aaa" to "a-"; "bbb+" to "bbb-"; and "bb+" and below.

3. Excluding issuers already in default, 1% of the top issuers are defaulted.

Vulnerable Issuers: The stress test for vulnerable issuers combines three factors simultaneously: a) a 25% increase of the default probabilities in *Best's Idealized Default Matrix* (which is used in the simulation process) for all ratings below "a-"; b) a one-notch downgrade of issuers with negative rating outlooks; and c) a two-notch downgrade of issuers with negative under-review modifiers.

Below Investment Grade Ratings: Substantive migration of ratings from investment grade to non-investment grade exposes financial guarantors to additional capital requirements and may also reveal weak risk management processes. Municipal bonds with below investment grade ratings will be defaulted.

Severe Economic Downturn: There are three stress tests related to a severe economic downturn:

1. A.M. Best will assume that the return period for a severe economic event is 50 years. In the event of such an economic downturn, A.M. Best assumes that 15% of the portfolio defaults all at once.

2. Increasing intrastate correlations to 15% and interstate correlations to 5%.

3. Decreasing recoveries associated with defaulted issuers such that the loss given default is increased by 50%.

Catastrophic Risk: Catastrophe risk is incorporated into the simulation model to reflect the possibility that a municipal bond's default risk could be heightened based on the occurrence of natural catastrophes such as hurricanes and earthquakes. A.M. Best assumes that the annual probability of serious hurricane activity is 1% in specific counties in the following six states: Florida, Louisiana, Mississippi, Texas, North Carolina, and South Carolina. A.M. Best assumes the annual probability of serious quake activity is 0.40% in specific counties in the following six states: California, Alaska, Hawaii, Nevada, Washington, and Missouri. Upon the occurrence of a hurricane or earthquake in a given state, the default probability of the municipal bonds issued in that state or county is increased by 50%.

Additional stress and sensitivity testing may include, but is not limited to, the following:

- Varying default periods before recoveries;
- Further discounting and haircutting installment premiums where applicable;
- Varying the discount rate used to present value net claims; and
- Stressing factors to account for idiosyncratic risks.

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Methodology

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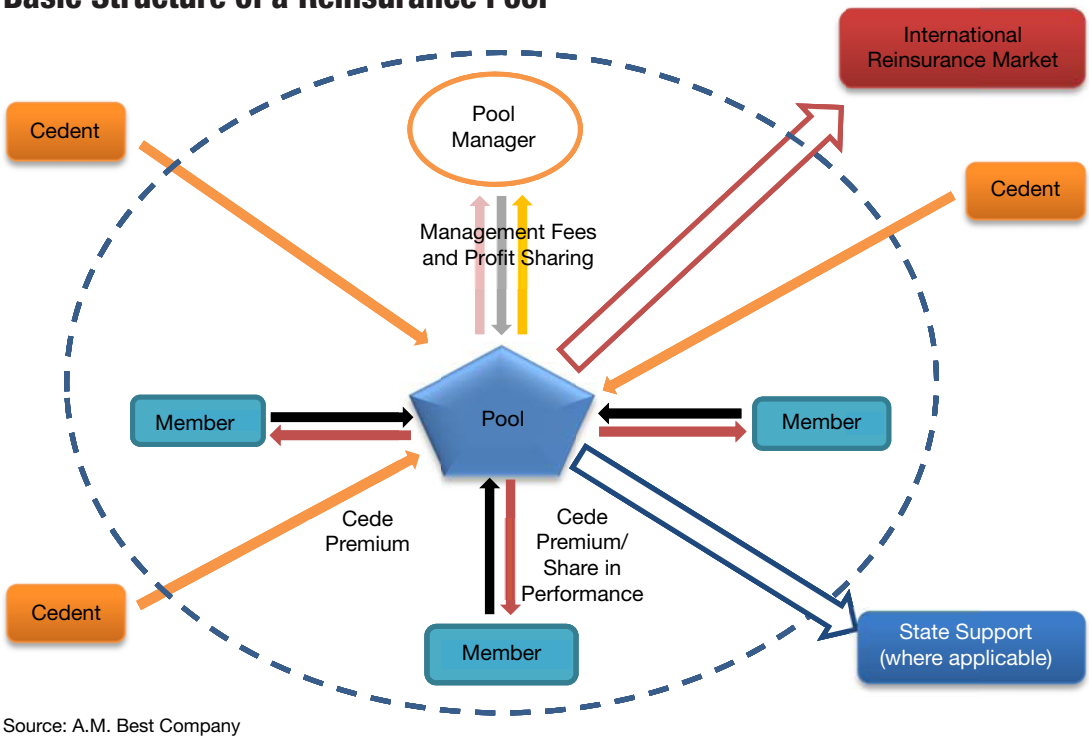
Rating Reinsurance Pools

The international reinsurance market is the primary mechanism for the transfer of insurance risk. However, the availability of adequate reinsurance protection in some markets is limited, particularly for high-value, natural catastrophe and terrorism risks, which have given rise to national and regional reinsurance pools. Though comprising only a fraction of the reinsurance market, pooling arrangements have been active since at least the 1950s and are likely to play an important role for risk transfer and risk mitigation, in both developed and emerging markets. Reinsurance pools (pools) demonstrate the necessity for unique risk transfer, providing an alternative solution to traditional reinsurance. While some pools are private and independently run operations, in many cases, pools exist through government requirements to provide adequate cover to markets, particularly pertaining to high-severity risks. As such, pools can be government owned or have an element of government sponsorship.

There are many structures and arrangements commonly referred to as reinsurance pools; however, A.M. Best defines a "reinsurance pool" as any entity, agent or contractual agreement that provides a mechanism for collective acceptance and sharing, equal or otherwise, of insurance risk among its members. The members (which also can be referred to as owners or shareholders) are the ultimate guarantors of the pool, assuming all liabilities arising from the pooling arrangements. This report outlines the key rating criteria and considerations specific to reinsurance pools, and includes a discussion of how these distinctive features are treated in a

Exhibit 1

Basic Structure of a Reinsurance Pool



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rating evaluation. Reinsurance pools (particularly those with hard capital) generally have similar characteristics to reinsurers, and thus this criteria report should be read in conjunction with A.M. Best's main insurance methodology, *Best's Credit Rating Methodology*. Given that the capital structures of reinsurance pools can vary greatly, they require particular attention to the assessment of capital adequacy. There will be a greater focus on the corporate governance framework and level of financial support and commitment the members provide to the pool.

Rationale for Establishing Reinsurance Pools

The motives for establishing reinsurance pools can be divided into two main categories: those that are opportunistic, taking advantage of absent capacity, and those that concentrate on greater risk retention.

Insurers sometimes lack the expertise or capacity to underwrite or retain complex or high-value risks, such as natural catastrophes, energy, nuclear, aviation, war and terrorism. This is particularly the case in emerging economies, where insurance markets are immature. As has been seen, pooling high-severity exposures provides a suitable mechanism for risk transfer or risk sharing. This has given rise to compulsory schemes for catastrophe management and terrorism cover in many jurisdictions to ensure adequate protection to policyholders and governments.

For catastrophe reinsurance, in many cases there may be a ceiling or limit on the allowable exposure to reinsurers, as well as exclusions in instances such as terrorism and war. However, while demand for insurance cover of such risks remains, capacity can be volatile, often falling short and leading to inefficient markets for such risks. Indeed, the exit of reinsurers from the U.K. terrorism market in the 1980s was the key driver behind a state-sponsored pool to provide terrorism cover. Given the size and type of risks that pools tend to cover and the potential economic impact on a country or region, pools often have some level of government involvement. In many emerging markets, natural catastrophe pools have been created and receive compulsory cessions. There is growing interest in the use of national and regional reinsurance pools to share risk in the event of a major catastrophe, while limiting to a certain degree the adverse impact that governments may experience post-disaster in the absence of insurance cover.

In most emerging markets, insurance companies often lack the expertise and capacity to underwrite and retain complex or high-value risks. Indeed, the business mix of most direct writers within emerging economies tends, on a net basis, to be highly skewed toward short-tailed motor and medical lines, with commercial risks such as energy, fire and engineering business largely fronted for the international reinsurance market. In these markets, pools generally are used as a mechanism to retain risks within the country or region. Cedents utilize the pool to reduce their exposure to high-severity risks, which would add unwanted volatility if retained. For the members, the pooling of risks adds diversification across classes of business and territories, which they otherwise would be unable to achieve. The cedent may receive inward commission from the pool for the successful placement of good-quality risks. This can provide the members with improved risk selection and diversification, thereby allowing greater purchasing power in international retrocession markets. For the pool to achieve its desired effect, all parties must trust in the pool's risk-transfer and risk-sharing mechanisms. As such, it is essential for the pool manager to build a strong corporate governance framework.

Structure of Reinsurance Pools

Reinsurance pools can be structured and governed in different ways. There are pools that are incorporated companies, licensed and registered within a jurisdiction and subject to local regulatory requirements, which operate in a similar manner to that of a reinsurance company. Conversely, there are pools known as policy issuing entities that may have no hard capital commitments and are based on the principle of reciprocal reinsurance, as outlined in a contractual agreement among members, the pool manager and its cedents. A.M. Best will evaluate the capital structure and composition of each individual pool to understand the commitment of members' participation and the corporate governance mechanism in place to assess the reinsurance pool's capital strength.

Within each pool there are some common stakeholders. A.M. Best defines the key stakeholders as follows:

Pool Manager –The pool manager is considered to be the most important stakeholder, given that it is responsible for the governance of the pool. Such duties may include, but are not limited to:

- Managing the pool's cash flow
- Setting underwriting guidelines
- Setting parameters for risk tolerance, limits, concentration and accumulations
- Purchasing retrocession cover
- Enforcing guidelines for minimum selection requirements for cedents and members
- Establishing and managing the control environment (risk committees, pool participation levels and voting rights)
- Ensuring appropriate procedures and governance are followed
- Establishing mechanisms for commission payments, profit distribution and recoveries for underwriting deficits
- Managing pool functionality and addressing key issues
- Creating and implementing the risk management framework

The pool manager is typically a member of the pool and often the founder. The pool manager usually receives a management fee in addition to profit-sharing arrangements through its position as a member. A.M. Best will examine whether or not the pool manager demonstrates sufficient knowledge and expertise to run the pool effectively, in line with the pool's core principles as set out in its governance framework. The rating analysis emphasizes the pool manager's ability to manage the pool effectively to meet the members' strategic targets. The pool manager's role is akin to that of the managing general underwriter (MGU) in most of the MGU business written in the United States. In some instances, the pool manager may not be a reinsurer or insurer and may undertake no liabilities of the pool.

Members –The members of a pool are those companies that enter a reciprocal agreement with other pool members, and can cede business into the pool while also accepting retrocession from it. The members are liable to cover all claims costs and other associated liabilities arising from the pool, but they will benefit from any profit distribution generated by the pool. Members must adhere to the terms and conditions established by the pool's board of directors to maintain their membership within the pool.

Cedents **–**An entity that cedes business to a pool but does not accept a share of retrocession.

International Reinsurance Market **–**The pool may actively utilize retrocession markets to reduce volatility in its profile, particularly if it is exposed to high-severity risks or operating in catastrophe-prone regions. The pooling of risks should provide greater diversification and capacity, which in turn enables greater negotiating power with retrocessionaires.

Government Participation **–**The composition of a pool in some instances may have government involvement. The level of participation and explicit support provided by the government will be factored into the rating (refer to *Rating Members of Insurance Groups*).

Assessing the Financial Strength of Reinsurance Pools

Capital Adequacy

The strategic objective and diversity of reinsurance pools has led to many different formations and structures. As such, the capital structure can vary considerably from one pool to the next. Some reinsurance pools have no hard capital committed, but instead rely on the "joint and several" (J&S) liability of the members as security. Other pools may have unaffiliated non-insurance companies as members. The rating assessment of these pool structures will be based largely on the financial strength of the pool members, the strength of the corporate governance framework and the members' commitment to the pool. Given the unique structure of pools, the credit quality of the pool members will be assessed. To provide a rating assessment on a pool, A.M. Best expects to have ratings coverage on a strong majority of its members. Consideration also will be given for the participation of insurance companies within the pool and their respective expertise.

A.M. Best assesses whether or not the pool has sufficient assets held in trust or callable letters of credit to ensure the pool can meet its financial obligations. A.M. Best assesses the strength of the capital commitments and considers credit in its risk-based capital model (Best's Capital Adequacy Ratio). Consideration also will be given for the level of financial flexibility and fungibility of capital between pool members, as well as any clauses for recapitalization of funds in the event they are exhausted. If necessary, A.M. Best may seek an independent legal opinion on the pool, particularly pertaining to the enforceability of the contract between the pool and its members.

Depending on the pool's capital structure, A.M. Best may measure capital adequacy based on the estimated unexpected loss amount of the pool's net exposure. The unexpected loss amount may be tempered by any guarantees by pool members or average ratings of the pool members. For these alternative capital structures, the probability of exhausting the capital and surplus will be one of the factors reviewed when determining the rating. A level of capital for estimating unexpected losses is essential for these pools because of the following reasons:

a. The unexpected loss amount, which is essentially the capital and surplus position, is part of the quantitative aspect and a key ingredient in assessing the financial strength and creditworthiness of insurance entities. This is one objective measure that can be used in assigning ratings for insurance entities, including traditional reinsurance, insurance and other special-purpose insurance vehicles such as sidecars.

b. The membership of a given reinsurance pool may be made of heterogeneous entities with varied interests and objectives. For example, pool membership may not be restricted to reinsurers and insurers, but may include hedge funds, insurance-linked securities specialists, etc. These entities with diverse opinions may impact the viability of the pool, despite all the legal and corporate governance documents. Furthermore, some of these entities in the pool may not be rated by A.M. Best, making it difficult to assign the tail risk back to the pool members. In such cases, a level of capitalization is needed to cover the pool's insurance and other contractual obligations.

c. Reliance on the parent ratings of pool members may not always suffice (e.g., reliance on ratings of Lehman Brothers Inc. by most of its subsidiaries as counterparties in various transactions). Further, the entering and exit of pool members may exacerbate this issue. Thus, although qualitatively the average ratings, contract clauses and other financial flexibility, including guarantees, may be used to temper available capital and surplus, an estimate of the unexpected loss amount, which essentially represents the capital and surplus position within a given rating tolerance at any given time, is warranted.

d. The difficulty associated with the duration/unwinding of these pools is always a concern. This is evident by the problems various MGU business encountered with accident and health and workers' compensation carve-outs in the late 1980s and early 1990s in the United States.

Liquidity Risk

One of the main aspects of the pool that requires careful consideration is the implications for its members when the pool is in financial distress. There should be clear policies and rules defined in the pool's charter that outline the mechanism in place for a distressed scenario, as well as members' commitment to the pool. Moreover, A.M. Best will also need to understand the implications should the pool's manager run into financial difficulty. In such instances, A.M. Best will assess the conditions under which the pool manager's role can be transferred to another member or a third party. Where the pool's manager acts as cedent and/or member, there may be multiple issues that would need to be governed adequately to ensure sufficient protection for the pool. The pool should be transparent and maintain sufficient funds committed from members to cover such adverse scenarios.

Performance

The operating performance of a pool is restricted largely to its underwriting activities, as limited surplus funds are available for investment activity, particularly for those that have no hard capital committed. Hence, a greater precedence is set toward the pool's ability to generate a strong track record of technical profitability, which is likely to be comparable to that of a typical reinsurer.

Business Profile

A.M. Best acknowledges that pools' profiles can vary considerably. While some pools operate similarly to standard reinsurance companies, many function in niche markets, specializing in particular segments. The core principles underlying a pool's fundamental profile will be considered in the assessment, and credit given to specialized pools that demonstrate their expertise in the market.

Corporate Governance & Risk Management

Risk management and corporate governance play pivotal roles when assessing reinsurance pools. A favorable rating factor would be a strong system of corporate governance,

with a clear identification of the contractual agreement between members, cedents and the pool's manager. The level of transparency in the pool's operations is a key rating factor. Such transparency might include the production of annual reports by a reputable audit firm with detailed footnote disclosures; third-party actuarial assessments of reserves; regular and meaningful risk committee reports; board of directors reports; guidelines on member participation; and an independent legal opinion on the pool's liabilities.

The conditions binding the liabilities of the pool to its members are key. Pools generally operate in contract cycles (such as one- or three-year commitment periods), after which membership of the pool can change. A.M. Best would review the notice period required before any party (the member or the pool manager) relinquishes ties with the pool. Another important factor is the run-off of liabilities after the end of the contract cycle. A.M. Best needs to understand the consequences surrounding any member that exits the pool and the departing member's participation in any liabilities that may arise in the future. If the pool allows special circumstances in which a member can leave the agreement early, then A.M. Best will review the obligations of the remaining members to cover any outstanding liability. Stability in the composition of members is considered a positive rating factor. Given that there is no general fund to access in case of extreme losses (as in Lloyd's), A.M. Best will assess the mechanism in place to support the pool's continuity.

Reserve Adequacy

Given the limited contract cycle of pools, A.M. Best will assess that sufficient reserves are held until all liabilities have been run off from the operation. This highlights the importance of regularly monitoring reserves and maintaining them at an appropriate level to reduce the possibility of a shortfall. Therefore, A.M. Best will assess the mechanism in place for distributing underwriting surpluses, taking into consideration reserve adequacy and any potential recourse from members to cover adverse loss-reserve development. Furthermore, it is important for a pool to demonstrate that it has sufficient funds to cover a possible surge in claims payments. A.M. Best also will consider any independent, third-party actuarial opinion of reserve adequacy.

Probable Maximum Loss (PML) Exposure

The risks underwritten by the pool are, in many cases, associated with high-severity risks. A.M. Best conducts stress tests in line with its methodology (refer to *Catastrophe Analysis in A.M. Best Ratings*) to assess the pool's capital strength under adverse scenarios. The tests will determine whether the pool has sufficient funds or commitments to support the operation prospectively in a catastrophe-stressed environment. Moreover, in such a stressed environment, A.M. Best will assess any further strain on the pool, given that there may be correlation between the pool and its members' assumed risks.

Exhibit 2

Example of Information Requirements

Audited financial statements	Agreement between member and pool
Latest financial statements for all pool members	Agreements of funds held in trust or letters of credit
Corporate governance framework	Documentation of run-off liability
Terms and conditions of pool	Mechanism for changing pool member
Performance track record	State guarantees/support
International retrocession	Distributing profit surpluses/collecting shortfalls
Independent assessment of reserves	

Source: A.M. Best

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SR-2013-M-454

September 19, 2014

Rating Reinsurance/Insurance Transformer Vehicles

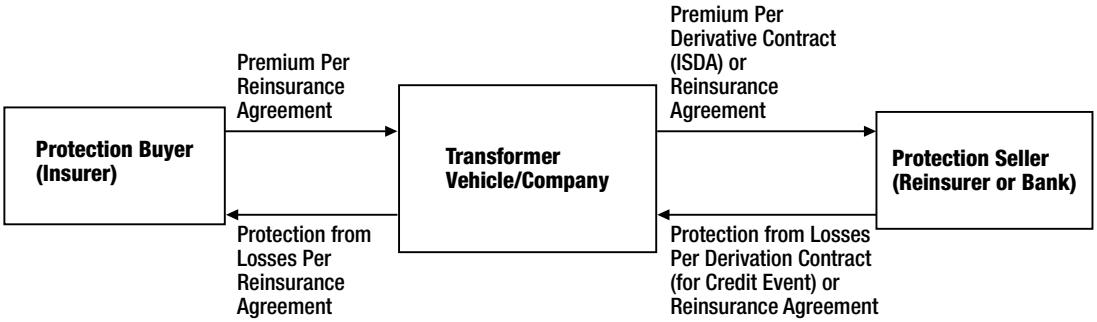
The convergence between the capital markets and the reinsurance/insurance sector has produced various platforms and instruments to transfer risk between insurance entities and capital market participants. The abundance of various insurance structured products – including but not limited to catastrophe bonds, sidecars, insurance loss warranties, peak exposure derivative products, and investment-linked insurance policies with principal protection and minimum guarantee return features – has provided an opportunity to transform insurable interest into derivative instruments and vice versa. Such transactions may be accomplished through the use of a transformer vehicle that facilitates a bridge between the capital markets and the reinsurance market. The increasing use of transformer vehicles is also undertaken in part to: overcome regulatory hurdles encountered by insurance entities that endeavor to write credit derivative products; access or add additional market capacity; and help facilitate investors' growing interest in insurance-linked instruments.

Because insurance transformer vehicles are corporate legal entities that have characteristics and features similar to insurance companies, *Best's Credit Rating Methodology* (*BCRM*) remains the governing document that provides a comprehensive explanation of A.M. Best's general rating process, including the complete set of rating criteria employed. This criteria report highlights rating considerations unique to the evaluation of transformer vehicles and the process by which the transformer vehicle acts as an intermediary to transfer risks to various counterparties (i.e., reinsurance and non-insurance entities).

Transformer Vehicle – Definition

An insurance transformer acts as an intermediary between a capital market participant (such as a bank) and an insurance company, allowing the transfer of derivative contracts into insurable interest. A transformer entity generally does not provide reinsurance capacity but rather facilitates transactional business. Transformer vehicles generally are designed to retain minimal net risk by pairing transactions with counterparties through various risk-transfer agreements, including reinsurance and derivative contracts. As such, careful risk transformation takes place to ensure only a minimal amount of underwriting, basis or credit risk remains in the transactional structure. Transformer vehicles generally are set up to create bankruptcy remoteness to the sponsor in the event of insolvency at the transformer vehicle.

Exhibit 1
Simplified Transformer Diagram



Additional Information

Criteria:
Rating New Company Formations

Assessing the Tail Risk of Sidecars

Rating Sidecars

Rating Protected Cell Companies

Rating Natural Catastrophe Bonds

Best's Idealized Default Rates of Insurers

Insurance Holding Company and Debt Ratings

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Generally, the risk transformation process can be accomplished through the use of a reinsurer entity, special-purpose vehicle (SPV) or segregated cell in a protected cell company (PCC). In most cases, the transformer vehicle acts as 1) an intermediary between a credit derivative counterparty – usually the protection seller or the protection buyer – and an insurance or reinsurance entity; and 2) an insurer or reinsurer with enough capital to meet its reinsurance/contract obligations.

Exhibit 1 presents a simplified diagram of the transformation process.

Transactions Based on a Transformer Vehicle

Transactions requiring the use of a transformer vehicle may include the following:

• Special-purpose insurers warehouse insurance risk and have sufficient assets to meet contractual obligations to the limit of exposure through various forms of capital arrangement, including use of collateral, reinsurance programs, debt instruments and other contingent assets.

• Exchange-traded credit derivative contracts covering insurance peak exposures are translated into insurable interest that will provide payment if a qualifying event occurs. The transformer vehicle acts as a conduit between the entity warehousing the credit derivative product – in this case the protection buyer – and the protection seller, a reinsurance company.

• A transformer acting as reinsurer for investment-linked insurance policies receives premium from the protection buyer for protection against all losses associated with the policy. Simultaneously, the transformer cedes the insurance risk – both mortality and lapse – through a retrocession agreement with a retrocessionaire, and enters a derivative contract with another counterparty to hedge the capital market exposure, i.e., financial risk associated with the policy.

The Rating Process

The uniqueness of reinsurance/insurance transformer vehicles requires additional analysis when evaluating a transformer vehicle's capital to fund its exposure during the rating process. Some of the distinguishing features of reinsurance/insurance transformers compared with traditional reinsurance include: the type of product warehoused in the transformer vehicles; the intended short life span of the transformers; and in addition to reinsurance, the use of other capital-market instruments (i.e., swaps, letters of credit, financial guarantees, contingent arrangements, derivative contracts, etc.) as mechanisms to cede all or a portion of the exposures contained in these vehicles.

This rating criteria applies to various types of insurers/reinsurers that are licensed or designated as special-purpose insurers/vehicles in various regulatory jurisdictions and that primarily assume and cede insurance exposures funded by various capital-market instruments.

Key Rating Factors/Considerations

In general, A.M. Best's transformer vehicle rating criteria rely upon data and information provided by the sponsoring entity and other independent third parties. Items reviewed, evaluated or monitored during the rating process include:

• Documents associated with the formation of the SPV or the PCC;

• Legal opinions associated with the formation of the SPV or PCC (particularly any opinions associated with the protection of the capital of each protected cell from depletion by other protected cells);

• Business plan outlining the nature of the risks covered and operating performance;

• The regulatory regime and domicile of the transformer vehicle;

• Structural regulatory, legal and all third-party-related agreements;

• Reinsurance agreements, derivative contracts and collateral agreements;

• Capital, operating guidelines and funding structure of the transformer;

• Risk analysis – exceedance probability curves, attachment and exhaustion probabilities, conditional tail expected amount, modeling of premiums and loss ratios, and cash-flow models;

• Reserves – the procedures for the establishment and liquidation (run-off) of reserves;

• Service providers, i.e., loss-reserve specialist, calculation agent, peril modeler, administrator, auditor and trustee (if applicable);

• Financial reports, i.e., actuarial reports; financial risk position reports (mark-to-market on derivative positions) if applicable, independent auditor's reports and statutory financial statements; and

• Credit risk management or mitigation, if applicable.

Risk Analysis

A key aspect of the rating process is the level of risk analysis performed pursuant to the transaction. A.M. Best requires a complete risk analysis report associated with the risks in the transformer vehicle. The report should at least include, where applicable, key assumptions and sensitivity results of modeled losses such as loss exceedance curves, attachment and exhaustion probabilities, projected premiums and loss ratios, and other significant risk contributors. To assist in this evaluation, A.M. Best may engage third-party actuarial consultants or peril modelers.

A.M. Best's evaluation of the modeling of the risks in the transformer may consider some or all of the following:

• Independent, third-party modeling or assessment of the modeling process by third parties (for example, peril modelers or actuarial firms) with appropriate expertise and track record;

• Modeling inputs and parameters, model assumptions, inclusion of secondary uncertainty, loss amplification/demand surge, and inclusion of secondary perils following natural perils event;

• Exposure data – how it is captured, quality control, exposure growth, documentation and peer review of information; and

• Treatment afforded to unusual features, for example, annual aggregate deductible, inuring reinsurance, perils or treaties that historically have not been or cannot be modeled.

In conducting its risk assessment, A.M. Best will determine the net capital-at-risk (i.e., required capital to fund net exposures) to be retained by the transformer vehicle. The level or amount of net capital-at-risk will vary depending on a variety of factors, including:

• The type of underlying insurance product being underwritten;

• The characteristics of the underlying risks (i.e., maximum exposure, policy limits, aggregate losses, probable maximum loss, full limit losses, etc.);

• The loss/claim exposure curve that reflects the potential for incurring losses, claim or payment obligations at specific confidence intervals;

• Sensitivities to changes in the various underlying risk parameters that potentially may increase the estimated baseline capital-at-risk at various confidence interval levels; and

• The level/portion of risks being ceded to counterparties, including the impact of credit mitigators incorporated in the risk transfer process which may reduce the net capital-at-risk.

The calculated net capital-at-risk amount then is compared with the transformer's available capital. This ratio, (i.e., calculated net capital-at-risk to available capital) will form the basis (i.e., prime consideration) for determining the appropriate rating to be assigned to the transformer vehicle. Because of the unique characteristics inherent in a transformer vehicle, the adequacy of capital and its ability to cover its retained risks is paramount to assigning/determining a transformer's rating.

Counterparty Assessment

A.M. Best will evaluate both the instrument and the mechanism employed by the transformer to transfer the insurance risk to the various counterparties, including where the exposure of the transformer is not fully funded, as part of its risk analysis process. The transfer mechanism may involve the use of contingent instruments including, but not limited to, reinsurance arrangements, letters of credit and various swaps agreements. The evaluation of the transfer mechanism will consider the credit quality of the counterparty and/or the financial instrument over the lifetime of the ceded exposures. Where the transformer cedes its unfunded exposures to reinsurers not rated by A.M. Best, third-party ratings assigned to the counterparties and/or financial instruments by other Nationally Recognized Statistical Rating Organizations may be used by A.M. Best to gauge the counterparty's creditworthiness and to review the quality of the available collateral and other credit mitigation measures as part of its counterparty assessment. For unrated entities/instruments, A.M. Best will undertake additional analysis to assess their impact on the capital-at-risk amounts. A.M. Best also will assess whether the transformer has enough capital to guard against additional risks, including but not limited to liquidity risk, market risk, reinvestment risk, operational risk and legal risk posed by the type of contingent instrument used.

Capital Adequacy

The rating assigned to a transformer vehicle considers and reflects the amount of capital available to cover any underwriting risk, basis risk, credit risk or tail risk retained by the transformer.

The net capital-at-risk amount, along with other qualitative considerations discussed in the previous sections – including but not limited to operating performance and business profile –forms the basis for assigning a rating to the transformer vehicle. The assigned rating is largely based upon having enough capital to cover loss obligations at a certain confidence level. For example, barring any other requirements, a transformer vehicle assigned an ICR of "a-" is expected to meet its financial obligations over a one-year risk period at a confidence level of 99.73%. This means that over a one-year period, the transformer vehicle must hold enough capital such that the probability of exhausting that capital is no higher than 0.27% (100%-99.73%). The confidence level of 99.73% is equivalent to a Best's one-year default rate of 0.27% (Best's Idealized Default Rate of Insurers). See **Exhibit 2** for a comparison of Best's one-year default rates, corresponding ICRs and confidence levels.

Rating Assigned

Issuer Credit Rating/Financial Strength Rating:

The type of ratings that can be assigned to a transformer are: 1) Best's Long-Term Issuer Credit Rating (ICR), which is an independent opinion of an entity's ability to meet its senior financial obligations; and 2) if applicable, Best's Financial Strength Rating (FSR), which is an independent opinion of an

Exhibit 2
Best's Idealized Default Rates of Insurers*
On the credit market scale.
(%)

Issuer Credit Rating (ICR)	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-
1-Year Default Rate	0.03	0.06	0.11	0.16	0.21	0.23	0.27	0.67	1.20	2.30
Corresponding Confidence Level	99.97	99.94	99.89	99.84	99.79	99.77	99.73	99.33	98.80	97.70

* Derived from Best's Idealized Default Matrix published Dec. 5, 2007.
Source: A.M. Best Co.

insurer's financial strength and ability to meet its ongoing insurance policy and contract obligations. See **Exhibit 3**, which shows A.M. Best's conversion/relationship of ICR to FSR.

Exhibit 3
Translation of ICR on Credit Market Scale to FSR

ICR - Credit Market Scale	FSR
aaa aa+	A++
aa aa-	A+
a+ a	A
a-	A-

ICR - Credit Market Scale	FSR
bbb+ bbb	B++
bbb-	B+
bb+ bb	B
bb-	B-

Debt Rating:
If a transformer entity issues public debt, A.M. Best may assign a rating specific to its view of the credit quality of the debt issue. Ratings of debt issued by the transformer will be notched from the published ICR of the transformer vehicle. The degree of subordination of the debt issue to the most senior creditors is reflected in the rating of the debt. For transformer entities issuing debt, A.M. Best's rating criteria *Insurance Holding Company and Debt Ratings* provides useful information.

For transformer vehicles utilizing protected cell company structures, it may be helpful to read A.M. Best's rating criteria *Rating Protected Cell Companies* for insight into the rating process.

Surveillance
Surveillance activities conducted by A.M. Best involve the ongoing, periodic monitoring and review of all requested data and information associated with the transformer. As part of the surveillance process, A.M. Best will request a quarterly risk analysis report, given the importance modeling of the risk plays in the rating process. The outcome or results of the review will be used to help determine or assess whether the existing transformer's rating should be changed or affirmed. In addition to the periodic review, an occurrence or notification of a specific covered event may trigger an acceleration of the monitoring/assessment process.

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Methodology

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Insurance-Linked Fund Ratings

An A.M. Best Insurance-Linked Fund Rating (ILFR) is an opinion on an insurance-linked fund's (ILF) average credit quality and vulnerability to losses due to 1) credit defaults in a portfolio constituted primarily of insurance-linked assets, and 2) the inability of the fund to fulfill specific and direct contract obligations associated with insurance-linked assets if such obligations exist.

ILFRs are fundamentally different from issue or issuer ratings because funds generally cannot default on obligations, since they essentially have investors who own shares and who can only participate in losses or gains associated with the funds. An ILFR does not guarantee the performance shareholders of the fund should expect and does not make any statements about the net asset value shareholders should expect or the level of fees charged by a fund's manager.

ILFs can consist of various insurance-linked assets and obligations such as: natural catastrophe bonds, industry loss warranties, extreme mortality bonds, surplus notes, trust-preferred securities, structured settlements (of both the period-certain and life-contingent varieties), ordinary annuities, life settlements, Regulation XXX/AXXX securities, collateralized debt obligations backed by insurance-related risks, and other insurance-linked assets, obligations and structured securities.

Thus far, most ILFs do not invest in multiple asset classes or provide coverage for multiple lines of business in the insurance space. For example, there are currently very few funds A.M. Best is aware of that invest simultaneously in natural catastrophe and mortality risks. This can change in the future, so A.M. Best is presenting the criteria for determining ILFRs for insurance-linked funds regardless of whether they invest in one or multiple insurance risk classes, although more detailed analyses of the evaluation process will be provided when such funds that invest in multiple asset classes are plentiful.

Parameters for Determining ILFRs

For most ILFs, A.M. Best's approach in determining ILFRs begins with determining the following parameters for the funds' holdings: 1) the probability of first dollar of loss, 2) fair value and 3) the term to maturity (see page 4 for definition).

Default/Attachment Probability Used

For certain risks in the insurance-linked universe, the probability of the first dollar of loss is generally referred to as the "attachment probability" attributed to an exposure. Catastrophe risks, for example, can be assigned attachment probabilities that directly reflect the probability of the first dollar of loss. Attachment probabilities also can be assigned to risks associated with other property/casualty lines of business, collateralized reinsurance and mortality/morbidity risks, as well. Another example is that some extreme mortality risks are modeled to determine the probability of exceeding specific mortality thresholds. For other risks in the insurance-linked universe, the probability of first dollar of loss is equivalent to the probability of default associated with rated securities. An example is an asset-backed securities transaction collateralized by structured settlements. Those securities are rated normally, and the assumed default probability for purposes of determining ILFRs would be the default rate that corresponds to the rating and the expected maturity of the securities as found in A.M. Best's Idealized Default Matrix (see **Exhibit 1**).

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The source of information for the default probability or the attachment probability of an individual insurance-linked fund holding depends on the type of holding for which credit risk is being assessed. Below are described the various broad risk categories and the source of the probability of attachment or default for each category:

1. *Obligation With Credit Profile Strongly Linked To Insurance Carrier.* If the fund holding is a direct issue of an insurance company or has a credit profile very closely linked to a carrier's financial strength rating, the default probability associated with the carrier will be assigned to the holding. Examples of fund holdings that fall in this category include, but are not limited to, the following: funding agreements; guaranteed investment contracts; life settlements; cash value of policies held by insurance carriers; commission payments by insurance carriers; structured settlements; ordinary annuities; surplus notes; and trust-preferred securities. In these instances, A.M. Best will use the default probability associated

Exhibit 1

Best's Idealized Default Matrix

On the credit market scale.

(%)

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.03	0.03	0.04	0.05	0.06	0.11	0.16	0.21	0.23	0.27	0.67	1.20	2.30	2.81	5.80	7.61	8.51	9.41	10.17
2	0.08	0.11	0.13	0.23	0.32	0.44	0.56	0.67	0.74	0.89	1.96	3.26	5.28	7.30	10.60	14.35	16.84	18.22	19.40
3	0.14	0.20	0.26	0.42	0.58	0.76	0.95	1.13	1.25	1.51	3.18	5.23	8.10	11.46	15.08	20.60	24.46	26.23	27.74
4	0.22	0.31	0.41	0.62	0.84	1.08	1.33	1.58	1.76	2.13	4.35	7.11	10.78	15.33	19.26	26.37	31.41	33.48	35.27
5	0.31	0.45	0.58	0.84	1.10	1.41	1.71	2.02	2.25	2.75	5.46	8.91	13.31	18.90	23.14	31.69	37.74	40.05	42.04
6	0.42	0.60	0.79	1.08	1.37	1.73	2.09	2.46	2.74	3.37	6.51	10.63	15.71	22.19	26.75	36.58	43.48	45.96	48.11
7	0.53	0.77	1.01	1.33	1.64	2.06	2.47	2.88	3.21	3.98	7.51	12.26	17.96	25.22	30.09	41.06	48.67	51.27	53.53
8	0.66	0.96	1.25	1.58	1.92	2.38	2.84	3.31	3.68	4.58	8.45	13.81	20.09	27.98	33.18	45.14	53.34	56.02	58.35
9	0.79	1.15	1.51	1.85	2.20	2.70	3.21	3.72	4.13	5.18	9.34	15.28	22.08	30.51	36.04	48.86	57.53	60.25	62.62
10	0.94	1.36	1.79	2.13	2.48	3.03	3.58	4.13	4.58	5.76	10.18	16.67	23.95	32.80	38.66	52.23	61.27	64.01	66.40
11	1.09	1.58	2.08	2.42	2.76	3.35	3.94	4.53	5.01	6.33	10.96	17.98	25.70	34.87	41.07	55.27	64.58	67.32	69.71
12	1.24	1.81	2.38	2.72	3.05	3.68	4.30	4.92	5.43	6.88	11.69	19.21	27.34	36.74	43.28	58.01	67.50	70.22	72.60
13	1.40	2.05	2.69	3.02	3.35	4.00	4.65	5.31	5.84	7.42	12.36	20.36	28.86	38.40	45.30	60.46	70.05	72.75	75.12
14	1.57	2.29	3.01	3.33	3.64	4.32	5.01	5.69	6.25	7.93	12.99	21.44	30.28	39.89	47.14	62.64	72.25	74.94	77.30
15	1.73	2.53	3.34	3.64	3.94	4.65	5.36	6.06	6.64	8.43	13.57	22.43	31.59	41.20	48.82	64.59	74.13	76.81	79.17
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-

Source: *Best's Idealized Default Matrix*, published Dec. 5, 2007.

Exhibit 2

Best's Idealized Default Rates of Insurers

On the credit market scale.

(%)

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
1	0.03	0.06	0.11	0.16	0.21	0.23	0.27	0.67	1.20	2.30	5.80	7.61	9.41	10.17	11.32	11.98
2	0.11	0.32	0.44	0.56	0.67	0.74	0.89	1.96	3.26	5.28	10.60	14.35	18.22	19.40	21.50	22.75
3	0.20	0.58	0.76	0.95	1.13	1.25	1.51	3.18	5.23	8.10	15.08	20.60	26.23	27.74	30.61	32.40
4	0.31	0.84	1.08	1.33	1.58	1.76	2.13	4.35	7.11	10.78	19.26	26.37	33.48	35.27	38.75	41.01
5	0.45	1.10	1.41	1.71	2.02	2.25	2.75	5.46	8.91	13.31	23.14	31.69	40.05	42.04	45.99	48.67
6	0.60	1.37	1.73	2.09	2.46	2.74	3.37	6.51	10.63	15.71	26.75	36.58	45.96	48.11	52.40	55.45
7	0.77	1.64	2.06	2.47	2.88	3.21	3.98	7.51	12.26	17.96	30.09	41.06	51.27	53.53	58.04	61.43
8	0.96	1.92	2.38	2.84	3.31	3.68	4.58	8.45	13.81	20.09	33.18	45.14	56.02	58.35	62.99	66.67
9	1.15	2.20	2.70	3.21	3.72	4.13	5.18	9.34	15.28	22.08	36.04	48.86	60.25	62.62	67.31	71.24
10	1.36	2.48	3.03	3.58	4.13	4.58	5.76	10.18	16.67	23.95	38.66	52.23	64.01	66.40	71.06	75.21
11	1.58	2.76	3.35	3.94	4.53	5.01	6.33	10.96	17.98	25.70	41.07	55.27	67.32	69.71	74.29	78.63
12	1.81	3.05	3.68	4.30	4.92	5.43	6.88	11.69	19.21	27.34	43.28	58.01	70.22	72.60	77.06	81.56
13	2.05	3.35	4.00	4.65	5.31	5.84	7.42	12.36	20.36	28.86	45.30	60.46	72.75	75.12	79.42	84.05
14	2.29	3.64	4.32	5.01	5.69	6.25	7.93	12.99	21.44	30.28	47.14	62.64	74.94	77.30	81.41	86.16
15	2.53	3.94	4.65	5.36	6.06	6.64	8.43	13.57	22.43	31.59	48.82	64.59	76.81	79.17	83.09	87.94
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-

Source: Derived from *Best's Idealized Default Matrix*, published Dec. 5, 2007.

with the issuing insurance companies in its evaluation of a fund's ILFR. The applicable default probabilities of insurance carriers can be found in Best's Idealized Default Rates of Insurers (see **Exhibit 2**).

2. *Rated Obligation Without a Modeled Attachment Probability.* If the fund holding consists of rated debt without an attachment point or default probability determined by a modeler, A.M. Best will use the corresponding issuer default probability associated with the legal maturity of the debt or the expected maturity (if the obligation is a structured security) as found in **Exhibit 2**, Best's Idealized Default Matrix. A rated asset-backed security collateralized by structured settlements is an example of a rated obligation without an explicit associated attachment probability determined by a modeler.

3. *Rated or Unrated Obligation With Associated Attachment Probability Produced With a Peril Model.* If the fund holding consists of rated or unrated debt with an attachment probability determined by a modeler, A.M. Best will use the attachment probability in its evaluation of the fund's ILFR. Examples of rated obligations with associated attachment probabilities include catastrophe bonds and sidecar debt. Unrated obligations with associated attachment probabilities can include unrated catastrophe bonds, industry loss warranties (ILWs), collateralized reinsurance programs and other reinsurance-linked contracts. A.M. Best will use the attachment probability as calculated by a peril modeler or by a fund manager for fund holdings in this category.

As more insurance-linked asset classes are created, A.M. Best will determine the source of the default or attachment probabilities to be used in its calculation of the ILFR. **Exhibit 3** displays the decision tree for determining default or attachment probabilities based on the nature of the fund holding in question.

Fair Value of Assets and Liabilities

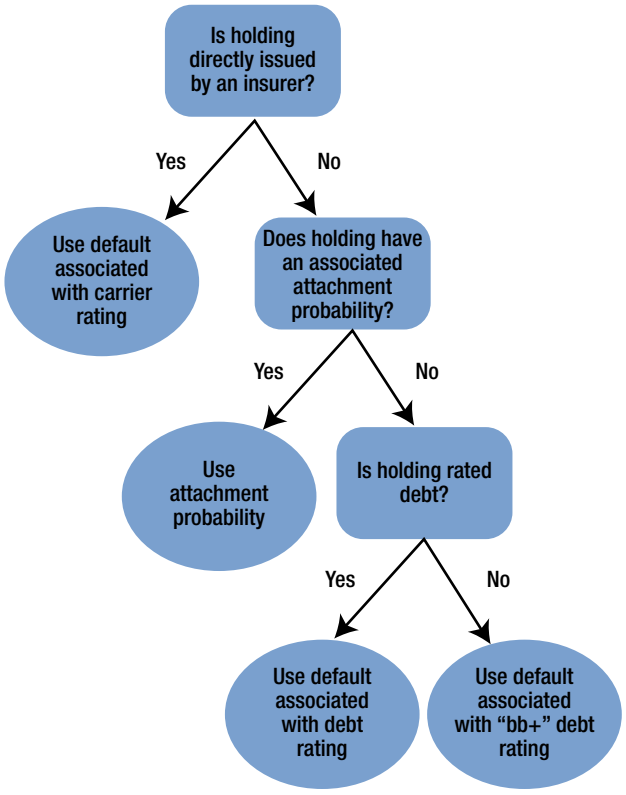
Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at a given time. It is an important input in determining the proportion of an overall fund value attributable to categories of fund holdings.

The availability of valuation methodologies and observable inputs can change depending on whether the investment being valued is new to the marketplace. If the fair value of an instrument is based on models and outputs that are not readily observable, the determination of fair value requires more judgment. Asset managers generally classify fair value in three categories that indicate an increasing level of certainty as to how much can be realized for selling an asset or transferring a liability:

> Level 1 fair values usually are associated with assets and liabilities

Exhibit 3

Determining Default/Attachment Probabilities



that have quoted prices available in an active market. Blue-chip corporate bonds, for example, are likely to be characterized as Level 1 assets.

Level 2 fair values usually are associated with quoted asset and liability prices in markets that are not very active or for which all significant inputs are observable either directly or indirectly.

Level 3 fair values are based on inputs that are unobservable and significant overall to the fair-value measurement. Catastrophe bonds and life settlements, for example, are likely to be characterized as Level 3 assets.

A.M. Best expects that a strong majority of fund holdings linked to insurance contracts or assets will fall in the Level 2 and 3 fair-valuation categories. A.M. Best will accept the fair value assumed by an insurance-linked fund on a given measurement date as long as the basis of the valuation, significant inputs and models are identified, and the fund identifies the level category associated with the asset being evaluated.

Term to Maturity

The term to be applied to individual holdings of an ILF to determine an ILFR depends on the nature of the holdings. Where ILS holdings have a remaining legal maturity less than or equal to five years, A.M. Best uses those terms as the remaining legal maturity of the holdings. For asset-backed securities transactions, A.M. Best assumes that the term is the expected maturity of the securities. For mortality-related assets that are direct issues of insurance companies (such as life settlements and life-contingent structured settlements), the term used in the ILFR calculation is the life expectancy of the individual assets. The assumed term for assets with very long tails such as period-certain structured settlements is the duration calculated using either the discount rate applied by the fund manager in calculating fair value, or the current market rate for the asset being evaluated. As more

Exhibit 4
Types of Assets Expected in Current ILS Funds

Type of Security/Risk	Credit Assessment Used	Primary Source of Credit Assessment	Determination of Proportion of Entire Fund for Risk Allocation	Term to Maturity
• Surplus Notes/Trust Preferred Securities • Funding Agreements • Guaranteed Investment Contracts • Insurance Commissions • Traditional Premium Finance Loans Backed by Life Insurance Cash Value & Other Assets	Insurer default probability or default associated with issue rating	A.M. Best	Fair value or face value	Legal maturity
• Structured Settlements • Ordinary Annuities	Insurer default probability	A.M. Best	Fair value	Life expectancy for life-contingent annuity; duration for period-certain annuity
• Life Settlements	Insurer default probability and inability to fulfill contractual obligation of paying sufficient premiums to keep policies in force.	A.M. Best as determined by criteria and proprietary model	Fair value	Life expectancy
• Industry Loss Warranties & Other Derivative Instruments • Collateralized Reinsurance • Natural Catastrophe Bonds • Extreme Mortality Bonds	Modeled attachment probability	Fund manager as determined by use of third-party models or other specified models/ methods	Fair value or collateralized insurance coverage	Legal maturity
• Regulation XXX/AXXX Securitization • Embedded Value Securitization	Insurer default probability or default associated with issue rating	Fund or A.M. Best	Fair value or face value	Expected maturity
• Structured Securities	Default associated with issue rating	Fund	Fair value or face value	Expected maturity

varieties of insurance-linked holdings emerge, A.M. Best will determine the term necessary for use in calculating the ILFR.

Determination of ILFRs for Various Fund Holdings

This section discusses the special nature of certain types of fund assets and how ILFRs of the funds that hold these assets are determined. First, an example is provided of how the ILFR of a bond or note portfolio is evaluated and scored. This is the backdrop for discussing some special features of other types of fund holdings such as life settlements, structured settlements and holdings related to catastrophic events. **Exhibit 4** shows the various types of assets expected in current ILS funds and their characteristics, and it should be used as a general guide for the assumptions in determining ILFRs.

ILFR of Bond/Note Portfolio

In most cases, the fund manager provides the attachment/default probability, legal maturity (or expected maturity for structured securities), rating and fair value for each fund holding. This information is used in determining the fund's overall credit profile. As an example of how A.M. Best approaches the rating of an ILF, assume a fund contains just 3 assets:

1) A surplus note unrated by A.M. Best issued by an insurance carrier with an Issuer Credit Rating (ICR) of "a-", legal maturity of 15 years and fair value of $10 million.

2) A three-year natural catastrophe bond rated "bb+" with cumulative attachment probability of 3.0% over three years and fair value of $5 million.

3) An insurance-related collateralized debt obligation rated "bbb-" by A.M. Best with expected maturity of six years and fair value of $10 million.

Asset 1, the 15-year surplus note, is a direct issue of an insurance carrier, so A.M. Best assumes that its default probability is equal to the default probability of the issuing insurance carrier, which is rated "a-". The default probability of an "a-" carrier is 8.43% as shown in **Exhibit 1** on the 15-year line of the "a-" rating.

For Asset 2, the attachment probability of the 3-year catastrophe bond is 3.0%. In this case, the rating is not relevant as only the attachment probability is needed to determine the aggregate credit profile of the ILF.

For Asset 3, the default probability of the collateralized debt obligation rated "bbb-" with a 6-year expected maturity is 3.37% as shown in **Exhibit 2**, as the intersection between the 6-year line and the "bbb-" column.

Exhibit 5 displays the characteristics of the three assets, as well as the weighted average default/attachment probability and weighted average maturity of the portfolio.

The ILFR for a portfolio of the three assets in **Exhibit 5** before considering qualitative factors can be found in **Exhibit 6**. The Unadjusted Fund Credit Rating (UFCR) for the example is determined by finding the rating that most closely corresponds to a 5.32% weighted average default/attachment probability and a 9-year term or Term Category 3 (5- to 10-year term). Therefore,

Exhibit 5

Example: A Portfolio of Three Assets

	Asset Type	Rating	Portion of Fair Value	Default/ Attachment Probability	Maturity Profile (Years)
Asset #1	Surplus Note	NA	40%	8.43%	15
Asset #2	Rated Catastrophe Bond	NA	20%	3.00%	3
Asset #3	CDO	"bbb-"	40%	3.37%	6
Weighted Average				**5.32%**	**9**

Exhibit 6
Unadjusted Fund Credit Rating Matrix

		Weighted Average Attachment/Default Probability by Rating Level (%)								
Term Category	Maturity	aaa(f)	aa(f)	a(f)	bbb(f)	bb(f)	b(f)	ccc(f)	cc(f)	c(f)
1	<=1yr	0.025	0.050	0.150	0.250	2.250	7.500	10.500	11.500	13.000
2	>1yr, <=5yrs	0.150	0.500	1.000	1.500	8.000	20.000	25.000	30.000	35.000
3	>5yrs, <=10yrs	0.600	1.600	2.750	5.000	21.000	45.000	59.000	63.000	67.000
4	>10yrs, <=15yrs	1.500	3.000	4.500	7.500	28.000	60.000	75.000	80.000	85.000
5	>15yrs, <=20yrs	1.750	3.750	5.500	9.000	32.000	65.000	79.000	83.000	88.000

the UFCR for the portfolio in this example is in the "bbb" range. The ILFR is the UFCR after making qualitative adjustments as discussed later in this document.

Please note that the ratings from "aa(f)" to "ccc(f)" may be enhanced with a modifier of "+" (plus) or "-" (minus) to indicate whether credit quality is near the top or bottom of a category. In this example, the weighted average attachment/default probability of 5.32% is close to the "bbb(f)" Category 3 threshold of 5.00%, but much less than the "bb(f)" Category 3 threshold of 21.00% in **Exhibit 6**. It would be reasonable to assign an UFCR of "bbb-(f)" to the fund in this instance because of the presence of the speculative catastrophe bond, which can default quickly with no warning given the binary nature of catastrophe risk – it either occurs or it does not.

ILFR of Life Settlement Portfolio

The ILFR for life settlement funds presents some special challenges because it considers the aggregate credit profile of the funds as well as the adequacy of the reserve fund and liquidity facility levels to keep the insurance policies in force. The criteria *Life Settlement Securitization* explains the basics of the life settlement asset class and A.M. Best's views on the mortality estimates by medical underwriters, which play an integral part in the analysis of life settlement pools.

The determination of an ILFR for a life settlement fund involves a four-step process

a) *Calculating the Aggregate Credit Profile.* Calculating the general credit profile of the fund based on the insurer credit rating and the life expectancy for each life settlement.

b) *Simulating the Probability of a Premium Shortfall Without Carrier Defaults.* Determining, through simulation, the probability of not being able to make all premium payments to keep all policies in force based on the aggregate life expectancy of the fund, with insurance carrier defaults turned off in the simulation.

c) *Simulating Probability of Premium Shortfall With Carrier Defaults and No Recoveries.* Determining, through simulation, the probability of not being able to make all premium payments to keep all policies in force based on the aggregate life expectancy of the fund. In this simulation, defaults are turned on, recoveries after defaults are set to zero, and premiums cease for life settlements backed by defaulted carriers.

d) *Selecting the Worst Scenario.* Determing the UFCR based on the highest probability of default or lowest credit profile calculated in steps a to c.

Calculating the Aggregate Credit Profile

Based on the assumptions about the efficacy of the underwriting of life settlements as described in the criteria *Life Settlement Securitization*, A.M. Best will determine the life expectancy for each life in the fund. As described in the criteria, the life expectancy is the time it takes for approximately 50% of the death benefits to be realized for any given life when mortality is applied on a probabilistic

basis. Given life expectancy, death benefit and insurance carrier rating associated with each life settlement, A.M. Best constructs the weighted average portfolio credit quality. As an example, assume a portfolio of five life settlements with the characteristics as shown in **Exhibit 7**.

Exhibit 7
Example: Life Settlements

(1) Life Settlement	(2) Insurance Carrier	(3) Carrier Credit Rating	(4) Death Benefit (USD Millions)	(5) Life Expectancy (Years)	(6) Carrier Default Associated With Life Expectancy
#1	Carrier #1	aa	5	7	2.06%
#2	Carrier #2	a+	3	6	2.46%
#3	Carrier #3	a	4	10	4.58%
#4	Carrier #4	a	1	5	2.25%
#5	Carrier #5	a-	2	10	5.76%
Weighted Average				**8**	**3.32%**

Column 5 in the exhibit represents the life expectancy based on the parameters such as mortality rating and the mortality rates associated with each life as described in *Life Settlement Securitization.* Column 6 in **Exhibit 7**, the carrier default, is derived from **Exhibit 1**. For example, Life Settlement #1, with a life expectancy of seven years and a carrier rating of "aa", has an associated default probability of 2.06%, as can be found in **Exhibit 1** where the 7-year row and the "aa" column intersect. The weighted average carrier default for the portfolio in this example is calculated to be approximately 3.3%.

Probability of Premium Shortfall With No Carrier Defaults

The portfolio of life settlements is simulated to observe the likelihood of experiencing any shortfall in cash necessary to pay premiums on all the life settlements when due. A.M. Best assumes that carrier defaults do not apply in this scenario. The simulation for this scenario is as described in *Life Settlement Securitization*. In summary, A.M. Best applies the mortality ratings issued by medical underwriters to the mortality rate assumed for each life in the life settlement pool. As individuals die, death benefits are collected and premium payments cease. Premiums for each life continue as long as the individual backed by the life settlement is alive.

In the simulation process, A.M. Best counts how many times there is a shortfall in required premiums at a term equivalent to the aggregate life expectancy of the portfolio of life settlements. For example, in 1,000 simulations, it may emerge that within eight years (which is approximately the portfolio life expectancy calculated in the example), there are 50 times in which the net cash generated by the transaction is insufficient to pay premiums on all the life settlements. This translates to a failure rate of 5% (50/1,000). Thus, there is a 5% probability of missing any premium payments because of 1) insufficient mortalities or 2) inadequate premium reserves.

Probability of Premium Shortfall With Carrier Defaults

As in the previous section, the portfolio of life settlements is simulated to determine the likelihood of experiencing any shortfall in cash necessary to pay premiums on all the life settlements when due. For this calculation, however, A.M. Best assumes that carrier defaults apply and that there are no recoveries on death benefits after carrier defaults. In addition, once a carrier defaults, A.M. Best assumes that the premium associated with the life settlement backed by the carrier no longer is paid. Once again, the simulation for this analysis is as described in *Life Settlement Securitization*.

In the simulation process, A.M. Best counts how many times there is a shortfall in premiums due to insufficient mortality events, insufficient premium reserves or default of insurance carriers. If there are 55 such shortfalls in 1,000 simulations, this amounts to a 5.5% failure rate. Thus, the probability of missing any premium payments because of 1) insufficient mortalities, 2) inadequate premium reserves or 3) default of insurance carriers is 5.5%.

Selecting the Highest Failure Rate

A.M. Best will select the highest failure or default rate tabulated in the three scenarios outlined above. In the example used here, the highest failure or default rate is 5.50% over eight years. Absent

any stresses or other considerations in the rating process, this would amount to an Unadjusted Fund Credit Rating in the vicinity of "bbb(f)" as determined by the table in **Exhibit 6**.

Given A.M. Best's experience with life settlement portfolios, the expected default rate or failure rate from highest to lowest would be in the following order for most portfolios:

a) Probability of any premium shortfall with carrier defaults and no recoveries;

b) Probability of any premium shortfall with no carrier defaults; and

c) Average portfolio default rate calculated using the aggregate credit profile method.

This order of default or failure rate may not hold for all portfolios. For example, consider a case in which a fund holds full premium reserves sufficient to pay all premiums up to the aggregate life expectancy. In this example, the only risk measured at the term equivalent to the portfolio's aggregate life expectancy would be approximately the aggregate credit risk of the portfolio, since the uncertainty of maintaining the policies in force due to insufficient premiums effectively has been removed. Thus item b (which reflects the probability of premium shortfalls with no carrier defaults) in the list above actually may have a lower failure rate profile than the default rate in item c, the aggregate credit risk of the portfolio based on the outlined tabulation methodology.

Because the ILFR for a fund consisting primarily of life settlements generally depends more on the ability to keep policies in force, A.M. Best pays particular attention to 1) the periodicity and level of transfer of fund cash flow to investors, 2) the level of premium reserves given various stress scenarios associated with mortality, 3) the liquidity and credit quality of the premium reserves, 4) any liquidity facility in place and the credit profile of its provider, 5) the extent to which the fund can easily and quickly access the premium reserve or the liquidity facility, 6) the mechanism by which the fund repays any advances from the liquidity facility, and 7) the general fund structure (including any encumbrance of fund assets) and seniority of premium payments required to keep all policies in force relative to paying other expenses incurred by the fund.

A life settlement fund may apply a swap or derivative contract to floor the mortality over a specific period. In this case, A.M. Best may limit the credit rating of the fund to the rating of the swap or derivative counterparty, depending on the level of protection afforded to the fund and the details of the insurance coverage.

ILFR of Structured Settlements

The ILFR of a portfolio of structured settlements is tied to its weighted average default probability. For life-contingent structured settlements, the analysis is similar to the calculation of aggregate credit profile for life settlements. Each structured settlement life expectancy is calculated and its fair value is weighted by the default probability commensurate with the insurance carrier's rating and the life expectancy of the individual covered by the structured settlement. For period-certain structured settlements, the term used in the calculation of the fund's weighted average default probability is the duration of the cash flows. The duration calculation uses the same discount rate applied by the fund manager in determining the fair value of each structured settlement. Given the fair value, the duration and the carrier default probability for each structured settlement, the UFCR can be determined based on **Exhibit 6**.

ILFR of Reinsurance Risk Transfer Portfolios

The ILFR of collateralized reinsurance (including industry loss warranties, sidecars and catastrophe bonds) depends on the attachment probability of the natural catastrophe occurring

and the likelihood that components of the collateral will default. A.M. Best expects the collateral in such transactions to be of the highest level, so it may not contribute much to the credit risk tabulation of the collateralized reinsurance. However, A.M. Best will need information about the collateral and whether there are any swaps involved to maintain its value. The fair value, term and attachment point of the individual holdings in the transaction are used in determining the ILFR for the transaction.

A.M. Best expects the aggregate credit profile of the assets in funds that invest primarily in natural catastrophe risk to be below investment grade for the following reasons: 1) the individual credit profile of the fund components as measured by the first dollar of loss most likely will be below investment grade, and 2) the correlation among fund holdings likely will be high, since diversification is hard to achieve with natural catastrophe risk.

It is important to note that the ILFRs for funds that operate at or near "working layers" with high attachment probabilities may in fact compensate investors for the risks they are bearing, but A.M. Best only uses attachment/default probabilities in its analysis, not expected losses or premiums paid to the funds for undertaking such risks. For natural catastrophe funds, adjunct measures such as loss volatility or premiums compared with expected losses may be more appropriate and useful for investors. In the future, A.M. Best will explore alternative measures of risk for such funds that can complement the aggregate credit quality measure.

Because the results of attachment probability calculations can vary greatly depending on what options are activated in peril models, A.M. Best expects any information it receives about modeled attachment probabilities to include activation of the following options:

- Warm sea-surface temperature condition and storm surge modeling for wind exposures;
- "Fire following" for earthquake exposures;
- Demand surge conditions (which considers the increase in replacement cost); and
- Secondary uncertainties to reflect the volatility around mean loss numbers.

Qualitative Issues

While the Unadjusted ILF Credit Score as shown in **Exhibit 6** is a significant part of the process for determining an ILFR, A.M. Best is not bound by such a score and may exercise broad discretion in the rating by issuing ratings outside of the range suggested by the UFCR. Conditions under which A.M. Best may exercise such discretion include, but are not limited to, the following events or states which may introduce instability in the rating process:

1) Excessive Defaults. Actual fund defaults may exceed the defaults expected over a given period. For example, if a portfolio unrated, 10-year surplus notes is newly issued by carriers with ICRs of "a-", A.M. Best would expect defaults over the next three years to be no more than approximately 3.18%. Therefore, if in the third year the cumulative default is 5%, A.M. Best would be more likely to assign a lower rating than is suggested by the UFCR Matrix.

2) Lumpy Portfolio. The portfolio of fund holdings may exhibit a bimodal rating characteristic with extreme rating dispersions. While the average rating of the fund may be at a specific ILFR level, the distribution of the ratings, if lumpy, can be problematic in the event of a downgrade because of concentrations in extreme regions of the credit rating spectrum.

3) Historical Volatility of the Unadjusted Fund Credit Rating. If the Unadjusted Fund Credit Rating exhibits excessive volatility from period to period, A.M. Best is likely to issue a more conservative ILFR than would have been issued under more stable circumstances.

4) Ramp-Up or Wind-Down Risk. A closed-end fund that is still going through the ramp-up or wind-down process is likely to have big fluctuations in its Unadjusted Fund Credit Rating. A.M. Best will look to the fund guidelines to determine the steady-state investment risks for ramp-ups and to determine the wind-down sequence that fund managers should follow in order to determine the level of conservatism to be applied to the fund's rating.

5) Risk Concentration in Natural Catastrophes. Concentration in insurance-linked investments such as those related to natural catastrophes, which can affect multiple geographic zones, exposes the fund to the possibility of sudden and total loss. This may require more conservatism depending on diversity and dispersion of risks.

6) Currency Risk. Once the functional currency of the fund has been identified, it is up to the fund managers to hedge exposures caused by premiums, collateral and other investments held in other currencies. Substantial unhedged currency exposure may cause A.M. Best to issue a lower ILFR.

7) Hedge Positions. While fund managers can sell protection to insurers or other entities for exposures such as catastrophe risk, they also can buy protection to hedge their own exposures. In determining the effect of the hedge position, A.M. Best expects that the index for the hedge would be the same as the index for the protection sold by the fund. Further, A.M. Best expects to see the extent to which the hedge position correlates negatively with the position being hedged and ultimately, how the hedge reduces the attachment point or risk of such a position. The buying of protection without an underlying position does not improve the credit position of the fund.

8) Counterparty Risk. Any contracts entered with other counterparties may affect the fund's credit profile, depending on the rating of such counterparties and the extent of the protection, hedge or services they are providing to the fund.

Rating/Surveillance Requirements

The range of holdings of ILS funds can be broad. Listed below are some of the criteria that A.M. Best may reference, depending on the specific nature of the assets, when evaluating the risk in a pool of ILS holdings.

Rating Natural Catastrophe Bonds

Gauging the Basis Risk of Catastrophe Bonds

Securitization of Period-Certain and Life-Contingent Structured Settlements

Rating Surplus Note and Insurance Trust-Preferred CDOs

Life Settlement Securitization

Securitization of Annuities

Securitization of Reinsurance Recoverables

Rating Sidecars

Assessing the Tail Risk of Sidecars

Rating Reinsurance/Insurance Transformer Vehicles

Rating Closed-Block Monetizations

Rating Life-Related Premium Financing Loan Securitizations

The generic information requirement that cuts across all ILS fund holdings includes, but is not limited to, the following:

• Fund formation document that clearly outlines investment, liquidation and substitution guidelines;

• All agreements with third parties, including liquidity and reinsurance agreements;

• Par value of each contract/security;

• Fair value of each current contract/security and the identification of the fair value level category;

• Current attachment probability for each security/contract if available;

• Any revised views on attachment probability from peril modelers or fund managers;

• Current rating of each security by all Nationally Recognized Statistical Rating Organizations if available;

• CUSIP number if available;

• Remaining maturity per contract or security;

• Expected maturity per contract or security;

• Servicing fees directly associated with specific fund holdings, if any;

• Changes in operations and investment policies;

• Changes in senior management, board of directors, counterparties, or service providers;

• Mergers and acquisitions;

• Redemption or subscription activities that differ from normal fund procedures; and

• Audit reports.

Specific requirements for mortality-related fund holdings and long-dated assets will include:

• Any current and new assessment of mortality by underwriters (for life settlements and life-contingent structured settlements)

• Report from independent actuary on adequacy of premium optimization, if any, for life settlements

• Discount rates used in determining the fair value of structured settlements, life settlements and other long-dated assets; and

• Identification of base mortality tables used to determine fair value.

The portfolio holdings information should be provided on a quarterly basis, where applicable. A.M. Best also expects a periodic Risk Analysis Report that includes discussions on loss activities or events associated with each contract/security; changes in the fund's current or potential risk profile; stress testing analysis; and asset allocation strategy, which may impact the Fund's credit profile.

Definition of Insurance-Linked Fund Ratings*

aaa(f)

Assigned to funds that in A.M. Best's opinion are exceptional with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

aa(f)

Assigned to funds that in A.M. Best's opinion are very strong with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

a(f)

Assigned to funds that in A.M. Best's opinion are strong with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

bbb(f)

Assigned to funds that in A.M. Best's opinion are adequate with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

bb(f)

Assigned to funds that in A.M. Best's opinion are speculative with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

b(f)

Assigned to funds that in A.M. Best's opinion are very speculative with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

ccc(f), cc(f), c(f)

Assigned to funds that in A.M. Best's opinion are extremely speculative with regard to aggregate credit quality and capacity to fulfill contract obligations directly related to the portfolio holdings.

** Ratings from "aa(f)" to "ccc(f)" may be enhanced with a modifier of "+" (plus) or "-" (minus) to indicate whether credit quality is near the top or bottom of a category.*

Published by A.M. Best Company

Methodology

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Securitization of Annuities

Annuities have been securitized in asset-backed transactions since 1997 by factoring companies that purchase structured settlements from tort claimants. Annuities also have been included in securitizations involving the purchase of life settlements since 2003. In transactions involving life settlements and annuities, the annuities are designed to pay the premiums of the life settlements, thereby taking advantage of the arbitrage associated with the differences between the mortality tables used to price the annuities and the mortality tables used to price the premiums of the life settlements. A.M. Best is seeing more transactions in which investors analyze whether they can benefit from perceived mispricing of annuities when such investors have concluded that insurance companies have used higher mortality rates than are warranted to price annuities.

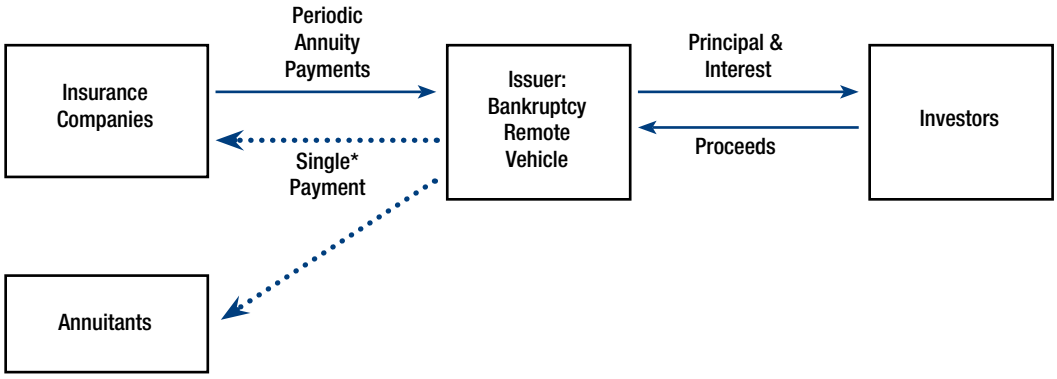
In general, there are two varieties of annuities: a) a period-certain annuity that generates guaranteed periodic payments to the annuitant that can be fixed or can escalate based on a specified compounding rate and/or inflation rate; and b) a life-contingent annuity in which specified payments are made to the annuitant until he or she dies. There also are annuities that combine period-certain and life-contingent features.

The most important risks associated with annuities (no matter whether the annuities arise from structured settlement transactions or from annuity/life insurance arbitrage transactions) are credit risk and mortality risk. This quick reference summarizes how A.M. Best will assess such risks in transactions that include only annuities in their collateral pools although transactions can contain a combination of annuities, life settlements or any other collateral. Readers interested in an analysis of the risks associated with collateral pools containing life settlements should read this document in conjunction with the A.M. Best criteria report *Life Settlement Securitization,* published March 1, 2012.

Simplified Transaction Structure

Securitization of annuity cash flows can be achieved through the use of bankruptcy-remote special purpose vehicles (SPVs). The issuer of securities, the SPV, raises funds from investors that are used to purchase annuity cash flows from insurance companies or annuitants. If these are period-certain annuities, the issuer receives the periodic

Simplified Transaction Diagram



* For certain transactions such as structured settlements, the single payment effectively goes to annuitants. For other types of transactions, the single payment goes to the insurance companies.

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annuity payments from the insurance companies for a fixed period of time. If the annuities are life-contingent, the issuer receives the periodic annuity payments from the insurance companies until the annuitants die. The cash flows received by the issuer are used primarily to service the principal and interest payments due the investors.

Key Assessment Factors

• The source of the annuities (to help determine the appropriate mortality tables) – if the annuities are from structured settlements, the annuity table may be derived from structured settlement mortality experience.

• The availability of life expectancies from at least one medical examiner for each life in the annuity pool. (See the criteria report *Life Settlement Securitization*, published March 1, 2012, for the standards for evaluating medical examiners.)

• The assumed default and recovery rates for the companies that issued the annuities.

• The assumed default correlations of the insurance companies.

• The definition of what constitutes a default of the payment to investors; default could be defined as an untimely return of principal to investors, an untimely return of principal and interest, or in other ways.

• The number of insurance companies that issued the annuities in the collateral pool; a high concentration of insurance companies generally is not desirable.

• The underwriting guidelines for purchasing the annuities on the lives in the collateral pool.

• The number of lives in the pool (300 recommended) and the granularity of the annuity cash flows in the transaction; the smaller the annuity payments, the better the exposure data gathered for the risk model.

• If the annuities are associated with structured settlements, the observation of all transfer laws in the state in which the annuitant lives.

• Whether the annuity cash flows could be encumbered through bankruptcy of the annuitant or any liens on such cash flows.

• Whether the annuity cash flows may be challenged by a spouse, relatives or dependents of the annuitant.

• Whether there has been screening for annuitants such as minors or adults who cannot legally enter contracts.

• The procedures for periodically confirming the annuitant's survival for life-contingent annuity cash flows;

• The existence of legal documents produced for securitizations such as an indenture, true sale opinion and other documents.

• The legal and tax issues associated with the annuities, i.e., are the annuities pursuant to a court order? Are there any insurable interest issues associated with the purchase of annuities on the lives in the collateral pool?

Modeling of the Annuity Cash Flows

To model the risks associated with the annuity cash flows, the following data should be provided:

a) For period-certain annuities, the fixed annuity cash flows aggregated by each insurance company in the pool.

b) For life-contingent annuities, the annuity cash flows of each life in the pool with the associated insurance company making the annuity payments; the base mortality table used by the issuer in its analysis; and the mortality ratings and/or life expectancies determined by at least one reputable medical examiner for each life in the pool.

A.M. Best applies the default assumptions (as determined by Best's Idealized Default Rates of Insurers) and recoveries associated with each insurance company in the transaction. A.M. Best also applies the appropriate mortality tables to each life in the transaction (for life-contingent annuities) and in some cases, default correlations. The cash flows associated with each annuity are modeled using the Monte Carlo simulation method, aggregated, and applied to the transaction's waterfall to determine the default probability of the securities backed by the annuities. The rating of the securities is partially determined by correlating the tabulated default to the grid in Best's Idealized Default Matrix.

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Rating Surplus Note and Insurance Trust-Preferred CDOs

Additional Information

2011 Special Report:
Best's Impairment Rate
& Rating Transition Study

Criteria:
Best's Idealized Default Matrix

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The first securitization of surplus notes (SNs) and insurance trust preferreds (ITPs) occurred in 2002. This insurance collateralized debt obligation (known as SN/ITP CDO) has opened up a new funding source for small to medium-sized insurance companies that find it cost prohibitive to issue capital on their own or whose Financial Strength Ratings (FSRs) are not favorable enough for such independent capital-raising efforts. Surplus notes are attractive to issuers for two primary reasons: Interest is tax deductible, and they generally increase surplus. Insurance trust preferreds are attractive to issuers because dividends paid are tax deductible and they receive some level of equity credit. At the time of this writing, A.M. Best has rated eight transactions that were mostly collateralized by insurance company debt. In one of these transactions, there was a substantial amount of bank debt in the collateral, although the majority of the collateral consisted of insurance company debt. This methodology outlines A.M. Best's rating process for rating CDOs backed mostly by insurance company debt, although the collateral in the transactions may contain bank debt.

General Transaction Structure and Features

The notes in SN/ITP CDOs typically are co-issued by two standalone, special-purpose vehicles (SPVs) – one incorporated in the United States and the other incorporated in a tax-friendly jurisdiction such as the Cayman Islands. The SPVs have no prior operating experience and are limited to acquiring the portfolio of assets, issuing the notes and engaging in certain related activities.

The notes issued by the typical SN/ITP CDO generally consist of rated, 30-year senior and mezzanine notes and an unrated equity tranche. Proceeds from the rated and unrated securities generally are used to purchase the transaction's collateral, which consists of surplus notes, insurance trust preferreds and a small number of senior notes. In the transactions rated by A.M. Best, the collateral not only includes newly issued surplus notes and insurance trust preferreds maturing in 30 years, but also long-dated senior notes and insurance obligations purchased in the secondary markets. For simplicity, we will only refer to the collateral as consisting of newly issued surplus notes and insurance trust preferreds, unless otherwise stated.

Interest and principal payments to noteholders in a SN/ITP CDO are derived primarily from the collateral's interest and principal proceeds. To avoid an event of default, the senior notes generally must receive interest and principal when due. Interest on the mezzanine notes, however, may be capitalized if there are insufficient funds to pay the amount due. The equity investors generally are entitled to receive all excess funds. In some structures, the equity investors have a cap on their returns for a specified period.

The collateral in a SN/ITP CDO generally consists of about 35 or more newly issued surplus notes and insurance trust preferreds

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that are non-amortizing and due in 30 years. Other types of insurance-related collateral, such as surplus notes and insurance trust preferreds purchased in the secondary markets, generally have maturities less than 30 years, but they are relatively small compared with the newly issued surplus note and insurance trust-preferred balances.

Description of Trust-Preferred Securities and Surplus Notes

The insurance companies that issue the surplus notes and insurance trust preferreds generally are small to medium-sized insurers domiciled in the United States with a minimum A.M. Best Issuer Credit Rating of "bbb-". The size of the collateral pools normally ranges from $300 million to $500 million. A majority of the collateral consists of primary issuances, with the remainder derived from the secondary market. To date, nearly all the collateral pools for the SN/ITP CDOs rated by A.M. Best have been static pools, thereby lessening the importance of the collateral manager. Below are details of the basic features of surplus notes and insurance trust preferreds, which are illustrated in Exhibit 1.

Surplus Notes

Surplus notes are issued directly by a mutual insurance company. As unsecured obligations, they are subordinate in right of payment to all senior indebtedness and policy claims of the issuer. Typically, no restrictions limit the issuer from incurring additional senior indebtedness. In addition, each payment of interest and principal under a surplus note is subject to the approval of the appropriate state regulator. Any failure by the issuer to make a payment of principal or interest due to a disapproval of such payment by a state regulator generally does not constitute an event of default under the surplus note's legal documents.

Insurance Trust Preferreds

The insurance trust preferred issuer normally is organized as a statutory business trust whose insurance holding company owns all of its beneficial interest. The insurance holding company issues a junior subordinated debenture to the trust that, in turn, issues an insurance trust preferred (i.e. long-term subordinated debt) to the SPVs used in the SN/ITP CDO. The terms and conditions under the junior subordinated debenture mirror those under the insurance trust preferred; thus, the trust acts as a "pass-through" structure for the interest and principal payments. The insurance holding company guarantees that payments made to the statutory trust under the subordinated debenture will be paid to the SPV, but it does not guarantee payments will be made to the statutory business trust.

The payments received from the parent holding company under the junior subordinated debenture are the only source of funds for payments on the insurance trust-preferred security. The junior subordinated debenture is a subordinated debt instrument of the parent holding company. No restrictions limit the holding company from incurring additional senior indebtedness. The holding company is allowed to defer interest payments under the terms of the junior subordinated debenture for a total period of five years. The deferral of interest payments to the junior subordinated debenture will result in the deferral of interest payments to the insurance trust preferred, thus decreasing the amount of cash available to the SPV to make payments on the notes.

Insurer Credit Risk

A.M. Best believes that general corporate-bond default statistics are inappropriate for assessing insurer credit risks because of the unique regulatory and accounting environment in which insurers operate, and because relatively few insurers issue public debt. As such, there are very few data points available to perform a meaningful insurance default study based on the generally accepted definition of default: missed interest or principal payments on financial obligations or a bankruptcy filing. Therefore, "financial impairment" is a more measurable indication of financial duress for insurance companies.

A.M. Best designates a company as financially impaired upon the first official regulatory action taken by a state insurance department. Such actions include involuntary liquidations because of insolvency, as well as other regulatory processes such as supervision, rehabilitation, receivership,

conservatorship, a cease-and-desist order, suspension, license revocation, administrative order or any other action that restricts an insurance company's freedom to conduct its insurance business as normal. Companies that enter voluntary liquidation and are not under financial duress at that time are not counted as financially impaired.

It is important to note that financial impairment of insurance companies often occurs even if the companies have not been declared insolvent. For instance, an impaired company's capital and surplus could have been deemed inadequate to meet risk-based capital requirements, or there might have been regulatory concern regarding its general financial condition. Thus, at any given rating level, more insurers would be impaired, according to the A.M. Best definition, than actually would default on policyholder obligations or, perhaps, on other obligations, such as senior or subordinated debt.

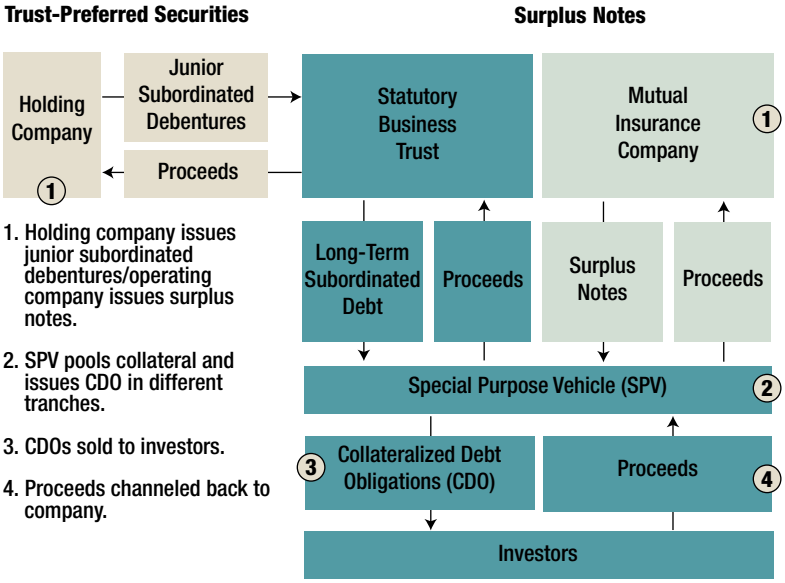
Based on the definition of financial impairment, A.M. Best has conducted and continues to conduct extensive studies to determine the impairment rates of insurance operating companies. These impairment rates can serve as proxies for defaults on financial obligations made by those companies. The latest study at the time of this writing, Best's Impairment Rate and Rating Transition Study – 1977 to 2010, published in May 2011, covers more than 5,000 operating insurance companies that carried a Best's FSR from Dec. 31, 1977, to Dec. 31, 2010. In that period, on average 21.6 companies per year – or 713 operating insurance companies – were designated as financially impaired. Exhibit 2, Best's Cumulative Average Impairment Rates, shows the one-year to 15-year cumulative average impairment rates in the most recent impairment study at the time of this writing. Updates to this study are posted on A.M. Best Co.'s Web site (www.ambest.com).

The reader should be aware that A.M. Best has an equivalent issuer credit rating (ICR) on the credit market scale, familiar to capital market participants, for nearly all FSRs it issues. The translation from FSRs to ICRs is shown in Exhibit 3. As an example, an operating insurance company with an FSR of "A+" would have an ICR of either "aa" or "aa-", depending on the results of the analysis done by the rating analyst for the company in question. For more information on the translation of FSRs to ICRs, please see A.M. Best's Ratings & the Treatment of Debt.

In the context of credit risk of insurers or insurance holding companies issuing debt instruments, ICRs are significant because A.M. Best's idealized default rates for insurers (which are, in part, derived from A.M. Best's impairment studies) are shown on the credit market scale familiar to capital market participants. Exhibit 4 shows the idealized default rates assumed for insurance operating companies on the traditional credit market scale. The default rates on this table are applied to the insurance companies in SN/ITP CDOs.

A.M. Best has FSRs and/or ICRs on nearly all of the insurance holding companies and mutual insurance companies that have issued surplus notes and insurance trust preferreds in SN/ITP CDO transactions in the transactions it has rated so far. A report on all rated insurance companies can be found in Best's Insurance Reports. A.M. Best's methodologies on the quantitative evaluation of insurance companies are found, respectively, in Understanding BCAR

Exhibit 1
Surplus Notes/Trust-Preferred Pool



Source: A.M. Best Co.

for Property/Casualty Insurers and Understanding BCAR for Life & Health Insurers (See www.ambest.com/ratings/methodology).

Protection for the Noteholders

A.M. Best considers the structural protections inherent in notes of SN/ITP CDOs in the rating process. These features include: coverage tests; amortization of notes in the event of defaults/deferrals; a required auction of the collateral beginning in the 10th year; a mandatory diversion of a portion of the cash flow from equity holders to senior and mezzanine noteholders after each failed auction; and the option by equity holders to purchase the entire pool of collateral and/or the defaulted/interest-deferred collateral.

Coverage Tests

Principal and interest coverage tests often are employed as mechanisms for delevering (i.e. reducing the rated note balances) the transaction. The triggers usually are set such that in the event of excessive impairments of the collateral, the payments to senior noteholders are accelerated. The coverage tests, as described in the indenture, are included in A.M. Best's model of the transaction.

Amortization of Notes Due to Defaults/Deferrals

In some structures, if defaults occur in the collateral pool, the cash flow that ordinarily goes to the equity holders is diverted to amortize the most senior notes outstanding, thus delevering the transaction. Such amortizations generally continue on each payment date until the total amount of the diverted cash flow is equal to the principal balance of the defaulted collateral. Other structures depend entirely on their coverage tests and the remedies prescribed in the event of failures of such tests to divert cash flow to the senior noteholders.

The interest on the insurance trust preferreds can be deferred for up to five years. Typically, SN/ITP CDOs consider collateral on which interest is deferred as securities in default, even though such deferrals are permissible and not considered an event of default in the indenture of the deferrable interest debentures. For some structures, in the event of interest deferrals, the cash flow that ordinarily goes to the equity holders is diverted to amortize the most senior notes outstanding until the diverted cash flow is equal to the principal balance of the interest-deferred collateral.

Auction Call Redemption

Commencing on the 10th anniversary, the trustees in the transactions generally are required to periodically solicit bids in an auction of the collateral. The trustee must accept the highest bid if that bid is at least generally equal to the sum of the principal balance of the senior notes, the mezzanine notes, the accrued and unpaid interest on the notes, and other specified expenses. The proceeds from the auction would be used to fully retire the notes, with any excess funds accruing to equity investors.

Exhibit 2

Best's Cumulative Average Impairment Rates

U.S. Life/health and property/casualty data from 1977 to 2010

Rating	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	11-Year	12-Year	13-Year	14-Year	15-Year
A++/A+	0.06%	0.18%	0.33%	0.49%	0.64%	0.86%	1.09%	1.33%	1.63%	1.95%	2.28%	2.71%	3.17%	3.63%	3.97%
A/A-	0.18%	0.55%	1.02%	1.50%	2.04%	2.62%	3.21%	3.86%	4.48%	5.05%	5.64%	6.13%	6.60%	6.99%	7.36%
B++/B+	0.77%	1.80%	2.85%	4.18%	5.59%	6.81%	8.04%	9.02%	9.80%	10.63%	11.46%	12.32%	13.13%	13.99%	14.67%
B/B-	2.13%	4.40%	6.55%	8.38%	10.32%	12.33%	14.22%	15.92%	17.53%	19.05%	20.61%	22.25%	23.75%	25.06%	26.29%
C++/C+	3.73%	6.20%	9.16%	12.15%	14.65%	17.25%	19.63%	22.84%	25.52%	27.51%	29.08%	30.28%	31.42%	32.62%	33.66%
C/C-	5.81%	9.06%	11.80%	14.54%	17.39%	21.24%	24.67%	28.39%	31.26%	33.86%	36.91%	39.19%	41.12%	43.14%	45.32%
D	7.53%	12.63%	17.54%	22.00%	26.21%	30.39%	33.76%	36.59%	39.10%	41.51%	43.92%	45.85%	47.51%	48.97%	50.23%
Secure	0.24%	0.63%	1.09%	1.59%	2.13%	2.68%	3.23%	3.77%	4.28%	4.79%	5.31%	5.83%	6.34%	6.83%	7.24%
Vulnerable	3.75%	6.69%	9.56%	12.19%	14.78%	17.50%	19.94%	22.32%	24.44%	26.35%	28.25%	29.94%	31.47%	32.86%	34.15%
All	**0.68%**	**1.38%**	**2.13%**	**2.89%**	**3.67%**	**4.47%**	**5.25%**	**6.02%**	**6.73%**	**7.42%**	**8.11%**	**8.79%**	**9.44%**	**10.05%**	**10.58%**

Source: Best's Impairment Rate and Rating Transition Study – 1977 to 2010 published May 16, 2011.

For its analysis, A.M. Best assumes the notes will be outstanding for the entire 30-year period.

Equity Investor Refinancing

Under some structures, with the concurrence of a majority of equity investors, after the fifth year through year 10, the equity investors can purchase all of the collateral from the SPVs as long as the proceeds from the sale repay the existing noteholders. The trustee will accept the highest bid submitted as long as the bid repays the existing noteholders. In addition, after year 10, a significant percentage (generally 60% or more) of cash flow will be diverted from the equity investors to prepay the noteholders. These structural features make it unlikely that the CDO facility will remain in place until its scheduled maturity of 30 years. Nonetheless, A.M. Best evaluates a structure with this feature as if it were to remain until the stated maturity date, given that the trustee may not find a buyer for the collateral pool.

Exhibit 3

Translation of Financial Strength Rating to Issuer Credit Rating

FSR (Operating Insurance Co.)	Equivalent ICR on Credit Market Scale (Operating Insurance Co.)
A++	aaa
	aa+
A+	aa
	aa-
A	a+
	a
A-	a-
B++	bbb+
	bbb
B+	bbb-
B	bb+
	bb
B-	bb-
C++	b+
	b
C+	b-

Source: *A.M. Best's Ratings & the Treatment of Debt*, published Oct. 11, 2004.

Interest Rate Hedges

Interest rate risk is present in all structures, given the fixed/floating nature of the collateral and notes. Interest rate hedges and/or interest rate caps normally are used to mitigate this interest-rate mismatch; however, there always is the risk that an unhedged mismatch still may occur. A.M. Best, through sensitivity analysis, evaluates the potential unhedged mismatch and its impact on the structure's cash flows. A.M. Best expects a minimum issuer credit rating of "a" for any swap or hedge counterparty provider. If A.M. Best does not rate the swap or hedge counterparty provider, a long-term unsecured debt rating equivalent is required from another Nationally Recognized Statistical Rating Organization.

Other Features

In some structures, once the equity investors receive a predetermined yield, any excess cash is used to repay the noteholders. Other structures have a feature that prevents cash from being distributed to the equity investors if a collateral security is in default. Distributions to the equity investors will not resume until the principal amount of the defaulted security has been paid to the noteholders via the diverted cash. This cash-diversion feature is considered fully in A.M. Best's model of the transaction.

Modeling and Stress Testing

A.M. Best applies the Monte Carlo simulation process to analyze the cash flows of SN/ITP CDOs. To determine the cash flow of each surplus note and insurance trust-preferred security, A.M. Best requires specific information with regard to the collateral pool, such as issuer name, ICR of the issuing entity, type of security, principal amount, yield, tenor and other information necessary for modeling the transaction. A copy of the most recent draft indenture or offering circular is required to model the features of the SN/ITP CDO.

Applying Assumed Default Rates

For an insurer rated by A.M. Best, the assumed default rate associated with its ICR is used as a proxy for its default probability. A.M. Best assumes that the default probability of all obligations – insurance policy, contract obligations and debt obligations – of a given insurance company are

the same. Therefore, the only distinguishing characteristics of the obligations are the applicable recovery rates, which are covered later in this section.

If an issuer is not rated by A.M. Best but is rated by another rating agency, the long-term unsecured debt rating of that rating agency and the applicable default probability, if known and available, will be applied to the surplus note, insurance trust-preferred security, senior notes or other unsecured debt. Entities with no ratings from any rating agencies, and that have not become impaired in the past, generally will be assigned a rating of "bb+", the highest non-investment grade ICR issued by A.M. Best. Insurance companies and other entities with no ratings from any rating agencies and that have become impaired in the past (and recovered from such impairment) will be assigned an ICR of "b." It should be noted that entities with no ratings from any rating agencies will be downgraded severely in the stress scenarios presented to A.M. Best's credit rating committee.

Correlation

A.M. Best assumes impairments on small to midsize insurance companies are largely uncorrelated. However, in times of economic stress such as was experienced in 2008 and 2009, A.M. Best will increase default probabilities in stress scenarios to reflect the effect of any default correlations that may be inherent in the collateral pool of SN/ITP CDOs.

Recoveries

There are very few historical data available on the recoveries on surplus notes and insurance trust preferreds because of the relatively few insurance companies that have issued such securities. In addition, because the securities generally are not publicly traded, recovery values after impairments cannot be observed easily. In the current SN/ITP CDOs rated by A.M. Best, the recovery percentages have been quite low (if there are any at all), and no consistent recovery pattern is evident. For this reason, A.M. Best will apply zero recoveries to the defaults associated with surplus notes, trust-preferred securities or any other junior debt in the SN/ITP collateral pool.

Monte Carlo Simulation

After assigning default probabilities to surplus notes, insurance trust preferreds and other securities in the transaction, each asset in the collateral pool is modeled indi-

Exhibit 4

Best's Idealized Default Rates of Insurers

On the credit market scale.

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
1	0.03%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	5.80%	7.61%	9.41%	10.17%	11.32%	11.98%
2	0.11%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	10.60%	14.35%	18.22%	19.40%	21.50%	22.75%
3	0.20%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	15.08%	20.60%	26.23%	27.74%	30.61%	32.40%
4	0.31%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	19.26%	26.37%	33.48%	35.27%	38.75%	41.01%
5	0.45%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	23.14%	31.69%	40.05%	42.04%	45.99%	48.67%
6	0.60%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%	6.51%	10.63%	15.71%	26.75%	36.58%	45.96%	48.11%	52.40%	55.45%
7	0.77%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%	7.51%	12.26%	17.96%	30.09%	41.06%	51.27%	53.53%	58.04%	61.43%
8	0.96%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%	8.45%	13.81%	20.09%	33.18%	45.14%	56.02%	58.35%	62.99%	66.67%
9	1.15%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%	9.34%	15.28%	22.08%	36.04%	48.86%	60.25%	62.62%	67.31%	71.24%
10	1.36%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%	10.18%	16.67%	23.95%	38.66%	52.23%	64.01%	66.40%	71.06%	75.21%
11	1.58%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%	10.96%	17.98%	25.70%	41.07%	55.27%	67.32%	69.71%	74.29%	78.63%
12	1.81%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%	11.69%	19.21%	27.34%	43.28%	58.01%	70.22%	72.60%	77.06%	81.56%
13	2.05%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%	12.36%	20.36%	28.86%	45.30%	60.46%	72.75%	75.12%	79.42%	84.05%
14	2.29%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%	12.99%	21.44%	30.28%	47.14%	62.64%	74.94%	77.30%	81.41%	86.16%
15	2.53%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%	13.57%	22.43%	31.59%	48.82%	64.59%	76.81%	79.17%	83.09%	87.94%
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-

Source: Derived from *Best's Idealized Default Matrix*, published Dec. 5, 2007.

vidually using the Monte Carlo simulation technique to determine whether the issuing entities are in default. A.M. Best tests the debt and interest-repaying capability of the collateral pool over a large number of scenarios. Any missed mandatory payment of interest or principal in a given scenario is recorded as a default. The default probability – number of defaults divided by the number of scenarios – is tabulated and compared with Best's Idealized Default Matrix, shown in Exhibit 5.

Stress Scenarios

The most important factor that A.M. Best stresses in the SN/ITP CDO is the default rates of the issuing entities – both insurers and non-insurers. Recoveries are assumed to be zero as discussed earlier. The following is a partial list of some of the stress scenarios applied to the transaction:

- Ratings of issuing entities with negative outlooks or that are on negative watch are downgraded by up to two notches, depending on the economic outlook for the industry of such entities.

- Ratings of entities with ratings below investment grade (or entities with no ratings) are defaulted regardless of whether they are making interest payments on their obligations.

- Marginal default rates applied to the collateral are multiplied by a factor of up to 250% to account for the fact that the default rates represent averages (over several economic cycles) and that peak default rates (particularly for insurers) can be much higher than is represented in the default table applied to the transaction;

Other Rating Considerations

While the calculated default probabilities associated with the securities being rated are a good starting point for evaluation of the credit risk, other qualitative factors also are considered in the rating process such as: the general economic outlook of the insurance and banking industries; changes in subordination levels; the adjacency of very high investment-grade ratings to very low non-investment-grade ratings in the transaction's capital structure; the effect of interest-rate spikes; the effect of unanticipated, incremental defaults after the diminution of the collateral pools due to redemptions; and the possibility that redemptions by highly rated entities will leave lower rated companies in collateral pools.

Exhibit 5

Best's Idealized Default Matrix

On the credit market scale.

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.03%	0.03%	0.04%	0.05%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	2.81%	5.80%	7.61%	8.51%	9.41%	10.17%
2	0.08%	0.11%	0.13%	0.23%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	7.30%	10.60%	14.35%	16.84%	18.22%	19.40%
3	0.14%	0.20%	0.26%	0.42%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	11.46%	15.08%	20.60%	24.46%	26.23%	27.74%
4	0.22%	0.31%	0.41%	0.62%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	15.33%	19.26%	26.37%	31.41%	33.48%	35.27%
5	0.31%	0.45%	0.58%	0.84%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	18.90%	23.14%	31.69%	37.74%	40.05%	42.04%
6	0.42%	0.60%	0.79%	1.08%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%	6.51%	10.63%	15.71%	22.19%	26.75%	36.58%	43.48%	45.96%	48.11%
7	0.53%	0.77%	1.01%	1.33%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%	7.51%	12.26%	17.96%	25.22%	30.09%	41.06%	48.67%	51.27%	53.53%
8	0.66%	0.96%	1.25%	1.58%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%	8.45%	13.81%	20.09%	27.98%	33.18%	45.14%	53.34%	56.02%	58.35%
9	0.79%	1.15%	1.51%	1.85%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%	9.34%	15.28%	22.08%	30.51%	36.04%	48.86%	57.53%	60.25%	62.62%
10	0.94%	1.36%	1.79%	2.13%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%	10.18%	16.67%	23.95%	32.80%	38.66%	52.23%	61.27%	64.01%	66.40%
11	1.09%	1.58%	2.08%	2.42%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%	10.96%	17.98%	25.70%	34.87%	41.07%	55.27%	64.58%	67.32%	69.71%
12	1.24%	1.81%	2.38%	2.72%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%	11.69%	19.21%	27.34%	36.74%	43.28%	58.01%	67.50%	70.22%	72.60%
13	1.40%	2.05%	2.69%	3.02%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%	12.36%	20.36%	28.86%	38.40%	45.30%	60.46%	70.05%	72.75%	75.12%
14	1.57%	2.29%	3.01%	3.33%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%	12.99%	21.44%	30.28%	39.89%	47.14%	62.64%	72.25%	74.94%	77.30%
15	1.73%	2.53%	3.34%	3.64%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%	13.57%	22.43%	31.59%	41.20%	48.82%	64.59%	74.13%	76.81%	79.17%
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-

Source: *Best's Idealized Default Matrix* published Dec. 5, 2007.

Published by A.M. Best Company

Methodology

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Assessing the Tail Risk of Sidecars

A tightening of reinsurance capacity in the property and casualty market can make the use of "sidecars" an attractive alternative to traditional retrocession. A sidecar is a limited-life, special-purpose reinsurance vehicle that generally provides property catastrophe quota-share reinsurance exclusively to its sponsor.

A.M. Best has seen the use of sidecars as a way to offer rated debt to investors seeking exposure to various layers of catastrophic risks.

Sponsors of sidecars generally take reinsurance credit for transferring risks to sidecars. While some sidecars may be capitalized to full aggregate limits, others may not be adequately capitalized to absorb losses that deviate from expectations. When capitalization is inadequate, some of the risk originally assumed to be fully hedged by a sidecar (in the determination of the Best's Financial Strength Rating [Best's FSR] of the sponsor) ultimately may be borne by the sponsor. This risk is referred to as "tail risk."

A.M. Best announced in its June 16, 2006 press release titled *A.M. Best States Position on Sidecars* that it would publish Issuer Credit Ratings and/or debt ratings, where appropriate, on all sidecars and their corresponding debt. In addition, A.M. Best has published a Criteria Report on sidecars, *Rating Sidecars*. This report, *Assessing the Tail Risk of Sidecars*, outlines A.M. Best's procedures in estimating tail risk to ensure that the appropriate reinsurance credit is given to the sponsors of sidecars.

The Analytical Meaning of Tail Risk

Tail risk refers to the risk that the sponsor of the sidecar will have to bear if the sidecar is not sufficiently capitalized to support the quota-share reinsurance. The question that must be asked to determine tail risk is: What capital level is needed such that the probability of exhausting that capital level is within a given rating tolerance? A.M. Best does not apply the Best's Capital Adequacy Ratio (BCAR) analysis to determine this capital level for certain special-purpose reinsurance vehicles and their obligations. Rather, it applies the methodology used in structured finance transactions, in which it sets specific capital levels for each Best's FSR derived from its insurance impairment studies, the latest of which is *Best's Impairment Rate and Rating Transition Study, 1977 to*

Exhibit 2

Best's Cumulative Average Impairment Rates

U.S. Life/health and property/casualty data from 1977 to 2011.

Rating	1-Year	2-Year	3-Year	4-Year	5-Year	6-Year	7-Year	8-Year	9-Year	10-Year	11-Year	12-Year	13-Year	14-Year	15-Year
A++/A+	0.06%	0.18%	0.33%	0.50%	0.65%	0.87%	1.10%	1.35%	1.65%	1.96%	2.28%	2.68%	3.11%	3.53%	3.84%
A/A-	0.17	0.52	0.99	1.46	1.99	2.54	3.11	3.73	4.30	4.86	5.41	5.88	6.32	6.69	7.04
B++/B+	0.79	1.80	2.83	4.13	5.51	6.71	7.90	8.86	9.62	10.42	11.19	12.00	12.76	13.53	14.16
B/B-	2.14	4.42	6.58	8.43	10.38	12.35	14.21	15.81	17.41	18.97	20.58	22.17	23.64	24.95	26.14
C++/C+	3.65	6.10	9.08	12.03	14.50	17.13	19.46	22.66	25.27	27.15	28.62	29.75	30.92	32.26	33.44
C/C-	5.92	9.29	12.30	15.33	18.47	22.24	25.61	29.26	32.09	34.77	37.95	40.38	42.45	44.59	46.85
D	7.56	12.71	17.60	22.05	26.28	30.56	34.15	37.18	39.83	42.37	44.82	46.80	48.52	49.96	51.21
Secure	0.24	0.63	1.07	1.57	2.10	2.64	3.17	3.70	4.19	4.69	5.17	5.67	6.15	6.61	6.98
Vulnerable	3.73	6.68	9.57	12.21	14.81	17.52	19.96	22.33	24.46	26.40	28.32	30.01	31.54	32.97	34.26
All	0.67%	1.36%	2.09%	2.84%	3.61%	4.40%	5.16%	5.91%	6.60%	7.27%	7.94%	8.59%	9.21%	9.80%	10.30%

* Published in *Best's Impairment Rate and Rating Transition Study - 1977 to 2011* (March 26, 2012). Updates availble at *www.ambest.com/research*

Source: A.M. Best Co.

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Criteria:

Rating Sidecars

Understanding Universal BCAR

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2011, published March 26, 2012. **Exhibit 1** displays insurance company impairment rates by Best's FSRs published in the most recent impairment study. This study included more than 5,000 operating U.S. insurance companies with A.M. Best ratings from 1977 to 2011, and 725 incidents of impairment.

Exhibit 2

Assumed One-Year Average Impairment Rates*

A++	A+	A	A-
0.03%	0.06%	0.21%	0.27%

* Derived from *Best's Idealized Default Matrix*.
Source: A.M. Best Co.

Based on the impairment studies (and specifically, the one-year impairment rates), A.M. Best has assumed an annual impairment rate for a range of Best's FSRs as shown in **Exhibit 2**. Absent any stress requirements, the data in this table can be interpreted as the annual probability of an insurance company with a given Best's FSR being impaired. An alternative interpretation, as described earlier, is that a reinsurance special-purpose vehicle that wants to achieve a specific rating (absent any other considerations) must hold enough capital such that the probability of impairing that capital is no higher than the percentage shown in **Exhibit 2** for a given rating. The excess (if any) of the capital as dictated by the capital requirement in **Exhibit 2** over the amount of capital held by the special-purpose reinsurance vehicle (absent any other considerations) is the tail risk of the sidecar. The specific procedures for calculating tail risk will be explained later in this document.

Information Requirements

A.M. Best's assessment of the tail risk of sidecars relies primarily on data and information from the three leading peril modelers (AIR Worldwide Corp., EQECAT Inc. and Risk Management Solutions Inc.) and the representatives of the sidecars. A.M. Best accepts modeled losses from the peril modelers that reflect the most conservative trends in peril activities, and reviews business origination and profitability data modeled by the sidecar's representatives. Some of the items reviewed, evaluated or monitored include the following:

• *Risk Transfer*. Structural, regulatory, legal and all third-party related documents are reviewed by A.M. Best for evidence of true risk transfer to the sidecar.

• *Operational Risks*. The monitoring and record-keeping needed to maintain the legal separation of the sidecar from its sponsor, and for properly allocating premiums and losses, are important elements to A.M. Best.

• *Exceedance Curves*. A.M. Best will review the aggregate and occurrence exceedance curves for the company benefiting from the sidecar before and after the effect of the sidecar. A.M. Best also will request stressed aggregate exceedance curves (based on peril activity rates and total insured values as described later in this document).

• *Data Quality*. The level of data quality (especially granularity of data) is critical to the evaluation of the sidecar, because it could affect the level of stress on the aggregate exceedance curve.

• *Collateralization*. The level and form of the collateral, including investment guidelines, hedges on collateral value (if any) and the conditions surrounding the release of the collateral are critical to the determination of tail risk.

• *Degree of Peril Modeler Involvement*. A.M. Best has become aware that involvement of established peril modelers can range from simply making sure that the sidecar spon-

sors turn on the "right levers" (such as "storm surge," "loss amplification" and "fire following earthquake") on licensed software to actually modeling the peril and verifying data quality. Obviously, A.M. Best will have more confidence in transactions that are independently modeled (with data verification) than in those that are all modeled in-house with little or no input from third-party peril modelers. Transactions that are modeled in-house, under the watchful eyes of independent reinsurance brokers who are experienced users of the various peril models, are viewed positively by A.M. Best.

• *Sidecar Sponsor*. The track record of the sponsor is of utmost importance in determining the viability of the sidecar.

• *Management of Aggregate Risks*. This includes evaluating the correlation of risk layers.

• *Protected Cell Structure Mechanics*. If the sidecar has a protected cell structure, the structure and the limits of each cell are discussed, including whether each cell truly operates independently with its own capital to absorb losses up to predefined limits. Perils covered in individual cell structures are stressed more than those wholly contained in dedicated, special-purpose reinsurance vehicles.

• *Terms and Conditions*. Covenants in the reinsurance or underwriting agreement between the sidecar and its sponsor will help determine whether the interests of the sidecar's investors and sponsors are aligned.

• *Indemnifications and Carve-Outs*. The risks that the sponsoring company retains must be described fully.

• *Business Origination.* This concerns the projected business origination and how monitoring will take place to alert A.M. Best to deviation from the plan.

• *Ongoing Risk Monitoring*. The mechanism by which ongoing risk monitoring will occur, thereby ensuring that A.M. Best can re-evaluate the tail risk of the sidecar periodically or as warranted by catastrophic events, is examined.

• *Reserves.* The procedures for the establishment and liquidation (run-off) of reserves are important to ensure that adverse loss developments can be covered by the sidecar's collateral, even when the sidecar's "risk period" has ended.

• *Key Assumptions on Business Profitability.* Specific assumptions used in modeling premiums and loss ratios earned/experienced by the sidecar are critical, including assumed volatility of such premiums and loss ratios.

• *Profit Distribution*. Details on the circumstances under which profits can be withdrawn from the sidecar for distribution to investors (and the timing of such distributions) must be well defined.

• *Cash Flow Model*. Review of the cash flow model to understand the critical assumptions used in determining the profitability of the sidecar is an important element in the tail risk analysis.

• *Advisers*. Tax, regulatory and legal advisers should be specified.

• *Reporting Requirements*. Quarterly and annual financial statements, procedures for reporting material events and exposure information should be provided for ongoing monitoring.

Base Assumptions for Determining Tail Risk

To calculate the base level of tail risk, A.M. Best makes the following assumptions:

• Business ceded to the sidecar is the same quality as the business normally written by the sidecar's sponsor, and the sponsor bears no unforeseen operational, legal, tax or regulatory risks.

• The data in **Exhibit 2** will be used as the proxy for the annual default probability for a sidecar with a given Best's FSR, despite the fact that impairment is a wider category of financial duress of an insurance company than an event of default on policyholder obligations (as is fully explained in the impairment studies). Specifically, for each Best's FSR, the data in **Exhibit 2** are assumed to represent the annual probability that the sidecar's capital (debt, equity and any retained cash) will be exhausted.

• The base (unstressed) capitalization requirement for the sidecar will depend on the rating of its sponsor – the capitalization should be enough to make sure that the "shadow credit assessment" for the sidecar (solely for the purpose of assessing tail risk) is the same as that of the sponsoring company. For example, if the sponsoring company has a Best's FSR of "A," then the sidecar must be sufficiently capitalized to merit an "A" rating and consequently will be assumed to have an annual default probability of 0.21% (as shown in **Exhibit 2**). If the sidecar's sponsor has a rating of "B++" or lower, the "shadow credit assessment" for the sidecar will be "A-."

Procedures for Calculating Tail Risk

The initial calculation for tail risk should be done at the time of the evaluation of the credit risk of the sidecar and its debt (if any). In addition, the calculation should be performed at the following occasions: 1) annually after the latest tail risk assessment; 2) after any major catastrophic event; 3) after the true business portfolio has been fully formed (if the initial portfolio was based on a projection of business origination); and 4) whenever the Best's FSR of the cedant is being reassessed.

The following are the steps necessary for calculating tail risk:

• **Step 1:** Obtain the aggregate exceedance curve (including all perils and attritional losses, if any) for the business ceded to the sidecar (based on the "near-term" peril models by EQECAT or AIR Worldwide or based on the latest Risk Management Solutions peril model). Storm surge, loss amplification and "fire following earthquake" levers should be switched on for the models.

• **Step 2:** Obtain the shadow rating of the sidecar: the Best's FSR of the cedant.

• **Step 3:** Obtain the annual default probability – the impairment rate found in **Exhibit 2** that is associated with the sidecar's shadow credit assessment (**Step 2**). If the sidecar's sponsor has a rating of "B++" or below, the annual default probability will be 0.27%.

• **Step 4:** Calculate the confidence interval as follows: 100% less the annual default probability from **Step 3**.

• **Step 5:** Obtain the required collateral – the loss associated with the confidence interval from **Step 4**. The data should be from the appropriate confidence interval on the aggregate exceedance curve.

• **Step 6:** Obtain the initial sidecar collateral – the initial debt and equity balance in the sidecar's trust (net of fees).

• **Step 7:** Obtain the retained cash – the amount of cash from operations (net of operating expenses but before subtracting losses) that will be "trapped" in the sidecar. If, for example, distribution of net income is allowed on a quarterly basis, A.M. Best will assume that retained cash will be no more than one-fourth of the year's projected retained cash.

Step 8: Calculate the total collateral as follows: initial sidecar collateral (**Step 6**) + retained cash (**Step 7**).

Step 9: Calculate the tail risk as follows: maximum (0, required collateral [**Step 5**] – total collateral [**Step 8**]).

Stresses on Activity Rate, Insured Value and Retained Cash

The procedures above use the base aggregate exceedance probability curve to determine tail risk. However, A.M. Best will repeat those procedures using additional aggregate exceedance curves based on the following stress scenarios:

• Increased peril activity rates – 5% increase, 10% increase, 15% increase.

• Increased total insured value (TIV) – 5% increase, 10% increase, 15% increase.

• Combination of increased peril activity rate and TIV – 10% increase in peril activity rate and 10% increase in TIV.

If the sponsor of the sidecar and its representatives are unable to provide new aggregate exceedance curves based on the stress scenarios listed above, A.M. Best will stress the losses on the base aggregate exceedance curve at its discretion for each return period.

Another category of stress test is on the retained cash in **Step 7** under the calculation procedures for tail risk. The retained cash will be reduced by up to 50%.

General Conditions Under Which the Stresses Are Applied

The A.M. Best rating committee will have the flexibility to use the stressed exceedance curves to determine the appropriate level of tail risk. The considerations in using the stressed exceedance curves will include, but are not limited to, the following items:

• *Business and Reinsurance Type*. A.M. Best believes that the following risks related to lines of business, reinsurance types and combinations thereof can be difficult to model: terrorism, retrocession, marine/offshore energy, excess and surplus lines, commercial, workers' compensation and "nonpeak" perils. The severity of the stress scenarios will depend partially on whether the business ceded to the sidecar derives a substantial amount of premium from these lines of businesses or reinsurance types.

• *Data Quality*. The quality of the data loaded into the peril model matters greatly. A.M. Best expects the extent to which the latitude and longitude of property locations are supplied to the peril model to be an indication of the level of data quality. Other indicators of data quality could be the extent to which the model has been supplied information related to construction type, roof type, occupancy type, contents, square footage, etc. Excessive use of default values in the models for primary and secondary charac-

teristics of property is a clear indication of poor data quality. The choice of the level of stress to impose on the parameters used in deriving the exceedance curve will depend on A.M. Best's view of the quality of data supplied to the peril model.

• *Certainty of Book of Business*. A.M. Best will apply higher stress factors to those sidecars whose sponsors have not finalized the book of business anticipated to be ceded to their sidecars at the time of the evaluation of the sidecars. If a sidecar's portfolio will be constructed on a "policy attaching" basis, A.M. Best will consider the cedant's historical book of business and its business renewal history. Therefore, if the ceding company has a record of high renewal rates, A.M. Best would be more comfortable with the sidecar's projection of business origination.

• *Deviation from Historical Book of Business*. A.M. Best expects that the sponsors of sidecars will not originate business outside of their areas of expertise. Originations in completely new lines of business will merit higher stresses unless the sponsors demonstrate that they have the staff and risk management processes to properly price and monitor the risks.

• *Stresses Already Applied by the Sidecar Sponsor*. A.M. Best is aware that there are sidecar sponsors that are adept at modeling catastrophic risks and already make adjustments to data supplied to the peril models to produce more conservative results. The extent to which A.M. Best understands these adjustments may cause a reduction of the level of stresses it will apply in the evaluation of tail risk.

Tail Risk and the BCAR

Any tail risk from a sidecar transaction must be incorporated in the assessment of the sponsor's balance sheet strength. This section will outline how this tail risk is reflected in the sponsor's BCAR calculation.

A company's published BCAR is a baseline score that includes a calculation that reduces the sponsor's surplus by the greater of the per-occurrence net Probable Maximum Loss (PML) from a 1-in-100-year hurricane loss or a 1-in-250-year earthquake loss (or actual losses from a recent large event, if larger). This base case sometimes is referred to as "first loss event." A stressed scenario then is performed by superimposing another event (i.e., "second loss event"). This is accomplished by further reducing the sponsor's surplus by the greater of the per-occurrence net PML from a 1-in-100-year hurricane loss or 1-in-100-year earthquake loss.

Illustration

Exhibits 5 and **6** show an example of how the tail risk is incorporated in the sponsor's BCAR calculation. This illustration uses the sample assumptions outlined in **Exhibits 3** and **4**. **Exhibit 3** shows sample information for the sponsor such as surplus amount, gross PML, ceded PML (which in this case represents a 20% quota share) and net PML.

Exhibit 3

Example – Sponsor Information

Based on $600 end-of-year surplus.

PML (Occurrence exceedence probability):	Gross PML	Ceded PML (20% Quota Share)	Net PML
Base case (1st loss event)	$300	$60	$240
Stress case (2nd loss event)	$100	$20	$ 80

Sample information for the sidecar is shown in **Exhibit 4**. It is assumed that the sidecar has a surplus balance of $60 at the end of the year. Using the procedure outlined earlier in this report, the calculated tail risk is $10.

Exhibit 4
Example – Sidecar Information
Based on $60 end-of-year surplus.

Calculation of tail risk:	Required Surplus (Collateral)	Actual Surplus (Collateral), End of Year	Tail Risk
	$70	$60	$10

Exhibit 5 illustrates the baseline BCAR model of the sponsor. Under the Tail Risk Approach (Column A), the sponsor's surplus first is reduced by the $10 tail risk (Row 2). Then, the surplus is reduced further by the net per-occurrence PML of $240 (Row 6), which is the gross PML of $300 (Row 4) less the $60 reinsurance benefit from the sidecar (Row 5). The result is the sponsor's baseline adjusted surplus of $350 (Row 7). This is in contrast with the Traditional BCAR approach (Column B) where no consideration was given to the $10 tail risk, resulting in a baseline BCAR surplus of $360 (Row 7). A.M. Best will adopt the Tail Risk Approach for the published BCAR scores of the sponsors.

Exhibit 5
Sponsor's BCAR Model – Base Case (1st Loss Event)

		Column A: Tail Risk Approach	Column B: Traditional BCAR
1	Surplus, end of year	$600	$600
2	Less: Tail risk	($10)	$0
3	Surplus after tail risk adjustment *(Row 1 – Row 2)*	$590	$600
4	Gross PML	$300	$300
5	Less: 20% quota-share reinsurance	($60)	($60)
6	Net PML *(Row 4 – Row 5)*	$240	$240
7	Adjusted surplus *(Row 3 – Row 6)*	$350	$360

Exhibit 6 illustrates how the tail risk is incorporated in the Stressed BCAR calculation. Under the Modified Tail Risk Approach (Column A), the sponsor's surplus initially is adjusted using the same adjustments from the baseline scenario – namely, the sponsor's surplus first is reduced by the $10 tail risk (Row 2), then the surplus is reduced by the first event net per-occurrence PML of $240 in Row 6 (which equals the gross PML of $300 [Row 4] less the $60 reinsurance benefit from the sidecar [Row 5]).

The sponsor's surplus then is reduced further by the second event net per-occurrence PML of $80, which is the gross PML of $100 (Row 7) less the $20 reinsurance benefit from the sidecar (Row 8). Note, however, that the sidecar no longer can meet this $20 reinsurance obligation for the second loss event because its $60 surplus was used up

Exhibit 6
Sponsor's BCAR Model – Stressed Case (1st and 2nd Loss Events)

		Column A: Modified Tail Risk Approach	Column B: Tail Risk Reclassification	Column C: Stressed BCAR
1	Surplus, end of year	$600		$600
2	Less: Tail risk	($10)	($10)	$0
3	Surplus after tail risk adjustment *(Row 1 – Row 2)*	$590		$600
4	Gross PML (1st loss event)	$300		$300
5	Less: 20% quota-share reinsurance	($60)		($60)
6	Net PML *(Row 4 – Row 5)*	$240		$240
7	Gross PML (2nd loss event)	$100		$100
8	Less: 20% quota-share reinsurance	($20)		($20)
9	Adjustment: Tail risk reclassification	$10	$10	$20
10	Adjusted net PML (*Row 7 – Row 8 + Row 9*)	$90		$100
11	Adjusted surplus (*Row 3 – Row 6 – Row 10*)	$260		$260

in the first event. Therefore, as shown in Row 9, the $20 reinsurance benefit is "charged back" to the second event PML, offset by the $10 tail risk that previously was subtracted from the surplus in Row 2. The resulting adjusted second event PML is $90 (Row 10). This exercise results in a stressed case BCAR surplus of $260 (Row 11).

The above Modified Tail Risk Approach in **Exhibit 6** is simplified in column C, Stressed BCAR. Under the Stressed BCAR approach, the sponsor's surplus is reduced by the first event net per-occurrence PML of $240 (Row 6), which is the gross PML of $300 (Row 4) less the $60 reinsurance benefit from the sidecar (Row 5). Note that the tail risk is not reflected. Surplus then is reduced further by the second event net per-occurrence PML of $80, which is the gross PML of $100 (Row 7) less the $20 reinsurance benefit from the sidecar (Row 8). As noted earlier, the sidecar no longer can meet this $20 reinsurance obligation for the second event because its $60 surplus was used up in the first event. Therefore, a $20 reinsurance credit "charge back" is added to the second event PML (Row 9). This reinsurance credit "charge back" essentially includes the $10 tail risk. The resulting stressed case BCAR surplus is $260 (Row 11), which is the same as the surplus amount determined under the Modified Tail Risk Approach (Column A, Row 11). The only difference between the two methods is the resultant value of the second event net PML, which is reflected more accurately in the Stressed BCAR approach.

Column B of **Exhibit 6** serves as the mechanism by which the Modified Tail Risk Approach is converted to the Stressed BCAR. Also, note that if there were any tail risk remaining after the second event, that remaining balance would show as a reduction to surplus in Row 2 of the Stressed BCAR calculation.

Mechanical Procedures

In summary, A.M. Best will complete the BCAR calculation of the sponsor of a sidecar by using (1) the Tail Risk Approach in **Exhibit 5** (Column A) for the base case, and (2) the Stressed BCAR approach in **Exhibit 6** (Column C) for the stressed case. The specific mechanical steps to accomplish this are as follows:

Base Case

(As illustrated in **Exhibit 6**, Column A, Tail Risk Approach)

1. Determine the amount of the sponsor's surplus.
2. Obtain from A.M. Best's Insurance Linked Securities team the following information applicable to the sidecar:
   A. Amount of surplus, and
   B. Tail risk.
3. Subtract the tail risk from the sponsor's surplus.
4. Reduce the surplus further by the gross PML (i.e., first event PML) less the applicable credit for the effect of quota-share reinsurance from the sidecar.
5. The result is the Baseline BCAR adjusted surplus.
6. Determine the indicated balance sheet strength for the applicable Baseline BCAR surplus.

Stressed Case

(As illustrated in **Exhibit 6**, Column C, Stressed BCAR Approach)

1. Reduce the sponsor's surplus by the first event gross PML less the applicable credit for the effect of quota-share reinsurance from the sidecar.
2. Reduce the surplus further by the second event gross PML
   A. less the applicable credit for the effect of quota-share reinsurance from the sidecar,
   B. if the sidecar's surplus is insufficient to meet its quota-share reinsurance obligations in step 2.A., add a reinsurance credit "charge back." The reinsurance credit "charge back" is the amount of the reinsurance credit anticipated in step 2.A. less the amount of surplus remaining in the sidecar, assuming the first event already occurred.
3. The result is the Stressed Case BCAR adjusted surplus.
4. Evaluate the impact on the indicated balance sheet strength determined in the baseline BCAR model.

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Methodology

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Rating Natural Catastrophe Bonds

A catastrophe bond is a structured debt instrument that transfers risks associated with low-frequency/high-severity events to investors. The insurance industry is increasingly employing catastrophe bonds as an alternative to traditional reinsurance and retrocession contracts. Depending on the risk appetite of investors, specific layers of risks are bundled together and through traditional securitization methods transferred to the capital markets. Since their first appearance in the capital markets in 1997, publicly disclosed catastrophe bonds with ratings increased in annual issue volume from $643 million in 1997 to a peak of $7.33 billion in 2007. The annual issue volume then decreased to $2.73 billion in 2008 and stood at about $4.28 billion at year-end 2011. Total volume of outstanding catastrophe bonds increased from $4.0 billion at year-end 2004 to approximately $12.14 billion at year-end 2011. This methodology discusses some of the factors that A.M. Best considers in rating catastrophe bonds covering earthquakes, hurricanes, windstorms and other weather-related catastrophic events.

Catastrophe Bond Triggers

Catastrophe bonds can be defined by the following four types of triggers underlying the bond structure:

• Indemnity trigger – payouts are based on the actual losses of the sponsor.

• Pure parametric trigger – payouts are triggered by actual reported physical events (e.g., wind speed of hurricane, magnitude of earthquake, location of earthquake, etc.).

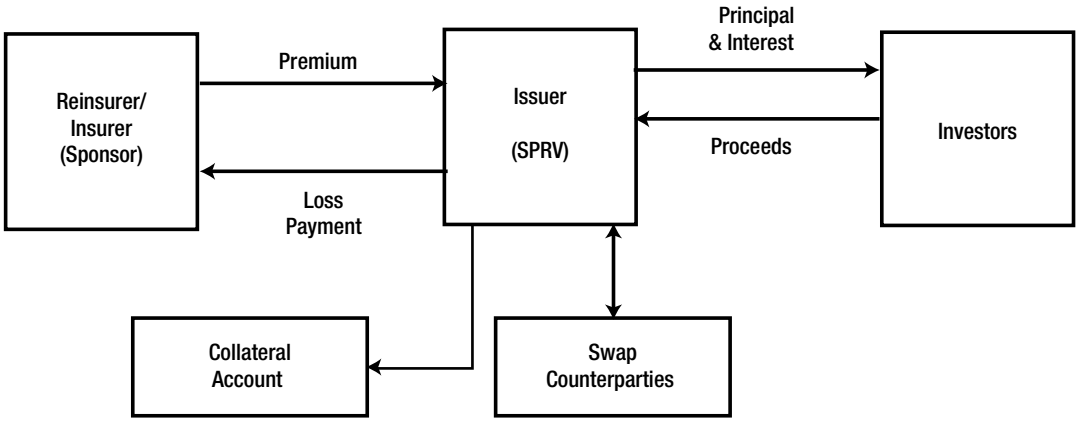
• Industry loss index trigger – payouts are triggered by an estimate of industry losses, such as Property Claim Services loss information from a catastrophic event.

• Modeled loss trigger – payouts are determined by loading event parameters into a predetermined and fixed model to calculate losses.

Rating Assigned

The rating assigned is Best's Debt Rating, which is an opinion as to the issuer's ability to meet its ongoing financial obligations to security holders when due.

Exhibit 1
Securitization Diagram



Additional Information
Criteria:
Catastrophe Analysis in A.M. Best Ratings

Insurance Holding Company and Debt Ratings

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Simplified Catastrophe Bond Structure

Securitization of insurance risk typically is achieved through the use of a special-purpose reinsurance vehicle (SPRV). The insurance or reinsurance company seeking catastrophic risk coverage pays premiums to the SPRV, which is effectively a third-party reinsurer. The SPRV raises funds from investors, which are deposited into a collateral account and invested in high-quality securities. These funds are available to satisfy any catastrophic losses reinsured by the SPRV.

The coupon/interest payment to the investors is derived from (1) the premium paid to the SPRV for the reinsurance coverage and (2) investment income earned on the deposit in the collateral account.

Key Rating Factors

A.M. Best's rating on catastrophe bonds relies primarily on data and information from experts in peril modeling such as AIR Worldwide Corp., EQECAT Inc. and Risk Management Solutions Inc. In general, A.M. Best's catastrophe bond rating methodology takes into consideration the risk characteristics of the underlying perils covered (as reflected in the attachment probabilities), reviews of the models used and results of stresses on key modeling factors. A list of some of the items reviewed, evaluated, or monitored include the following:

• Structural, regulatory, legal and all 3rd party related documentations;

• The specific peril(s) included in the transactions (e.g., U.S. earthquake, U.S. hurricane, European windstorm, Japanese earthquake, Japanese typhoon);

• The granularity of exposure data gathered for the risk model;

Outputs of the models developed by the applicable peril modeling firm;

• Results of stress testing of the peril model;

• The existence of multiple event triggers (e.g., second- or third-event triggers);

• The credit risk of the entity paying the premiums to the SPRV and the credit risk of the swap counterparties; and

Other factors such as the risk period of the coverage, the annual re-setting of attachment points to address changes in the covered portfolio (such as changes in demographics and exposure), extension options, the model archiving policy and other qualitative factors.

Exhibit 2
Best's Idealized Default Matrix

Year	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.05%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	2.81%	5.80%	7.61%	8.51%	9.41%	10.17%
2	0.23%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	7.30%	10.60%	14.35%	16.84%	18.22%	19.40%
3	0.42%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	11.46%	15.08%	20.60%	24.46%	26.23%	27.74%
4	0.62%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	15.33%	19.26%	26.37%	31.41%	33.48%	35.27%
5	0.84%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	18.90%	23.14%	31.69%	37.74%	40.05%	42.04%
	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-

The Assignment of a Rating

The rating assigned to a catastrophe bond is based on *Best's Idealized Default Matrix*. The matrix shows that for each debt rating, there is an associated cumulative default risk corresponding to the term of the debt being rated. As an example of how the table is used in practice, assume that the annualized attachment probability is 1.74% for a three-year risk period. The cumulative attachment probability would be approximately 1.74% (3 × 1.74% = 5.23%). Absent any other considerations (and stress scenarios on the modeling parameters) the bond would merit a rating of "bb", which is the rating derived from the intersection of the third-year line in the matrix below and the 5.23% default probability.

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SR-2011-M-353b

January 17, 2012

Additional Information

Criteria:
Assessing the Tail Risk of Sidecars

Tail Risk and the BCAR

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This criteria report can be found at
www.ambest.com/ratings/methodology

Rating Sidecars

Sidecar capacity is an attractive alternative to traditional retrocession during reinsurance market disruptions that result from major catastrophic losses, erosion of reinsurance capital and escalation in reinsurance rates-on-line. A sidecar is a limited-life, special-purpose entity that generally provides property catastrophe quota-share reinsurance exclusively to its sponsor. There have been several life/health-related sidecars, but the vehicles are used predominantly by property and casualty reinsurers. Sidecars provide a way to offer rated debt to investors seeking exposure to various layers of catastrophic risks.

In the past, A.M. Best has evaluated the capacity and creditworthiness of sidecars to determine, in general, whether sidecars will strengthen, weaken or have no effect on the financial strength ratings of the sponsoring reinsurers. The analysis focused on the structural integrity of the transactions and the analytical rigor applied by various experts and advisers, such as peril modelers and investment banks. In addition, A.M. Best goes one step farther to publish Issuer Credit Ratings and/or debt ratings, where appropriate, on all sidecars and their corresponding debt (if any). This methodology describes how A.M. Best assigns ratings to property and casualty sidecars.

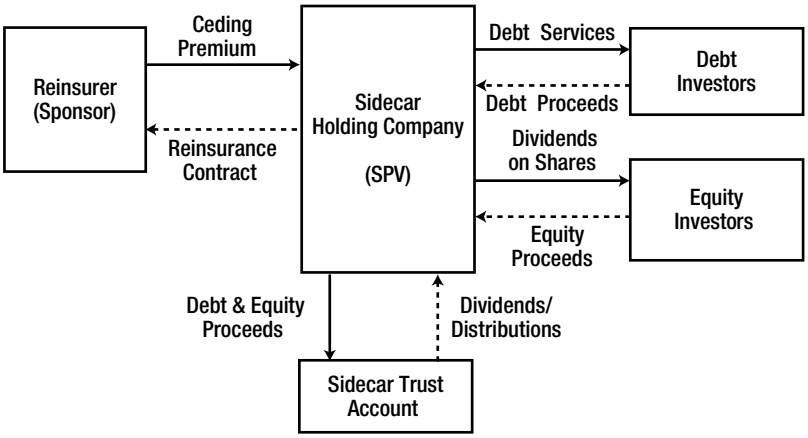
Rating Assigned

The ratings assigned are as follows: 1) Best's Long-Term Issuer Credit Rating (ICR), which is an opinion as to an issuer's ability to meet its ongoing senior financial obligations and, if the sidecar has issued debt, 2) Best's Debt Rating, which is an opinion as to the credit risk of a specific debt or debt-like security.

Key Rating Factors

In general, A.M. Best's sidecar rating methodology considers the risk characteristics of the underlying perils covered (as reflected in attachment probabilities); the reviews of the financial models used; and the results of stresses on key modeling parameters. Some of the items reviewed, evaluated or monitored include the following:

Exhibit 1
Simplified Sidecar Diagram:



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• *Sidecar Sponsor.* The track record of the sponsor is of utmost importance in determining the viability of the sidecar.

• *Data Quality.* The level of data quality is critical to the evaluation of the sidecar.

• *Terms and Conditions.* Covenants in the quota-share agreement or other underwriting agreements will help determine whether the interests of the sidecar investors and the sponsoring reinsurer are aligned.

• *Indemnifications and Carve-Outs.* The risks that the sponsoring company retains must be fully described.

• *Documents.* Structural, regulatory, legal and all third-party related documentation are reviewed, although A.M. Best relies on the sponsor's advisers for proper interpretation of such documents.

• *Collateralization.* The level and form of the collateral, including investment guidelines and the conditions for release of the collateral, are examined.

• *Ongoing Risk Monitoring.* The mechanism by which ongoing risk monitoring will occur, thereby ensuring that A.M. Best can re-evaluate the credit risk of the sidecar on a timely basis, is examined.

• *Management of Aggregate Risks.* This includes evaluating the correlation of risk layers.

• *Degree of Peril Modeler Involvement.* A.M. Best has become aware that involvement of established peril modelers can range from simply making sure that the sponsors turn on the "right levers" on licensed software to actually modeling the peril and verifying data quality. Obviously, A.M. Best will have more confidence in transactions that are modeled independently (with data verification) than those that are all modeled in-house with little or no input from third-party peril modelers. A.M. Best views positively transactions modeled in-house with the watchful eyes of independent reinsurance brokers that are experienced users of the various peril models.

• *Risk Analysis.* Exceedance probability curves, probability of attachment and exhaustion points should be provided. A.M. Best will ask for base and stressed exceedence probability curves.

• *Reserves.* The procedures for the establishment and liquidation (run-off) of reserves are examined.

• *Key Assumptions on Business Profitability.* Specific assumptions used in modeling premiums and loss ratios earned/experienced by the sidecar, including assumed volatility of such premiums and loss ratios, are critical.

• *Cash Flow Model.* Review of the cash flow model to understand the critical assumptions used in determining the profitability of the sidecar is an important element in the tail risk analysis.

• *Profit Distribution.* Details on the circumstances under which profits can be withdrawn from the sidecar for distribution to investors (and the timing of such distributions) must be well defined.

• *Business Origination.* This concerns the projected business origination (including breakout of retrocession business) and how monitoring will take place to alert A.M. Best to deviation from plan.

• *Protected Cell Structure Mechanics.* If the sidecar has a protected cell structure, the structure and the limits of each cell are discussed, including whether each cell truly operates independently with its own capital to absorb losses up to predefined limits. Perils covered in individual cell structures are stressed more than those wholly contained in dedicated, special-purpose reinsurance vehicles.

• *Operational Risks.* These involve the monitoring and record keeping needed to maintain the legal separation of the sidecar from the sponsoring insurance company.

• *Advisers.* Tax and legal advisers are of particular concern.

• *Reporting Requirements.* Examined are financial statements, procedures for reporting material events and exposure information.

The Assignment of a Rating

The rating assigned to catastrophe-linked securities or structures is based

Exhibit 2
Best's Idealized Default Matrix

Year	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.05%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	2.81%	5.80%	7.61%	8.51%	9.41%	10.17%
2	0.23%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	7.30%	10.60%	14.35%	16.84%	18.22%	19.40%
3	0.42%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	11.46%	15.08%	20.60%	24.46%	26.23%	27.74%
4	0.62%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	15.33%	19.26%	26.37%	31.41%	33.48%	35.27%
5	0.84%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	18.90%	23.14%	31.69%	37.74%	40.05%	42.04%
	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-

on *Best's Idealized Default Matrix*. The matrix shows that for each debt rating, there is an associated cumulative default risk corresponding to the term of the debt being rated. As an example of how the table is used, assume that the annualized attachment probability of a bond issued by a sidecar is 0.503% for a three-year risk period. The cumulative attachment probability would be approximately 1.509% (3 × 0.503% = 1.509%). Absent any other considerations (and stress scenarios on the modeling parameters), the bond would merit a rating of "bbb-", which is the rating derived from the intersection of the third-year line in the matrix and the 1.51% default probability. Other considerations that may come into play in rating either a sidecar or its debt may include: the level of comfort A.M. Best has with the modeling of the peril; the stress on the attachment points (via the increase in peril frequency); stresses on loss ratios (depending on whether catastrophe or working-layer risks are being evaluated); the concept of "credit cliffs" with respect to catastrophe-linked securities or entities; zonal and leverage risk limits; and other factors.

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May 2, 2012

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Rating Funding Agreement-Backed Securities

Analyzing Commercial Paper Programs

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This criteria report can be found at
www.ambest.com/ratings/methodology

Rating Life-Related Premium Financing Loan Securitizations

Premium financing, utilized primarily by high-net-worth individuals or companies, can provide a cost-effective means to fund the premiums of life insurance policies purchased for estate planning or business purposes. Individuals who finance the payment of premiums on their life insurance policies typically have significant personal assets that they do not want to liquidate to pay such premiums. By borrowing to pay the life insurance premiums, the insured's free capital can be used more efficiently elsewhere.

In a typical premium financing transaction, the required premium payments of a life insurance policy are financed through the issuance of a loan. Under the terms of the loan, the lender is committed to fund one or more premium payments. The loan can be long term, ranging from one year to the life of the policy. The proceeds of the loan can be used by the borrower for a variety of purposes relating to the acquisition of a new or pre-existing life insurance policy, including to:

(1) pay policy premiums,

(2) refinance an existing loan,

(3) pay certain fees/expenses related to the loan, or

(4) pay interest costs related to the loan.

The life insurance policy, along with any required collateral, is transferred to an irrevocable life insurance trust (ILIT), the assets of which are insulated from the estate of the individual establishing the trust (the grantor).

The premium financing lender requires the borrower to secure its life insurance premium financing loan with collateral and/or assets, which typically include: a collateral assignment of the life insurance policy and its death benefits; the cash surrender value; and other assets as required by a lender. In the event of an early termination of a premium finance loan before the death of the insured, the policy cash surrender value and other assets serve as the primary source for repayment of the loan. Other assets generally are needed to supplement the cash surrender value, because in the early policy years, there is typically a shortfall between the loan balance and the cash surrender value of the policy. Such shortfalls must be filled by additional assets pledged as collateral by the insured or policy owner. The additional collateral acceptable to the lender typically consists of liquid assets such as cash, certificates of deposit, cash equivalents or letters of credit (LOCs) issued by highly rated financial institutions. Over time, the additional collateral requirements may be reduced if the policy cash surrender value grows.

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In the event of the death of the insured, the premium financing lender is repaid from the life insurance proceeds. The lender's collateral assignment on the policy secures its right to repayment of the outstanding loan balance before the remaining proceeds are paid to the policy beneficiaries. Since a collateral assignment is placed on the policy, the policy owner cannot surrender the policy or access the cash value without the approval of the collateral assignee (the lender). The insurance company that issued the life policy typically provides an acknowledgement and agreement letter stating the insurer is aware that the assignee has extended a loan to the owner, which loan is secured in whole or in part by the policy. In addition, the insurer may provide assurances including: (1) the lowest cash surrender value that is payable by the insurer (assuming scheduled premium payments are made) and (2) lowest amount (return of premium) that would be paid by the insurer if the insurer were to deny a claim or contest the policy.

This methodology primarily addresses the securitization of pools of premium financed loans. The loans are aggregated, securitized and sold to investors in the form of notes, which are essentially collateralized by direct senior obligations of insurance companies (such as death benefits and cash surrender values); senior obligations of other entities providing collateral support; and liquid assets.

The reader should be aware that this document refers to traditional premium financing loans as opposed to the non-recourse premium financing loans popularized by the life settlement industry several years ago. In such non-recourse premium financing loans, the collateral for the loans generally consists of the death benefits associated with the insurance policies since cash surrender values are typically kept at a minimum. Therefore, premium financing lenders in the life settlement industry normally require life expectancy reports and quite often rely on transfer of the policies to the premium finance lender and perhaps the subsequent sale of the policies in the secondary market if the borrowers can not or do not pay the interest, principal, and fees associated with the loans when due. In the more traditional premium financing loan programs, the lenders put more reliance (for collateral purposes) on cash surrender value of the policies, letters of credit, and liquid assets as described in greater detail in this document. The lender generally does not consider mortality or longevity risk in the decision as to whether to make the loans.

Transaction Structure

In a securitization of premium financing loans, a special-purpose vehicle (SPV) is established and capitalized with funds from investors. The SPV subsequently borrows funds from note holders to purchase a pool of life insurance premium financing loans or a 100% undivided participation interest in a pool of life insurance premium financing loans from a lender. As described earlier, the lender is assigned the assets related to the insurance policies (i.e., death benefits and cash surrender values), letters of credit and cash. This assignment effectively is transferred to the note holders via the securitization.

To fund ongoing obligations (e.g., operating expenses, reserve requirements, etc.) the SPV may receive additional capital injections from the investors. The additional capital may take the form of cash transfers and/or loans to the SPV. If the equity investors make loans to the SPV, such loans may or may not be subordinate to the claims of the note holders.

Rating Assigned

The rating assigned is Best's Debt Rating, which is an opinion as to an issuer's ability to meet its ongoing financial obligations to security holders when due.

To determine the rating of the securities, A.M. Best analysts take the following steps:

Methodology

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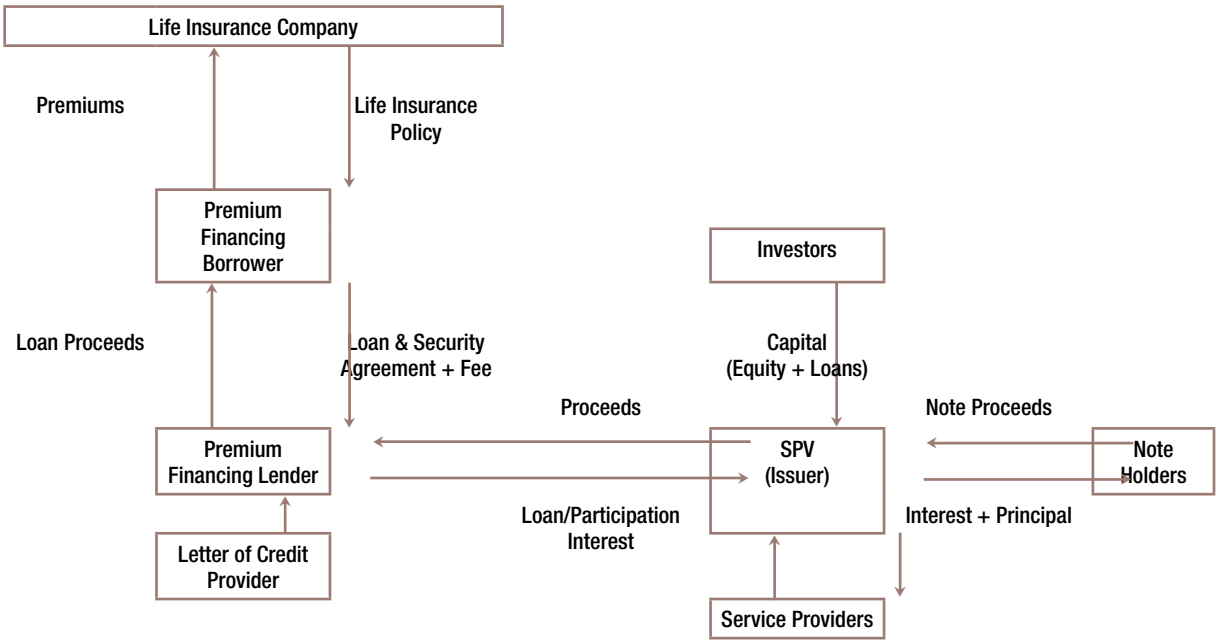
Exhibit 1
Premium Financing Loan Securitization Transaction



1) Obtain the current Best's Issuer Credit Rating (ICR), rating outlook and modifier for each of the insurance carriers and other entities providing collateral support; if no A.M. Best rating is available on the entities in question, then adopt the ratings by designated Nationally Recognized Statistical Rating Organizations (or NRSROs) for the analysis.[1]

2) Adjust these ratings downward by one notch for any insurance carrier or entity with a rating that is under review with a negative modifier.

3) Determine the minimum rating of all the insurance carriers and other entities after the adjustments in Step 2 to arrive at the maximum rating for the securities backed by life insurance premium loans.

4) Adjust the rating determined in Step 3, if warranted, to reflect some of the other considerations listed below to arrive at the assigned rating for the securities backed by premium financing loans.

- **Insurance Company Acknowledgements:**
  - o The extent to which the insurers have acknowledged the assignment of the life insurance polices as loan collateral for a premium financing transaction.
  - o The extent to which the insurers provide minimum policy cash surrender values and/or minimum payment amounts in the event claims (i.e., death claims and surrender values, etc.) are submitted.
- **Spreadsheet Review:**
  - o Review of the transaction spreadsheet to assess whether cash flows are sufficient to service the notes and to pay applicable operating expenses of the SPV.
  - o Application of deterministic stress testing of key factors to assess the ability of the SPV to service the notes.
  - o Review of permitted investment guidelines that apply to the investment of excess cash.
- **Operational Risk Evaluation:**
  - o Risks associated with loan originations that could raise the prospects of challenges by insurers and/or borrowers.
  - o A review of the servicer and back-up servicer arrangement (if any) is important to assess the adequacy of the servicing function and identify the potential for the disruption of the transaction. Factors considered include: experience level of the staff and whether the entities have the infrastructure, systems and experience to provide the required administrative support.

[1] Please note that if there is no rating by any designated NRSRO on an entity, the assumed rating for that entity would be "c". In addition, if an entity is designated as a Financially Impaired Company or a company in default, and that entity is still fulfilling its financial obligations to its counterparties, the assumed rating for that entity would also be "c".

Servicing activities include: verification services, premium payment and loan funding services, foreclosure, acceleration and/or default loan processing services and periodic (i.e., monthly, weekly, etc.) portfolio reporting requirements.

- o Determine if an ICR of the servicer or a servicer evaluation is available. To the extent the servicer has no public or private rating, other factors such as length of servicing history, staffing, senior management experience and other factors will be considered.
- o Review the various service providers (e.g., servicer, owner trustee, indenture trustee, etc.) and their roles to determine whether there is adequate separation of duties.

- **Structural Review:**
- o Review the structure of the transaction to determine whether it provides for: ample liquidity (amount and source) during times of market dislocation (i.e., broad market disruption periods); provisions for additional protection through credit enhancements and/or waterfall trigger mechanism to divert additional cash flow to the servicing of the notes; remedies available in the event of foreclosure or loan acceleration events; and the liquidation priority of the supporting assets.

- **Document Review:**
- o Review of the legal and/or enforceability opinions, including non-consolidation opinions, true sale opinions, loan and security enforceability opinions and other legal opinions regarding insurance and other matters related to premium financing lending.
- o Review of transaction documents, including loan and security agreement, indentures, subscription, liquidity facility agreements, servicing agreements, and participation purchase and sale agreements. Important considerations include: the lender's ability to early terminate the loans; default and foreclosure triggers; transfer of rights from the lender to the SPV; minimum collateral requirements and other factors.

Exhibit 2

Short-Term Rating Matrix

Issuer Credit Rating	Short-Term Rating
aaa	AMB-1+
aa+	AMB-1+
aa	AMB-1+
aa-	AMB-1+
a+	AMB-1+ or AMB-1
a	AMB-1 or AMB-2
a-	AMB-1 or AMB-2
bbb+	AMB-2
bbb	AMB-2 or AMB-3
bbb-	AMB-3
bb+	AMB-4
bb	AMB-4
bb-	AMB-4
b+	AMB-4
b	AMB-4
b-	AMB-4
ccc+	AMB-4
ccc	AMB-4
ccc-	AMB-4
cc	AMB-4
c	AMB-4

- **Surveillance Procedures:**
- o Review surveillance procedures to determine whether performance measurement metrics have been established. Specific monitoring activities include: the timely review of applicable servicer reports; routine review of insurance company surrender value acknowledgements; and the continuous monitoring of the credit quality of the insurers, the LOC providers and the servicer.

If the maturity of the securities is less than about a year, the rating assigned would be a short-term debt rating. Exhibit 2 shows the translation of issuer credit ratings to A.M. Best's short-term ratings. For the purposes of this rating criteria, any overlap in ratings will result in the assignment of the lower short-term rating if the rating outlook is negative. For example, if the ICR of the securities is determined to be "a" with a negative outlook, according to the procedures described earlier, the corresponding short-term rating would be AMB-2, not AMB-1.

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Rating Closed-Block Monetizations

Competitive pressures on earnings and capital adequacy drive how life insurers manage and allocate their assets. This is especially true for demutualized life insurers, which face demands from shareholders for better returns on equity. It is for these reasons that some publicly traded life insurers consider the monetization of future cash flow from closed blocks of life insurance and annuities.

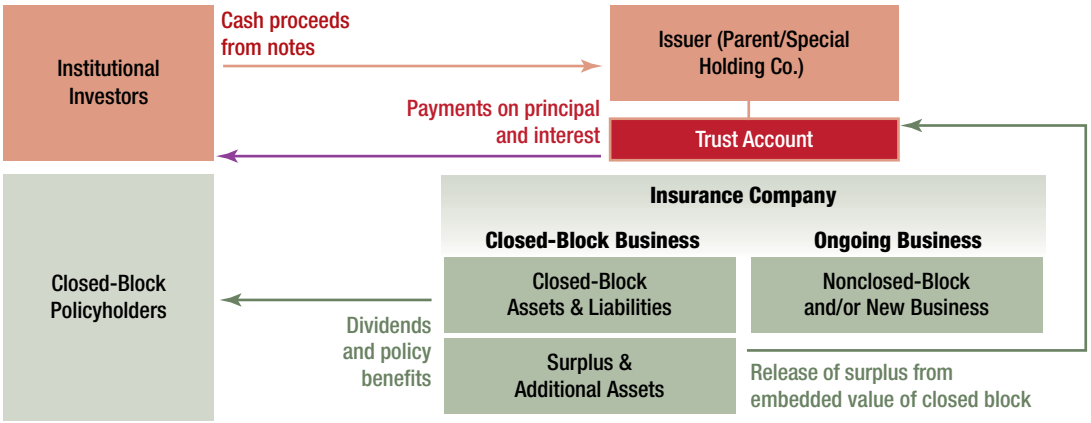
A closed block is a segregated group of policy and contract obligations, along with the assets backing them. Closed blocks accept renewal premiums but no new business; a full description of closed blocks can be found in the "Frequently Asked Questions" section. Monetization allows the insurer to receive immediate or upfront cash from investors in exchange for future earnings (i.e., the remaining cash flow after policyholder obligations in a closed block are satisfied) on the closed block of business.

Insurers may decide to monetize all or a portion of the expected cash flow. In theory, the cash proceeds from closed-block investors are redeployed to other businesses or investments that generate higher returns than the historically low return on capital generated by the closed-block business. While only demutualized insurers, to date, have employed this technique in the United States, it is a potential option for other life insurers.

This methodology report provides transparency regarding how A.M. Best Co. assigns ratings to the notes, issued to investors, that are serviced by the cash flows from a closed-block monetization. The underlying creditworthiness of the insurer, as measured by its Best's Financial Strength Rating, is one of the key drivers of the rating assigned to the monetization's notes. Assigning a Best's Credit Rating to the notes focuses on three primary questions:

- Will the insurer be sufficiently profitable and well capitalized to pay dividends?
- Will the closed block produce free cash flow sufficient to pay principal and interest on the notes?
- Will the transaction's structure capture for debt service all relevant proceeds, cash flows, collateral and guarantees securing payment of the notes?

A Monetization's Cash Flow



Additional Information
Insurance Holding Company And Debt Ratings

Rating Members of Insurance Groups

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Mechanics of a Monetization

Monetization differs from securitization in that the latter involves a transfer of the relevant assets to a bankruptcy-remote entity. In a monetization, the pledged assets remain with the insurer and potentially are available to satisfy all policyholder obligations in the event of insolvency.

Although a closed block can have a life span as long as 100 years or more, the securities issued against it can be structured with maturities as short as desired. After the notes are retired, any excess cash flows still being generated by the closed block can be monetized – or remonetized – at any point during the life span of the underlying policies.

In a closed-block transaction, an insurer notionally segregates the assets and liabilities of an existing block of business from its other activities. Cash flows pass from the closed block to investors, through an entity related to the insurer. This entity, or issuer, generally is an intermediate holding company created by the parent for the sole purpose of issuing the notes and servicing the monetization. The issuer also typically may establish a trust account to ensure that the cash flows for the current period are funded sufficiently.

Upon the issuance of notes, the issuer receives a secured but limited-recourse loan from investors. Should investors need to enforce their security interest in the closed-block cash flow, their recourse would be limited to the surplus cash flow from the closed block and any additional collateral in the trust, which can include stock in the insurer, swap agreements and tax-sharing benefits.

The proceeds from these notes typically are passed on to the insurer for redeployment or retained for other corporate purposes. The insurer releases, as a dividend to the intermediate holding company, the free cash flow from the closed block to pay the principal and interest due under the notes.

As stipulated under state insurance laws, the exact amount of funds available for dividends to the intermediate holding company or issuer and payment to investors is determined by the insurer's operating performance in the preceding year, or by its capital and surplus at the

A.M. Best Ratings

Best's Credit Ratings are independent opinions regarding the creditworthiness of insurance entities, issuers, and securities. Best's Credit Ratings are based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile, and, where appropriate, the specific nature and details of a security. A.M. Best assigns various types of credit ratings within the insurance segment, including Financial Strength Ratings, Issuer Credit Ratings, and Debt Ratings on corporate securities and insurance-related securitizations.

The foundation of Best's interactive credit rating process is an ongoing dialogue with the rated company's management, which includes review of the following three categories:

• Balance sheet strength measures the exposure of a company's surplus to its operating and financial practices, which determines a company's ability to meet its current and ongoing senior obligations.

• Operating performance evaluation centers on the stability and sustainability of the company's sources of earnings in relation to the liabilities that are retained by the company.

• Business profile is the qualitative factors that drive current and future operating performance and, in turn, can impact long-term financial strength and the company's ability to meet its obligations to policyholders.

end of that year. As a result, the underlying creditworthiness of the insurer, as measured by its Best's Credit Rating, is one of the key drivers of the rating assigned to the monetization's notes.

Rating Criteria

The debt rating assigned to the closed-block notes reflects the liquidation priority of the supporting assets in the event of an insurer's impairment or insolvency and ongoing recourse that exists to the general account. The rating analysis centers on three key issues:

1. Insurer financial strength;
2. Adequacy of cash flows; and
3. Transaction structure.

1. Insurer Financial Strength

Will the insurer be sufficiently profitable and well capitalized to pay dividends?

A closed block remains a part of the insurer, so the rating for the notes issued in the monetization bears a close relationship to the insurer's credit rating. The insurer's overall earnings will affect the amount of the dividend that becomes available to noteholders. Additionally, the monetization and resulting notes may create new risks that could affect the insurer's performance, which A.M. Best will incorporate into the insurer's credit rating. Best's Financial Strength Rating analysis is based on a comprehensive quantitative and qualitative evaluation of a company's balance sheet strength, operating performance and business profile. A guaranty, in whole or in part, of any aspect of the structure can support a higher rating than the insurer's credit ratings.

Inadequate performance also could prompt a downgrade in the insurer's financial strength rating, which could depress earnings and ultimately affect dividends. Other business risks are considered, such as the potential for a decline in sales should certain products lose their tax-favored status.

With a view to identifying the risks that could affect the insurer's performance, A.M. Best reviews a variety of qualitative factors, including:

- The insurer's structure and relationships among the various entities in the larger organization;
- Business strategy and management's evident ability to implement it; and
- Planned use of the proceeds.

Insurer's Structure

The overall entity's corporate structure, of which the insurer is a part, as well as the relationships among affiliates, are analyzed to assess the organizational risks that could affect the insurer's performance or the monetization's execution. Such risks, for instance, might derive from financing agreements that are unrelated to the transaction but carry the potential to trigger a default event under the monetization or another financing.

Should the insurer become insolvent, its policyholders – in the closed block as well as new policyholders – and direct creditors have a direct claim to the surplus and additional assets. The noteholders' claim to these surplus and additional assets, by contrast, is indirect and contemplates that the insurer will release to the issuer as a dividend the excess cash from the closed block.

Business Plan and Use of Proceeds

An insurer generally seeks to monetize the future cash flows of a closed block to reinvest the proceeds at higher returns than the business in the closed block is generating. Accordingly, the rating analysis considers the viability of any related business plans and the likely return on that investment. Support for this assessment derives from discussions with management and the rating agency's views on management's experience and capacity to execute the strategy.

A.M. Best also assesses the direct effect that the transaction will have on the insurer's financial strength as cash flows are pledged to secure the notes.

2. Adequacy of Cash Flows

Will the closed block produce sufficient free cash flows to pay the principal and interest under the notes?

The experience of the closed-block business ultimately determines the cash flow that becomes available from it. Dividends by the insurer attributable to this cash flow constitute the primary source of funds to service the notes. A key issue is the rate at which surplus and additional assets become available to repay debt. A.M. Best assesses:

- Regulatory and legal issues, and
- Cash-flow risks and actuarial valuations.

Regulatory and Legal Issues

A review of regulatory and legal issues regarding the closed-block business is essential in evaluating the risk of cash shortfalls in servicing the notes.

A.M. Best reviews the efficacy of the structures and accounting procedures. The policies, assets and cash flows of the closed-block business should be identified as pertaining to the structure, and there should be no material release of funds from it except by regulatory authority. A.M. Best also looks for sound documentation of appropriate investment guidelines; risk management procedures; financial reporting requirements; conditions to be met prior to execution of the transaction; and covenants pertaining throughout the transaction's life.

A closed block is subject to the oversight of state insurance commissioners. The potential exists for regulatory action to limit the funds available for dividend and application to the notes. For instance, regulators could block the release of the closed-block surplus if actual performance appears to be falling short of the projected "glide path" of the closed block. The glide path is the difference between the assets and liabilities in the closed block. To understand whether regulatory risk is likely to become a reality, A.M. Best will review communications between the regulators and the insurer, as well as any related legal opinions.

Cash-Flow Risks and Actuarial Valuations

To understand the cash-flow risks at both the insurer and issuer levels, A.M. Best assesses the expenses and starting assets of the closed block, as well as the closed block's operating rules and the insurer's past approach to managing policy dividends.

The developing experience of the closed-block business ultimately determines the cash flow available to service the notes. If the policies in the closed block are life insurance, the major risks to performance are mortality, surrenders and lapses. These risks are influenced by the types of policies, average age of the insureds, distribution of policy sizes, location of the policies issued, reinsurance and the insurer's underwriting procedures. With annuities, the primary risks are the longevity of the annuitants and changes in inter-

est rates and investment markets. To the extent that these risks behave differently than assumed, the assets might be inadequate to support the block.

A.M. Best reviews the glide path of the closed block by investigating the insurer's statutory financial statements; history of policy dividends; actuarial valuations for the closed block since formation; and stochastic and other modeling of the block's future performance. Actuarial models assess the consequences of variations in mortality, lapsation, interest rates and credit risk. Accordingly, model assumptions are reviewed for reasonability and then stress tested.

Reinsuring the policies within the closed block presents the insurer with the counterparty credit risk of the reinsurers. Consequently, A.M. Best will consider their aggregate creditworthiness. Additional reinsurance risk might derive from other dynamics. For instance, if the experience on the closed block were to deteriorate, its reinsurers could increase their premiums, thereby increasing the operating expenses of the closed block.

The assets allocated to the closed block and the surplus and additional assets are analyzed for their quality and sufficiency to fund the closed block's liabilities over its life. It is important that the funding calculations reflect the operating rules of the closed block. Reviews will cover the insurer's processes for managing assets to liabilities in the general account as a whole and, if available, specifically for the closed-block business.

Reserves generally are invested in fixed-income securities, which present credit and interest-rate risks. Changes in interest rates and credit losses can affect the profitability of a closed block. Undertakings by third parties can reduce this risk either overall – by guaranteeing the notes directly – or indirectly – such as through credit-default swaps on the invested assets.

3. Transaction Structure

Will the transaction's structure capture for debt service all relevant proceeds, cash flows, collateral and guarantees securing payment of the notes?

A closed-block monetization is a complex legal structure with a number of participants. The integrity of the monetization relies in large part on the priority of the noteholders' claim to the collateral in the trust account. The notes represent senior secured debt of the obligor, though the noteholders generally have recourse only to the collateral in the trust. Accordingly, structural risk is an important area of inquiry. To evaluate this, A.M. Best reviews:

- Regulatory and legal opinions, and

- Guarantees and other insurance agreements.

Regulatory and Legal Issues

There is a risk to investors if the monetization has been structured improperly. A.M. Best reviews any legal and regulatory opinions relating to the closed-block monetization, such as regulatory approval for the formation of the issuer and effective segmentation of assets. Factored into the rating is A.M. Best's view of the likelihood that the transaction's structure will capture for debt service all relevant collateral and guarantees that secure payment of the notes. Finally, the structure must be viewed in the context of all other debt documentation of the insurer and its affiliates.

The analytical focus is on the quality, amount, availability and management of the collateral in the trust account and the "perfection of the security" in it. Reviews will cover the creation of the trust, covenants on its management and, in particular, the priorities of the various parties' claims on the trust's assets in stress situations.

Guarantees and Other Insurance Agreements

If a third party – such as a monoline financial guarantor – is providing assurance of an aspect of the monetization, A.M. Best reviews the guarantor's financial strength and the documentation of its undertaking, as well as the credit quality of the guarantor. The latter analysis includes a review of public information and discussions with the guarantor on its underwriting analysis of the transaction.

The notes are illiquid, as they typically aren't registered with the Securities and Exchange Commission, and no established trading market exists for them. This is an investment risk not covered in the rating opinion.

Frequently Asked Questions

1. What is a closed block and why is it used?

A closed block is a segregated group of participating or dividend-paying policies and contracts along with the assets backing them. The block, which is in runoff, is considered "closed" because no business flows into it except for renewal premiums. The closed block continues until the last policy no longer is in force.

A life insurer might set up a closed block of policies in the course of demutualizing – converting from mutual ownership to a stock form of ownership – or as a means of exiting a line of business. For a demutualizing insurer, the closed block is a way to protect the interests of its pre-existing policyholders – the insurer's former owners – from the competing interests of the stockholders – its new owners. For other insurers, the segmentation and monetization of a closed block might be viewed favorably by institutional investors that base their stock valuations on an insurer's ongoing business.

A closed block facilitates the management of dividends and monitoring of whether or not the dividends continue to meet policyholders' reasonable expectations. The insurer doesn't guarantee its dividend scales but periodically reviews them to ensure the reasonable and consistent treatment of dividends over the life of the closed block. The runoff of assets and liabilities in the closed block also is monitored with a view to preventing a windfall to either the stockholders or the last policyholders in the closed block, or a shortfall in benefits or dividends to policyholders in the closed block.

2. What is a closed-block monetization?

Monetization allows the insurer to receive immediate cash from investors. In a monetization, the insurer—through a separate, related entity—sells notes to investors who provide the insurer with capital in exchange for the promise of future cash flows not needed to service the obligations to policyholders in the closed block. The cash flow accrues to the investors in the form of debt service on the notes. Demutualized insurers have executed all the monetizations in the United States thus far, though there is no reason why an insurer that has always been a stock company couldn't use an analogous structure.

3. What is the duration of a closed-block monetization?

Although the life span of a closed block of business can be as long as 100 years or more, the notes generally are structured with a much shorter maturity of 15 to 30 years. After the notes are retired, the block still might generate excess cash flows. Accordingly, a closed block can be monetized, or remonetized, at any point during the life span of the underlying policies.

4. How does monetization differ from securitization?

Monetization differs from securitization in that the latter generally involves the transfer of the affected assets to a bankruptcy-remote entity. A monetization isn't bankruptcy remote

because the assets pledged – the surplus cash flow from the closed block and the closed block itself – remain with the insurer. Accordingly, they remain available to satisfy all obligations to policyholders within and without the closed block.

Typically, the insurer's assets outside the closed block aren't used to meet policyholder obligations except if needed to meet minimum guaranteed obligations. However, in a default event, the claims of the noteholders to the closed-block business are subordinate to policyholders of the closed block and the ongoing businesses, as well as general creditors. Thus, in the event that the closed block can't meet its obligations to policyholders, the insurer's assets outside of the closed block may be used. Furthermore, in a default scenario, insurance regulators can release the closed-block assets to meet the insurer's obligations to policyholders.

5. How is a closed block set up?
Although the closed-block business is not a separate legal entity, the insurer typically prepares separate financial statements for it. It is important to emphasize that the separation of the closed-block business from the rest of the insurer's business is notional only. The demutualization process allocates to the closed block adequate assets to fund all insurance benefits, policyholder dividends and taxes. To simplify the regulatory monitoring of the closed block, the expenses of administering it sometimes are paid from the insurer's ongoing business. Alternatively, expenses may be allocated by formula between the closed-block business and the insurer's ongoing business.

The closed-block business consists of two layers:

- The assets and liabilities designated as constituting the closed block, and

- The additional surplus and additional assets.

The insurer selects the assets in the closed block with the intention that they will be sufficient to fund exclusively the liabilities of the closed block. However, those assets can be loaned to the insurer's ongoing business or released by regulators in stress situations. The performance of the closed block – persistency, mortality, interest, expenses and taxes – will influence directly the dividends ultimately paid to the closed-block policyholders.

The present value of the assets allocated to the closed block might be less than the block's current liabilities. The difference is expected to be made up over time through the investment returns from the closed block.

6. What are the surplus and additional assets?
Insurers generally identify additional assets to cover potential shortfalls in the closed block. These "surplus and additional assets" that reside outside the closed block – but within the closed-block business – provide any additional funds necessary to support the closed block. They represent the difference on a statutory accounting basis between the closed-block assets and the sum of the closed-block liabilities and interest-maintenance reserves.

7. Where is the collateral held?
The trust holds the funds for payments of principal and interest and other collateral for the noteholders' benefit. The trust continues as long as any notes remain outstanding. The trust also can hold a portion of the proceeds of the notes as collateral for the notes. Funds are withdrawn from the trust account for payments of principal and interest on the notes, and for any other expenses of the transaction, including premiums to bond insurers, investment management expenses and amounts due under interest-rate swaps related

to the notes. If the assets in the trust account fall below a predetermined level, the noteholders may have the right to accelerate the maturity of the notes.

8. How are investors paid?

The earnings released from the surplus and additional assets – and dividended to the notes' issuer for deposit in the trust – as well as the earnings on the funds in the trust, comprise the primary sources of funds to pay the interest and principal on the notes. Because of regulatory limitations on how much the insurer can pay in dividends to the issuer, the amount of funds available to noteholders reflects the insurer's overall performance, including the closed-block and ongoing businesses. Therefore, even if the closed block outperforms expectations – generates more cash than projected – the funds available for dividends might decrease because the insurer as a whole underperformed.

9. How does the money flow?

If the insurer releases a dividend to the issuer, any part of that dividend attributable to the performance of the closed-block business is deposited in the trust to make payments on the notes. Concurrently, the balance of the dividend – which by definition derives from the ongoing business – might be placed in a second, ancillary trust account. When a "trigger event" occurs – such as a decline in the insurer's financial strength rating by a certain number of notches – the balance also becomes available for debt service. The note's principal is paid when the notes mature or amortize, or when a trigger event occurs.

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Methodology

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February 21, 2014

Life Settlement Securitization

A life settlement is an insurance policy sold by the owner – typically the insured or a trust – for an amount greater than the surrender value of the policy but lower than the face amount of the policy. The purchaser of the life settlement becomes the new owner and beneficiary of the life insurance policy and is responsible for making future premium payments and collecting the death benefit of the insured. **Exhibit 1** lists some of the reasons to sell an insurance policy.

Exhibit 1
Reasons to Sell an Insurance Policy

- Premiums paid by the policyholder have become unaffordable, and the policy is in danger of lapsing;
- Estate-planning needs of the insured have changed significantly;
- Funds are needed for long-term health care;
- Beneficiary has changed because of death or divorce;
- Disposal of unneeded "key-man" insurance or other business-owned insurance;
- Fund new annuities, life insurance or investments;
- Satisfy the need for cash in a forced liquidation due to bankruptcy or financial difficulties;
- Liquidate policies donated to not-for-profits; or
- Dispose of policies that no longer are needed or wanted for a variety of other reasons.

The life settlement market is an outgrowth of the viatical market, in which policies of the terminally ill – normally those insureds expected to die within two years – are bought and sold. In the life settlement market, however, insureds generally are over 65 years (but mostly are in their 70s). In addition, the typical life expectancy of insureds in the life settlement market, however, is currently about 11 to 12 years, indicating that the insureds in this market do not generally have catastrophic medical impairments. In addition, the average size of the insurance policies in the life settlement market is typically over $1 million dollars as opposed to an average of about $80,000 in the viatical market.

Life settlements typically are sold through licensed providers by insurance brokers and agents. The price providers pay for the life settlements depends generally on the life expectancies estimated by medical underwriters after evaluating the medical records of the insured, as well as policy-specific contract characteristics. The higher the medical impairment of an insured, the lower the life expectancy and, hence, the higher the price paid for the insurance policy.

The prospects for life settlement securitizations have generated great interest in the capital markets. However, rated life settlement securitizations will continue to be rare due to: 1) the difficulty in acquiring the critical mass of life settlements necessary for statistically stable cash flows; 2) significant insurable interest issues that must be addressed; 3) high transaction costs inherent in the acquisition of life settlements that make securitization economically infeasible; and 4) the wide range of opinions on life expectancies of legacy portfolios and the divergence of actual results to expected results for such legacy portfolios.

The further growth of life settlement securitization will depend on: increased clarity and standardization of the general methods for predicting life expectancies of insureds (including the public release of data on the performance of medi-

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cal underwriters); the transparency of the pricing of life settlements and of the fees earned by the various intermediaries in the transactions; the extent to which the life settlement industry provides safeguards regarding the identities, health conditions and financial status of the insureds; effective industry regulatory oversight and self-policing; the continued refinement of rating agency standards for assessing the credit risks associated with such transactions; and the pace of the emergence of new initiatives supported by the life insurance industry to provide alternatives to the secondary market for life insurance policies. **Exhibits 2** and **3** describe and illustrate the parties involved in typical life settlement securitization transactions.

Exhibit 2

Parties Involved in Life Settlement Securitizations

Issuer – The issuer normally is a bankruptcy-remote entity established for the sole purpose of purchasing life settlements; issuing securities collateralized by life settlements; and holding other assets for the sole purpose of servicing the interests of the noteholders. The issuer's responsibility is outlined in the indenture of the transaction.

Providers – Providers are licensed entities that purchase insurance policies directly from sellers or licensed brokers or agents authorized to act for sellers. They are responsible for making sure that all transfer-related documentation and sale documentation packages conform to applicable state or federal statutes, laws, rules and regulations relating to consumer protection, as well as insurance and life settlement practices and procedures. Providers present policies to the issuer pursuant to an origination agreement.

Medical Examiners – Medical examiners provide comprehensive reviews of medical records and mortality profiles on the insureds looking to sell their insurance policies. The mortality profile provided by the medical examiners includes a summary of pertinent medical conditions as well as a determination of life expectancy. The issuer usually requires providers to engage the services of at least two independent medical examiners to evaluate the life expectancies of the insureds.

Adviser for Inconsistency – This adviser performs "Inconsistency Checks" verifying that medical records are consistent with the original insurance applications. Medical examiners sometimes can provide this service.

Collateral Manager – The collateral manager is responsible for choosing the policies that will be included in the transactions. This manager's specific responsibilities may include: confirming that the eligibility criteria for inclusion in a portfolio are satisfied; performing policy optimization to minimize premium payments and maximize death benefits; delivering the sales documentation package to the trustee; liquidating policies when necessary; determining which policies should lapse in the event of a liquidity crisis; and determining by how much to reduce death benefits to reduce premium payments in a liquidity crisis.

Servicer/Tracking Agent – Some of the responsibilities of the servicer may include: contacting the insureds or their representatives to verify the current life/death status of the insureds; further optimizing premiums when necessary; maintaining correspondence with carriers to monitor any changes to the insurance policies; facilitating the collection of death benefits upon the death of insureds by acquiring copies of death certificates (and sometimes, filing the death claim with the insurance company); and providing reports to the issuer and/or collateral manager regarding deaths and any changes to policy features;

Trustee – The trustee performs all the duties it is assigned in the transaction's indenture. In general, the trustee is responsible for holding the bonds/notes for the benefit of the noteholders; for holding the security granted by the issuer over its assets; and for making payments and performing certain other obligations pursuant to the indenture. The trustee also holds all documents delivered to the issuer in connection with each life settlement. In addition, the trustee performs certain duties related to documenting life insurance policy acquisitions, fund transfers and submission of claims for payment under life insurance policies on the instructions of the collateral manager.

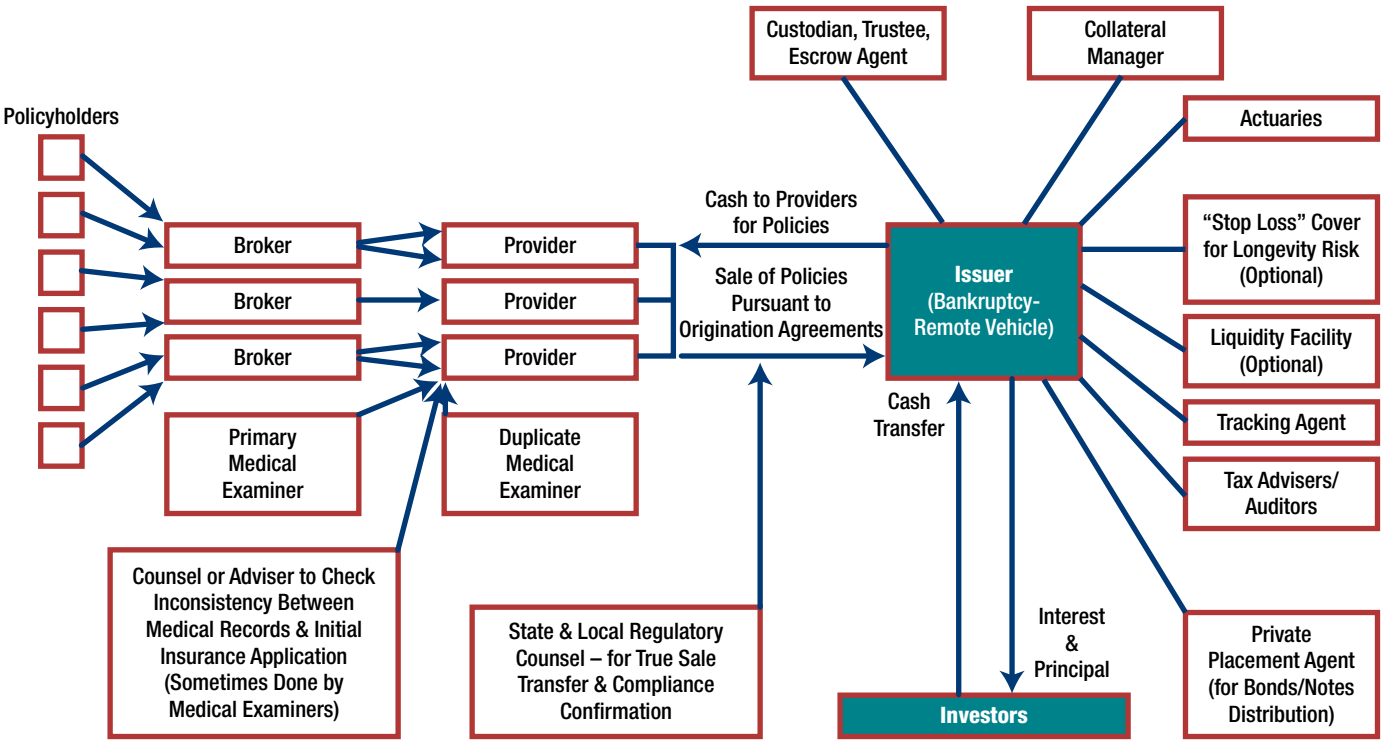
Actuaries – Actuaries can play an important role by helping to determine the appropriate mortality tables for the transaction; assessing the reasonability of the mortality/survivorship schedule provided by medical examiners; performing an underwriting review of the medical examiners used in the transaction; and helping the issuer determine the liquidation value of life settlements.

Insurance Companies – The insurance companies that issued the life insurance policies in the transaction are critical because they must be notified of the transfer of the policy's ownership, they can provide policy illustrations to help with policy optimization, and they are responsible for sending notices to the issuer about the policies and for sending the death benefits to the issuer.

Attorneys – Attorneys can help ensure that all documentation is complete and has been prepared in compliance with state insurance regulations, and that the integrity of the insurable interest doctrine is maintained. They also may provide comfort letters to verify the states in which providers are licensed, and they can help craft medical disclosure forms to comply with applicable privacy laws. In addition, attorneys ensure that the bankruptcy-remote entities from which the securities are issued have been created so as to protect the assets of such security holders.

Accountants/Auditors – Accountants can provide opinions about (1) the recognition of income and expenses in the bankruptcy-remote entity's country of domicile; (2) the tax implications, if any, of acquiring life settlements by the entity; (3) any special tax treatment/implications associated with the disposal of life settlements; and (4) identification of any tax withholding requirements that might be applicable to the entity. Auditors periodically provide opinions on the integrity of the balance sheet and income statement of the bankruptcy-remote entity.

Exhibit 3
Life Settlement Securitization Diagram



The reader should be aware that A.M. Best classifies life settlement securitizations as insurance-linked mortality/longevity/morbidity transactions. Transactions in this category have been mostly used by insurance companies to fund their operations, improve capital management or hedge their risks. These transactions include: Regulation XXX and Regulation AXXX securitizations, extreme mortality catastrophe bonds, disability reserve securitizations, embedded value securitizations, structured settlement securitizations, and life insurance and annuity arbitrage securitizations.

A.M. Best's Evaluation Policy

The acquisition of new life settlements for securitizations is fraught with uncertainties: the extent to which the sellers of the insurance policies have established insurable interest in the lives of the insureds; the price of the life settlements; the estimated life expectancies of the individuals who sell their insurance policies; the availability of an ample pool of policies to satisfy the requirement for the transactions; the extent to which the various intermediaries involved in facilitating the sale of insurance policies have adhered to legal and regulatory requirements; and other factors that can make building a suitable life settlement portfolio challenging. Due to these uncertainties, A.M. Best expects that an issuer seeking a debt rating must have acquired 100% of the life settlements necessary for the transaction (or will acquire the life settlements no later than the closing date of the transaction) and have met the conditions outlined in this methodology. A.M. Best expects the issuer to conform to any disclosure requirements for registered securities as mandated by applicable securities laws, the Securities and Exchange Commission or regulatory entities.

In order to issue a debt rating, A.M. Best requires a nearly-finished version of the indenture and/or offering memorandum from the attorneys engaged by the issuer. In addition, all essential elements of the transaction should be in place.

Analyses Based on Existing or Newly Formed Portfolio of Life Settlements

A.M. Best generally prefers to rate securities backed by new life settlements that have been purchased policy by policy over a period of about 12 to 18 months or less. However, A.M. Best is aware that there are large pools of aged life settlements for sale by institutional investors or providers that wish to liquidate their holdings. Acquiring an existing portfolio eliminates the ramp-up period, which can be extensive for life settlement transactions, and may mitigate some of the other uncertainties associated with purchasing policies over time. Buyers of existing portfolios, however, run the risk of inheriting the legal and regulatory risks inherent in the manner in which the portfolios were originated, and in not being able to obtain up-to-date medical underwriting on the lives in the portfolios. Thus it may take a longer period of time to evaluate the risks associated with existing pools and these pools may require more extensive legal and origination reviews.

A.M. Best, under certain situations, may make its decision on whether to rate securities collateralized by an existing life settlement portfolio based on various factors, including (but not limited to): the life settlement origination criteria established by the aggregator; the specific medical underwriters used and the availability of any and all life expectancy projections on the lives in the portfolio; when the medical underwriter determined the life expectancies of the lives in the portfolio; the ease of the legal transfer of the portfolio to the issuer; the availability of the data needed for surveillance of the transaction (as described in the last section of this document); the availability of independently verified historical mortality experience of the portfolio; and the availability of legal opinions verifying adherence to insurable interest laws.

A.M. Best's Analytical Approach

The mortality profiles of the insureds, as provided by reputable medical underwriters, are used in simulating the maturities in the entire life settlement portfolio. In addition, the probabilities of impairment of the insurance companies and the assumed recoveries are applied to the transaction. These factors, along with the face value of each life settlement, the premium for each policy and the projected increases in premiums (if any) in the event the insureds live longer than expected are considered in arriving at the cash flows that will service the securities and the issuer's operating expenses. The end result of A.M. Best's analysis is a determination of the default probability of the securities, which then is correlated to an idealized default probability matrix. This process, in conjunction with meeting various stress scenarios and qualitative considerations, helps the A.M. Best rating committee establish the credit rating on the securities based on A.M. Best's credit market scale. The rating considerations and requirements are described below.

Rating Considerations, Requirements and Expectations

1. Types of Policies Permitted/Conditions on Policies

Issuers of securities backed by life settlements can include life insurance policies such as: universal life, variable universal life, whole life, variable whole life, term life, joint survivorship and group policies. A.M. Best also allows term policies that are convertible or exchangeable to permanent policies without a new medical evaluation and without a new contestability or suicide provision. The anticipated maximum increase in premi-

ums at the time of conversion or exchange must be disclosed. Term policies that are neither convertible nor exchangeable also are allowed in the transaction. There is, however, a 10% limit on the number of lives covered by term policies in the pool and a 10% limit on the aggregate face value of the term policies in the pool. Since group policies are subject to the risk that the sponsoring employer, union or association will become insolvent, A.M. Best allows only convertible group policies in the collateral pool.

The general rules related to the features of the insurance policies in life settlement securitizations are:

- Only policies issued by U.S. insurance companies on U.S. residents are allowed;
- Assignment of the policy to another party should not be restricted;
- Fractional shares of policies generally are not allowed;
- Confirmation is required that the policy is in force and is not within the grace period;
- No restrictions should exist on the payment of the full, current net death benefits due the beneficiary in the event of the insured's death, except for nonpayment of the current premiums;
- Confirmation is required that nothing prevents the payment of insurance benefits in one lump sum; and
- Verification is required that the policy is not encumbered by any other party.

2. Service Providers

A. Medical Underwriters

A.1 Mortality Ratings and Life Expectancy Estimates

Medical underwriters use a numerical rating system developed by reinsurers to determine how an individual's mortality differs from a "standard" risk. In general, standard risk is given a value of 100%, which represents a unit of risk. The system assigns debits and credits to a life where debits are factors that increase a person's mortality over a standard risk and credits are factors that decrease a person's mortality over a standard risk. For example, an individual might have coronary heart disease that may be assigned a debit of 150%, and if that person has had bypass surgery to manage the ailment, he or she may earn credits of 25%. When the debits and credits are summed, the person has a net debit balance of 125%. If a standard risk is considered to have a table rating of 100%, then this risk relative to standard will have a rating of 225%. This can be interpreted to mean that the probability that this individual will die is 125% higher than that of a standard risk – i.e., 225% of a standard risk. It is important to recognize that one of the significant tasks a medical underwriter has to undertake is to determine what is a standard risk, since the mortality rating is a relative measure of the probability of death, not an absolute measure. Authors Brackenridge, Croxson and Mackenzie put it succinctly in the fifth edition of *Brackenridge's Medical Selection of Life Risks:*

> *The underwriting of substandard lives uses comparative mortality to judge substandard risks. Simply put, in order for a condition to be viewed as substandard, mortality observed among those people having the condition, must be greater than the mortality otherwise expected. And in order to know what mortality to expect, a reference mortality experience must be available.*

No matter the medical underwriter, the standard risk class should represent a combination of risks that are substandard as well as risks that are above standard – not just risks of healthy individuals. To arrive at a life expectancy for most lives,

the medical underwriter applies the mortality rating to its standard mortality experience, otherwise known as the "reference mortality experience" in the passage above. Because each medical underwriter uses its own mortality tables and has its own method of determining debits and credits to account for diseases, lifestyle and mortality improvements, it is difficult to derive a mortality curve for an insured unless one knows the specific standard table used by that medical underwriter. For this very reason, one who receives a mortality rating from a medical underwriter for an insured also should get the corresponding standard mortality table that is used to derive the life expectancy; otherwise, the data set is incomplete for the purposes of analyzing mortality risk. The life settlement industry has surmised, however, that most medical underwriters currently use a derivative of the 2008 Valuation Basic Table (2008 VBT) as standard – a conclusion that is probably correct in most cases. It should be noted that when the 2014 VBT is published, A.M. Best expects the life settlement industry to migrate to a derivative of that table, and as a result, A.M. Best may revise this criteria accordingly to reflect more recent experience data.

A.M. Best would like the issuer to identify the primary disease associated with each life. The primary disease is the impairment for which the most debits have been assigned and that accounts for 50% or more of the total debits. If no single impairment accounts for 50% or more of the total debits, then the disease category should be classified as "Multiple."The categorization of diseases as described in **Section 4A** will help ensure the disease diversity of the portfolio is sufficient to mitigate any cures of the diseases suffered by the insureds. **Exhibit 4** shows the diseases associated with the lives in typical life settlement pools.

Exhibit 4
Disease Diversity

Disease or Category	Examples	Maximum Limits
Cardiovascular	Coronary Artery Disease, Arrhythmia Other (e.g., Heart Valve Disease)	50%
Cerebrovascular	Stroke, Carotid Artery, Transient Ischemic Attack	20%
Dementia	Alzheimer's, Multi-Infarct	20%
Cancer	Lung, Prostate, Breast, Hematological, All Other Cancers	25%
Diabetes		10%
Respiratory Diseases	Emphysema, Asthma, Sleep Apnea,Chronic Obstructive Pulmonary Disease	20%
Neurological Disorders (Excluding Alzheimer's)	Parkinson's, Lou Gehrig's Disease (ALS)	15%
Other	Renal Failure, Peripheral Vascular, etc.	20%
No Disease		100%
Multiple		40%
HIV/AIDS		0%

To help mitigate the effect of systematic errors by medical underwriters in the determination of life expectancies or the assignment of mortality ratings, A.M. Best generally requires that at least two independent medical underwriters provide an evaluation of the health condition of the insureds in the collateral pool based on the medical records obtained from the primary physicians of the insureds. A.M. Best recommends that new medical underwriters' reports be obtained if more than 12 months have elapsed between the time of the most recent life expectancy reports (prepared with updated medical files) and the time of the contemplated securitization.

As a practical matter, it is unlikely that a buyer of a life settlement will have continual access to the medical records of the insured once the insured has been paid for his or her policy, even if the buyer has a limited health-care power of attorney. First, as time elapses, the insured may move and engage the services of a new physician, who may not be willing to comply with the request for medical records. Second, the insured has no incentive to provide medical records to the buyer of his or her insurance policy, and it may not be practical for such a buyer to enforce the right to obtain the medical records through legal action, even if there is an enforceable limited health-care power of attorney.

With older life settlement portfolios available for sale in the so-called tertiary market, A.M. Best is seeing more proposals for life settlement securitizations that contain life settlements with associated life expectancies that were issued years earlier. Some of the major medical underwriters, however, have changed their standard mortality tables and underwriting protocols considerably, with some of the most dramatic changes occurring around year-end 2008 and in 2013. A.M. Best recommends that medical underwriting reports be updated even if such updates are done with the old medical records. In general, the level of credence A.M. Best ascribes to medical underwriting for legacy portfolios depends on the level of updates. The level of medical updates from highest (most reliable) to lowest are as follows: 1) signed medical underwriting report created with new medical records (on an "as is" basis) performed by established medical underwriters within one year of the contemplated securitization; 2) signed medical underwriting report created with old medical records (on an "as was" basis) performed by established medical underwriters; 3) medical underwriting based solely on new mortality tables performed by established medical underwriters; 4) updates by others (including actuaries) based on their knowledge of how the mortality tables and/or underwriting procedures of the various medical underwriters have changed over time.

The adjustments, if any, made by A.M. Best to issued life expectancies and/or mortality ratings, particularly in stress scenarios, will depend on the level of medical underwriting updates as described above, and on: 1) A.M. Best's knowledge of the differences among the medical underwriters based on its evaluation of average life expectancies by cohorts, and 2) the date of the original underwriting.

A.M. Best requires that issuers provide any and all life expectancies and mortality ratings obtained from independent medical underwriters on the lives in any portfolio it evaluates. In addition, issuers should be prepared to provide redacted medical underwriting reports so A.M. Best can verify a sample of the underwriting information it has been provided.

A.2 Underwriting Evaluation of Medical Underwriters

For investors, two of the most important factors in evaluating life settlements are longevity risk and the potential for medical underwriters to systematically misestimate life expectancies. A.M. Best has observed that maturities (i.e., deaths) in life settlement portfolios accumulated over the past decade have not kept pace with the projections made by medical underwriters when the portfolios originally were formed. In addition, recent public records filed over the past few years with the Securities and Exchange Commission by significant holders of life settlements have reported significant write-downs of life settlement portfolios despite the major underwriting adjustments made by some medical underwriters in 2008. For these reasons, A.M. Best requires an actu-

arial review by independent actuarial organizations of the efficacy of the primary medical underwriter associated with new transactions or with existing transactions where underwriting standards of the primary underwriter have changed significantly.

In reviewing the medical underwriter used in assigning life expectancies and/or mortality ratings to the lives in the life settlement securitization, A.M. Best expects the issuer's representatives and/or the medical underwriter to discuss the following issues:

- Underwriting methodology and philosophy;
- Physician/underwriter evaluator's background and credentials;
- Standard mortality table(s) used to determine life expectancy estimates;
- The extent of the self-evaluation of the medical underwriter's efficacy (i.e., results of experience studies from internal database);
- Record keeping and process flow;
- Source materials such as reinsurance manuals and clinical studies for specific diseases;
- Extent and frequency of updates of source materials/reinsurance manual; and
- Recent changes and reasons for changes in the methodology used by medical underwriters.

Among the questions that the issuer and the medical underwriter should be prepared to answer are the following:

- What is the general nature of the adjustments made to the standard mortality table(s) used?
- Are flat extras used? If so, for what diseases?
- Are debits always additive? How are debits scaled back for co-morbidity?
- Under what circumstances are mortality tables abandoned and other methods applied for estimating life expectancies?
- Are mortality improvements factored into the life-expectancy figures?
- When using mortality tables, is "age near" or "age last" the applicable age used for the analysis?
- What are the maximum and minimum ages for which a life expectancy will be provided?
- What are the maximum and minimum mortality ratings issued?
- What is the maximum age of medical records for an evaluation? (For example, if medical records are 15 months old, will a life expectancy still be issued?)
- When medical records have aged, are the life expectancies provided adjusted for the period between the time the records were created and the time of the medical underwriter's evaluation?
- Is a survivorship schedule provided?
- Does the medical underwriter provide joint life-expectancy calculations?

B. Providers

The provider purchases insurance policies from a seller or a licensed broker or agent authorized to act for the seller. The purchases of life settlements are made through licensed providers approved by the collateral manager of the transaction. In the case of life settlement securitizations, the provider generally purchases policies for the issuer pursuant to an origination agreement between the issuer and the provider. A.M. Best expects that the purchase agreement will comply with all applicable state insurance laws and regulations governing life settlement or viatical financing transactions between the issuer and the life settlement providers.

Issuers must identify the providers they intend to use or have used for their transactions. A.M. Best's view on the providers may depend on the following considerations:

- The various states in which the providers are licensed to conduct business (in states where licensing is required);
- The providers' prior policy purchasing experience for institutional investors;
- The providers' infrastructure and systems for handling the administrative tasks and regulatory compliance issues associated with life settlements;
- Any significant pending legal matters against the provider;
- Any business practices that enhances disclosure for investors and insureds selling their policies in the secondary market; and
- Other considerations that may help A.M. Best gauge the credit quality of the transaction.

If a provider has any ongoing financial interest in the transaction aside from its capacity as the source of policies for the issuer, A.M. Best requires full disclosure of that relationship.

C. Attorneys

One of the most fundamental concepts in life insurance is that of insurable interest. The insurable interest doctrine provides that in general, the beneficiary of an insurance policy must have 1) some relationship by blood or by law to the person being insured or 2) must have an economic interest in having the life, health or bodily safety of the individual insured continue. The insurable interest doctrine makes it possible, for example, for an individual to buy an insurance policy on his or her parents or business partner.

In the special case where an individual procures a policy insuring his or her own life and pays the premiums for the policy, that person is said to have an unlimited insurable interest in his or her own life and, as such, may designate any person as the beneficiary of the policy. That beneficiary need not have any particular relationship to the insured. When the policy owner is not the insured, the beneficiary must be a person or an entity with insurable interest in the insured's life. Insurable interest may be questionable with certain so-called premium financed policies where an irrevocable life insurance trust borrows money to pay premiums generally over the first two to five years of the policy's in-force period. A.M. Best expects that the issuer will conduct reviews of the origination documents of the life settlements, including trust documents (if applicable) to reasonably ensure that insurable interest laws are observed.

In general, after a provider makes a purchase offer to the seller of the insurance policy (normally, the insured), a sales documentation package is drafted. Through this documentation package, the issuer will contract to purchase from the seller all rights, titles and interests in the life settlement policy. The sales documentation package must be complete and must follow all applicable state insurance laws and regulations. The typical items that the issuer's attorneys review are as follows:

- The completeness of the sales documentation package (for each insured) for compliance with established regulations for life settlement acquisitions;
- The states in which each provider in the transaction is licensed to conduct business (for states that require such licenses) and the insurance regulations related to life settlements or viaticals for those states; and
- Any outstanding, significant legal issues surrounding the provider.

D. Servicers/Tracking Agents

The servicer of a life settlement portfolio is one of the most important service providers in a life settlement securitization because the success of the transaction ultimately depends on the timely payout of death benefits by insurance carriers. Such timely payouts cannot occur unless the policies remain in-force in the most cost-effective manner as possible and the death benefits are collected as efficiently as possible. A servicer's responsibilities can include the following: 1) making sure that the insurance policies stay in force by the timely payment of premiums to the proper carriers; 2) further optimizing premiums when necessary; 3) filing the necessary documents for policy conversions; 4) maintaining confidential up-to-date health records; 5) ordering new life expectancies, if necessary; 6) tracking the status of insureds and making the issuer aware of the death of such insureds on a timely basis; 7) maintaining correspondence with carriers to monitor any changes to the insurance policies; 8) facilitating the collection of death benefits upon the death of insureds; 9) providing reports to the issuer regarding deaths, and any changes to policy features; and 10) backing up data and providing the means for transferring such data to back-up servicers.

As part of the qualitative review of a transaction, A.M. Best will assess whether servicers have experience in servicing large pools of lives and whether they have the technological resources to perform such functions. Issuers that feel they can service the life settlements without employing an independent professional servicer must demonstrate to A.M. Best that they have the experience and the systems to track lives and to perform the major tasks typically performed by life settlement servicers.

E. Collateral Managers

A.M. Best expects the issuer to enter a collateral management agreement with a collateral manager or to demonstrate the ability to perform the duties of a collateral manager. Some of the duties of the collateral manager in life settlement securitizations include:

- Managing the selection and acquisition (through approved providers) of the life settlements;
- Optimizing the features of the insurance policies backing the life settlements;
- Determining the appropriate amount of the premium reserve;
- Determining whether to engage a longevity insurer or obtain a liquidity facility for the transaction;
- Investing cash balances in approved, high-quality, short-term instruments;
- Determining which policies should lapse or sell in the event of a liquidity crisis; and
- Performing other duties in the interest of the transaction's security holders.

Some of the factors that A.M. Best considers when performing a qualitative review of a collateral manager are as follows:

- Experience in life settlement investments and portfolio optimization;
- Knowledge of insurance policy features or access to experienced consultants;
- Actuarial experience either on staff or through consultants;
- Staffing and resources necessary to support the collateral management activities;
- The quantitative skills to create financial models to select/manage a life settlement

portfolio and to determine which policies to dispose of, lapse or modify (if necessary); and
• The systems and infrastructure necessary to carry out its duties.

F. Backup Service Providers

Backup servicing agreements are important in life settlement transactions, because the industry is in its development stage and servicers usually are small, unrated entities. A.M. Best recommends that issuers seek backup servicers (especially backup tracking agents) and collateral managers (which presumably also perform policy administration and optimization).

A.M. Best recommends the use of an active backup servicer that has the ability to easily transition to the role of the primary portfolio servicer. The backup servicer should have the electronic systems in place to accept the data transmitted by the primary servicer and should be able to prepare reports on tracking activities as requested by A.M. Best. The backup collateral manager should meet the same general requirements described in **Section 2E** as to the level of expertise and experience.

G. Auditors

Public accountants play an important role in monitoring the activity of the bankruptcy-remote entity that issues the life settlement-backed securities. Accountants assist in the evaluation and identification of "GAAP" internal control and reporting-related issues. In addition, they perform specific, year-end audits to express an opinion on the consolidated financial statements of the bankruptcy-remote entity. In cases where the rating of the securities in the transaction is independent of the rating of the arranger, A.M. Best expects that a certified public accounting firm will be engaged to perform the following services:

• Perform audits of the books and records of the issuer (i.e., bankruptcy-remote entity);
• Issue a yearly report that expresses an opinion on the consolidated financial statements issued by the bankruptcy-remote entity;
• Review the internal controls over cash receipts and disbursements performed at the legal entity; and
• Issue an opinion as to the GAAP consolidation requirements to the owners of the bankruptcy-remote entity.

H. Arrangers of the Transaction

The arrangers of the life settlement securitization transaction should define clearly their financial interest in the transaction. In addition, for arrangers that are not affiliates of large financial institutions, A.M. Best expects to be presented with their backgrounds, including their previous occupations and experience with life settlements.

3. Policy In-Force Period/Proper Transfer of the Policy

Any policy contemplated for the collateral in a life settlement securitization is required to have been in force for at least 24 months before being purchased in the secondary market. Converted policies are considered new policies if new contestability or suicide conditions are imposed on the policies. It is the issuer's respon-

sibility to ensure that its providers keep track of the dates on which policies were acquired by the insureds and when the policies were sold in the secondary market.

In addition, there should be some redundant checks and balances to ensure the proper transfer of policies to the bankruptcy-remote vehicle and to ensure that such policies will be unencumbered by challenges from relatives, former spouses and others. Attorneys are best qualified to give an opinion on whether policy transfers have followed the proper protocols.

4. Diversity

A. Disease/Insurance Company

Diversity is an important factor in determining the composition of the collateral pool for life settlement transactions. In general, correlation among insureds in a life settlement portfolio occurs when a cure is discovered for a disease suffered by two or more insureds, because their life expectancies are increased simultaneously. Therefore, A.M. Best is unlikely to rate transactions based on only one specific disease such as Alzheimer's or diabetes without applying severe stresses on the transactions.

While life settlement portfolios are inherently diverse, based on the statistical distribution of disease categories as determined by the medical underwriters, A.M. Best nevertheless expects that issuers will observe the maximum limits shown in Exhibit 4 on the broad disease categories in the collateral pool. The categorization of diseases is determined by the assignment of debits as described in **Section 2A.1**.

Diversity of insurance companies also is important in life settlement transactions. A.M. Best recommends that the aggregate face value of the policies issued by any one insurance company not exceed 15%. If this threshold is exceeded, more stresses will be applied to the default probabilities assumed for the carriers backing the life settlements.

B. Number of Lives, Policy Size

The number of lives in a portfolio of life settlements can help dampen the volatility of the cash flows produced by A.M. Best's stochastic life settlement model, which is discussed later in this document. Naturally, the more lives in the pool, the narrower the distribution of maturities produced by the model, but the desire to have a large portfolio must be balanced with: 1) the marginal benefit (in terms of narrowing the dispersion of maturities) gained by adding more lives to the portfolio, and 2) the fact that it can take a long time to accumulate a sizable portfolio of life settlements.

For these reasons, A.M. Best believes that at least 300 lives with similar features are necessary to produce more stable cash flows, although in practice, it is extremely difficult to achieve absolute uniformity in a pool of life settlements. If fewer lives are included in the life settlement portfolio, and there are no longevity hedges in the transaction, A.M. Best will apply additional stresses in evaluating the credit quality of the securities in the transaction. As for the concentration associated with a life, no one life should comprise more than 3.33% of the face value of the entire collateral pool.

It is important to note that a flawed approach by the medical underwriters in how they determine either life expectancies or mortality ratings will not be ameliorated simply by having a large number of lives in a life settlement pool. Such systematic errors will simply be duplicated across a larger portfolio.

5. Longevity Risk Mitigation

Longevity risk is the risk that an insured lives longer than was reasonably predicted by medical underwriters. The longer the insured lives, the more premiums the owner of the life settlement will have to pay, and the further in the future the death benefits will be realized. Longevity risk typically can be managed by a longevity insurance policy that helps the issuer mitigate the risk that maturities will not meet defined thresholds over specific periods. While A.M. Best does not require longevity insurance, such contingency insurance may enhance the transaction, depending on the cost to the issuer, although it comes with the additional credit risk of the longevity insurer. The longevity insurer must be a rated entity. Please go to *www.ambest.com/methodology* for methodologies associated with the rating of reinsurers and insurers.

6. Liquidation Prospects/Liquidity Risk Mitigation

A.M. Best believes the sale of life settlements is not a viable option to meet liquidity needs of any transaction because of: 1) the uncertainties surrounding the liquidation value of an individual life settlement; 2) the extensive amount of time and effort it might take to actually sell life settlements; and 3) the dramatic effect excessive sales of life settlements would have on the transaction's future cash flows. In short, A.M. Best takes a dim view of any transaction that relies on the liquidation value of policies to meet cash needs.

A common method of mitigating liquidity risk is to have adequate cash in a reserve fund to meet short-term cash-flow needs. The disadvantage of this method is that a large amount of cash in reserve reduces the available funds for purchasing life settlements.

Another common method of mitigating liquidity risk is with a liquidity facility from a rated financial institution. The liquidity facility can be used to pay premiums on the policies and/or interest to the noteholders. The financial institution offering the liquidity facility typically would place a lien on the life settlements in the transaction, and the repayment of the funds borrowed by the transaction usually is at the top of the transaction's "priority of payment" list or "waterfall." Maintaining and using a liquidity facility can be beneficial if it is not expensive and if the floating-rate costs are swapped to fixed costs. The major disadvantage of a liquidity facility, however, is that it introduces the credit risk of the liquidity provider to the transaction. A.M. Best expects that the optimal size and term of the liquidity facility will be determined through the modeling of the transaction in order to ensure timely payment of premiums and/or interest and principal to noteholders.

7. Premium Optimization

Issuers may choose to optimize premiums on certain types of insurance policies (such as universal life and variable universal life policies) by using the cash values in the policies to reduce premium payments or simply by reducing premium payments to the minimum levels necessary for keeping the policies in force. A.M. Best expects the optimization of premiums to be done by independent, professional actuarial organizations unless the arrangers have in-house access to actuaries who can perform the same function. In addition, A.M. Best expects the arrangers of the transactions to engage actuaries to periodically review the efficacy of the premium optimizations.

8. Industry Expertise

A significant qualitative aspect of A.M. Best's analysis is the assessment of the issuer's expertise in life settlements and structured securities. A small number of participants comprise the life settlement industry. Its participants have developed reputations in various areas, such as the ability to source policies, integrity in soliciting objective life expectancies and other matters related to the efficient execution of life settlement transactions. A.M. Best expects the issuer (or its representatives) to demonstrate a high degree of knowledge about policy providers, tracking agents, medical underwriters and other significant service providers associated with the transaction. In addition, A.M. Best expects to be informed of any significant legal actions or complaints against any service provider that may be involved in the transaction.

9. General Legal Review/Tax Opinion/Documentation

The following are some of the other expected legal opinions, conditions and verifications for setting up a transaction collateralized by life settlements:

- Unqualified legal opinion indicating that the transfer of life settlements from the seller to the issuer constitutes a true or absolute sale, not a pledge of collateral. Absence of this opinion would lead A.M. Best to conclude that the credit quality of the securities in the transaction is very closely linked to the credit quality of the transferrer.
- Legal opinion stating that if the transferrer becomes insolvent, neither the issuer nor its assets or liabilities would be substantively consolidated with the transferrer. Absence of this opinion would lead A.M. Best to conclude that the credit quality of the securities in the transaction is very closely linked to the credit quality of the transferrer.
- Unqualified legal opinion that the issuer will satisfy special-purpose, bankruptcy-remote criteria such as:
  - ¤ Issuer's business must be restricted to the purchase of the life settlements and the issuance of the rated debt;
  - ¤ Issuer may not incur any additional debt unless the additional debt is subordinated fully to the rated debt and the subordination is explicitly stated in the legal documents;
  - ¤ Additional debt will not impair the rating of the rated debt;
  - ¤ Issuer should have a separate corporate existence with independent officers and directors, separate books and records, and appropriate meetings of the board of directors to authorize corporate action;
  - ¤ Issuer shall not engage in any dissolution, liquidation, consolidation, merger or asset sale (other than as provided in the relevant transaction documents) or amendment of its organizational documents so long as the rated securities are outstanding;
  - ¤ All of the issuer's assets, such as the life settlements, the various proceeds accounts, the escrow accounts and all other assets that generate income for the structure, are pledged to secure the issuer's debt; and
  - ¤ Written agreements with all service providers.
- Normal documentation associated with private placements such as: offering memorandum, trust indenture, trustee agreements, etc.
- Disclosure of any agreements (written or unwritten) between the issuer and any other parties that outline the distribution of the residuals in the transactions after the rated debt has been fully redeemed.

Basic Data Requirements

The following is a list of some of the data requirements for a debt rating. A modified list may be necessary depending on the exact structure of the transaction under consideration. A.M. Best will provide a Microsoft Excel template in which some of the data should be entered by the issuer's representatives. A.M. Best expects that some of the required information will be available in the term sheet of the transaction and in the indenture.

1) Collateral

For each life/policy in the life settlement securitization collateral pool, provide the following (as applicable):

- Birth date of the insured and age last birthday (ALB) at the time of last underwriting;
- Gender;
- Smoking status (smoking/non-smoking);
- Monthly face value (death benefits) up to policy expiry date;
- Monthly premiums up to policy expiry date;
- Any and all life expectancies from last full medical underwriting (medical underwriting done with up-to-date medical records);
- Any and all mortality ratings associated with the last full medical underwriting;
- First Duration (in months) – the period in months between the date of the first full medical underwriting and the first month of the securitization;
- Second Duration (in months) – the period in months between the date of the latest full medical underwriting and the first month of the securitization;
- Unique identification number for each policy;
- Unique alpha-numeric identifier for primary life and secondary life (if joint) associated with each policy;
- Classification of the types of policies in the following categories: universal life, whole life, variable life, variable universal life, survivorship universal life, term, etc.;
- Policy expiration date, if applicable;
- In-force date of the policy;
- Date the policy was initially sold into the secondary market, if available;
- Date the policy was acquired for the transaction;
- Disease code/category, if available;
- State in which policy was issued (state of origination);
- Precise operating insurance carrier name and the corresponding A.M. Best number;
- If requested, the insurance agents involved in the origination of specific categories of policies (such as premium financed policies or policies with death benefits exceeding specific thresholds); and
- Premium Financed Policies
  - ¤ Identify known and suspected premium financed policies;
  - ¤ Identify program names associated with these premium financed policies;
  - ¤ Tabulate premiums already paid up to the first month of the securitization; and
  - ¤ Identify "Carrier Approved" premium financing programs, if any.

2) Transaction Structure

- Size/tranches of securities to be issued;
- Size of unrated equity;
- Interest rates paid on the securities;
- Liquidity facility (including repayment terms and collateral liens);

- Reserve amount – identify if any additional reserves for legal challenges or re-underwriting are in the transaction structure;
- Credit enhancements/guarantees; and
- Waterfall
  - ¤ Clear outline of priority of payments;
  - ¤ Clear definition of what constitutes a default including specifics about whether negative amortization is allowed; and
  - ¤ Specify any start-up and ongoing expenses, such as:
    - – Start-up expenses
    - – Trustee
    - – Administrative
    - – Tax advisers
    - – Tracking agent
    - – Collateral management
    - – Auditors
    - – Attorneys
    - – Warehouse funding, if any
    - – Medical underwriters
    - – Actuaries
    - – Any other expenses

Evaluating the Credit Risk of the Securities

This section outlines a few of the significant aspects of evaluating the credit risk of securities backed by life settlements. A more detailed review of the model assumptions will be discussed with the issuer at the inception of the securitization.

1. Mortality Profile of the Life Settlements

The ratings assigned to life settlement-backed securities are determined primarily by the mortality profile of the lives associated with the collateral pool and other factors related to credit and regulatory risks. (see **Exhibit 5** for a list of the main risks to investors). The parameters necessary to gauge the mortality profile of the lives associated with life settlement pools include the insured's: age last birthday; gender; smoking status; documented specific impairments; assumed mortality improvements; lifestyle and other factors. Using these parameters, medical underwriters can provide: 1) a standard mortality table upon which debits and credits are applied; 2) a mortality rating that the medical underwriter applies to its base mortality table to derive the life expectancy for each insured; 3) a life expectancy estimate for each insured (including the joint life expectancy estimates for second-to-die policies); 4) a mortality or survivorship schedule for each insured (given medical impairments); 5) the primary disease category for each insured, if one has been identified; and 6) any reports that validate the historical accuracy of the medical underwriters' life-expectancy projections.

If a medical underwriter publicly provides its standard mortality tables; the mortality ratings for the insureds in a life settlement pool; and its methodology for applying the mortality ratings to the tables, A.M. Best is willing to review and, perhaps, use the mortality tables for its analyses as long as they have been constructed with the help of a reputable independent actuarial firm that provides a report on the methodology used for constructing the tables.

A.M. Best is aware, however, that some medical underwriters consider their standard mortality tables to be proprietary, and thus only provide life expectancies and mortality ratings in their

Exhibit 5
Main Risks to Investors

Origination Risk – The risk that originators may have violated their fiduciary responsibilities to the insureds; originations have been done in contravention to existing state and federal regulations; and that originators have exposed the investor to insurable interest and fraud challenges by insurers.
Risk of Life Expectancy Misestimation – The risk that medical underwriters have systematically misestimated life expectancies and/or that they have not followed established and reasonable standards for estimating life expectancies.
Risk of Adverse Selection – The risk that the insureds who sell policies to the life settlement market know more about their health than buyers, and thus may actually be healthier than the indications from medical records evaluated by medical underwriters.
Servicer/Tracking Agent Risk – The risk that the servicer charged with tracking deaths, optimizing policies, facilitating the collection of death benefits and making decisions related to keeping the policies in force is not competent to provide such services.
Longevity Risk – The risk that the life expectancy of insureds could increase due to cure discoveries, which means that investors will have to pay premiums longer than expected.
Credit Risk of Insurers – The risk that insurers may default on the payment of death benefits.

reports. In such cases, A.M. Best will either 1) use the mortality ratings as provided if it has reason to believe that the medical underwriter's standard table is similar to the 2008 Valuation Basic Table (VBT) (or any base mortality table commonly used in the life settlement industry at the time), or 2) solve for the mortality ratings that will yield the provided life expectancies.

2. Adjustments to Mortality Ratings

Mortality ratings issued by medical underwriters or derived by solving for life expectancies are modified by A.M. Best before applying them to the mortality rates associated with lives in a given portfolio. The modifications are influenced by 1) A.M. Best's judgment based on its observations of the general performance of life settlement portfolios, 2) experience studies conducted by professional actuarial organizations regarding underwriting performance, and 3) early indications about the differences between the 2008 and 2014 VBTs.

A.M. Best notes that the level of modifications to mortality ratings described in this section may vary based on:

- The specific nature of the underwriting regimen followed by the primary medical underwriter involved in a given transaction;
- Any future independent actuarial review of the efficacy of the primary medical underwriter;
- The specific mortality table that undergirds the mortality ratings and/or the life expectancies issued by the primary medical underwriter; and
- The method of origination – whether/how the policies were purchased in the secondary or tertiary market, and other factors.

The adjusted mortality ratings used in simulating cash flows in a transaction are derived by multiplying three factors: the Basic Adjustment Factor, the Age-Based Adjustment Factor and the Ratings Wear-Off Adjustment Factor. The illustrative example used in demonstrating the application of these factors to the mortality ratings is based on a life settlement with the following associated characteristics:

- Issued to a male non-smoker who just turned 77;
- Medical underwriting indicates a mortality rating of 200% on his 77th birthday based on the 2008 VBT Primary Table (age last birthday);
- The life settlement was not premium financed; and
- The death benefit associated with the life settlement is $1 million.

A. Basic Adjustment Factor

The Basic Adjustment Factor is used to adjust the mortality rating for each life depending on 1) the level of the mortality rating, 2) the aggregate death benefits associated with the life and 3) whether any of the policies associated with the life were premium financed or were traditional life settlements. **Exhibit 6** shows the Basic Adjustment Factor for life settlements classified in six main categories.

Exhibit 6

Basic Adjustment Factor

Category	Mortality & Death Benefit Ranges	Basic Adjustment Factor (Male/Female)
1	MR<=125%, NPF*	70%/75%
2	125%<MR<=200%, DB**>= $1mm, NPF	75%/85%
3	125%<MR<=200%, DB< $1mm, NPF	85%/90%
4	MR>200%, NPF	90%/100%
5	MR>200%, PF***	75%/75%
6	MR<=200%, PF	50% from Age Last Birthday (at time of latest underwriting) grading linearly to 70% by age 95 for both male and female

*NPF = Non-premium Financed **DB = Death Benefit ***PF = Premium Financed

In this example, the applicable Basic Adjustment Factor would be 75% for a male issued a mortality rating of 200% for a $1 million, non premium-financed policy.

B. Age-Based Adjustment Factor

A.M. Best linearly reduces the mortality rating for each life after attained age 85. The reduction remains constant from attained age 95 on. For males, the Age-Based Adjustment Factor from attained age 85 to attained age 95 grades from 100% to 85%, respectively. For females, the Age-Based Adjustment Factor from attained age 85 to attained age 95 grades from 100% to 95% respectively. The following are the equations for the Age-Based Adjustment Factors for males and females:

*Male Age-Based Adjustment Factor = -1.5% * Attained Age in Years + 227.5%*
*Female Age-Based Adjustment Factor = -0.5% * Attained Age in Years + 142.5%*

The calculated Age-Based Adjustment Factor, using the formula above, for each gender is capped at 100% at any given attained age.

C. Ratings Wear-Off Adjustment Factor

The Ratings Wear-Off Adjustment Factor is designed to reduce the effect of the mortality ratings issued by medical underwriters (or derived from life expectancies issued by underwriters) over time. A.M. Best assumes that mortality ratings are reliable for a period defined as the Ratings Stability Period, which is a maximum of seven years. After the Ratings Stability Period, the mortality ratings are assumed to wear off linearly to 100% by age 95, and the wear-off period must occur over at least a three-year period regardless of age. The number of years in which the mortality wears off is the Wear-Off Period. The Ratings Stability Period and Wear-Off Period are calculated as follows:

Ratings Stability Period =MAX (0, MIN [7, 95 – Age Last Birthday[1]])
Wear-Off Period = MAX (3, 95-Age Last Birthday – Ratings Stability Period)

1. The Age Last Birthday is as of the date of the latest medical underwriting.

If the Ratings Stability Period is 0 (i.e. if Age Last Birthday as of the last underwriting date is greater than or equal to 95), the mortality rating is assumed to revert to 100% within three years of the Age Last Birthday.

In the standard example of a 77-year-old male nonsmoker with a mortality rating of 200%, the Ratings Stability Period and the Wear-Off Period are calculated as 7 and 11 years respectively, in the following manner:

Ratings Stability Period = MAX (0, MIN [7, 95 – 77]) = 7 years
Wear-Off Period = MAX (3, 95-77 – 7) = 11 years

Therefore, in the standard example, the Ratings Wear-Off Adjustment Factor is maintained at 200% for a period equal to the Ratings Stability Period of seven years and then is scaled down linearly for 11 years to 100% by attained age 95 (i.e., the 18th duration). Please see **Exhibit 7** (column A) for the Ratings Wear-Off Adjustment Factor associated with this example.

If the insured's Age Last Birthday had been 96 instead of 77, the Ratings Stability Period and the Wear-Off Period would have been calculated as follows:

Ratings Stability Period = MAX (0, MIN [7, 95 – 96]) = 0 years
Wear-Off Period = MAX (3, 95-96 – 7) = 3 years

In this example, the Ratings Stability Period is 0, and the Wear-Off Period is three years from the Age Last Birthday. Please see **Exhibit 7** (column B) for the Ratings Wear-Off Adjustment Factor associated with this example.

If the insured's Age Last Birthday had been 93 instead of 77, the Ratings Stability Period would have been calculated as follows:

Ratings Stability Period = MAX (0, MIN [7, 95 – 93]) = 2 years
Wear-Off Period = MAX(3,95 – 93 – 2) = 3 years

In this example, the 200% mortality rating would remain stable for two years (the Ratings Stability Period) and then would wear off over a three-year period (the Wear-Off Period). Please see **Exhibit 7** (column C) for the Ratings Wear-Off Adjustment Factor associated with this example.

After determining the Ratings Stability Period for each insured, the Ratings Wear-Off Adjustment Factor is shown in **Exhibit 7** for each of the three examples in this section.

D. Combining Adjustment Factors

The Basic Adjustment Factor, the Age-Based Adjustment Factor and the Ratings Wear-Off Adjustment Factor are multiplicative and ultimately produce the effective mortality ratings at the appropriate corresponding durations. Column D in **Exhibit 8** shows the resulting Adjusted Mortality Rating over a 20-year period for the illustrative example.

The Adjusted Mortality Rating is calculated for each life in the portfolio of life settlements for each year. Ultimately, the mortality rate (from the appropriate mortality table such as the 2008 VBT) for each life and for each year is multiplied by the Adjusted Mortality Rating for that life and year to produce the corresponding Adjusted Mortality

Exhibit 7
Ratings Wear-Off Adjustment Factor*
(Mortality Rating at ALB**=200%)

Duration	A Ratings Wear-Off Adjustment Factor (ALB = 77)	B Ratings Wear-Off Adjustment Factor (ALB = 96)	C Ratings Wear-Off Adjustment Factor (ALB = 93)
1	200%	167%	200%
2	200%	133%	200%
3	200%	100%	167%
4	200%	100%	133%
5	200%	100%	100%
6	200%	100%	100%
7	200%	100%	100%
8	191%	100%	100%
9	182%	100%	100%
10	173%	100%	100%
11	164%	100%	100%
12	155%	100%	100%
13	145%	100%	100%
14	136%	100%	100%
15	127%	100%	100%
16	118%	100%	100%
17	109%	100%	100%
18	100%	100%	100%
19	100%	100%	100%
20	100%	100%	100%

* Reflects Adjusted Mortality Rating at Year-End.
** ALB = Age Last Birthday

Rate as shown in Column C of **Exhibit 9** using the illustrative example. Thus, a matrix of Adjusted Mortality Rates (the Adjusted Mortality Matrix) is created for calculating the cash flows of the life settlement portfolio.

Please note that the calculations above are performed at the beginning of the transaction after considering the elapsed time between the last full medical underwriting and the first month of the securitization.

3. Insurance Company Default Risk

A.M. Best believes that general corporate-bond default statistics are inappropriate for assessing insurer credit risks because of the unique regulatory and accounting environment in which insurers operate, and because relatively few insurers issue public debt. As such, there are very few data points available to perform a meaningful insurance default study based on the generally accepted definition of default: missed interest or principal payments on financial obligations or a bankruptcy filing. Therefore, "financial impairment" is a more measurable indication of financial duress for insurance companies.

A.M. Best designates a company as financially impaired upon the first official regulatory action taken by a state insurance department. Such actions include involuntary liquidations because of insolvency, as well as other regulatory processes such as supervision, rehabilitation, receivership, conservatorship, a cease-and-desist order, suspension, license revocation, administrative order or any other action that restricts an insurance company's freedom to conduct its insurance business as normal. Companies that enter voluntary liquidation and are not under financial duress at that time are not counted as financially impaired.

It is important to note that financial impairment of insurance companies often occurs even if the companies have not been declared insolvent. For instance, an impaired company's capital and surplus could have been deemed inadequate to meet risk-based capital requirements, or there might have been regulatory concern regarding its general financial condition. Thus, at any given rating level, more insurers would be impaired, according to the A.M. Best definition, than actually would default on policyholder obligations or, perhaps, on other obligations, such as senior or subordinated debt.

Based on the definition of financial impairment, A.M. Best has conducted and continues to conduct extensive studies to determine the impairment rates of insur-

Exhibit 8
Adjusted Mortality Rating
(Example: Male; Age=77; Mortality Rating=200%; DB=$1mm, NPF)

Duration	A Ratings Wear-Off Adjustment Factor	B Basic Adjustment Factor	C Age-Based Adjustment Factor	D* Adjusted Mortality Rating**
1	200%	75%	100.00%	150.00%
2	200%	75%	100.00%	150.00%
3	200%	75%	100.00%	150.00%
4	200%	75%	100.00%	150.00%
5	200%	75%	100.00%	150.00%
6	200%	75%	100.00%	150.00%
7	200%	75%	100.00%	150.00%
8	191%	75%	100.00%	143.18%
9	182%	75%	98.50%	134.32%
10	173%	75%	97.00%	125.66%
11	164%	75%	95.50%	117.20%
12	155%	75%	94.00%	108.95%
13	145%	75%	92.50%	100.91%
14	136%	75%	91.00%	93.07%
15	127%	75%	89.50%	85.43%
16	118%	75%	88.00%	78.00%
17	109%	75%	86.50%	70.77%
18	100%	75%	85.00%	63.75%
19	100%	75%	85.00%	63.75%
20	100%	75%	85.00%	63.75%

*D = A×B×C
**Reflects Adjusted Mortality Rating at year end.

ance operating companies. These impairment rates can serve as proxies for defaults on financial obligations made by those companies. Through the impairment studies, which currently include more than 5,000 insurance companies and more than 700 impairments, A.M. Best has created Best's Idealized Default Rates of Insurers (see **Exhibit 10**), which shows assumed default rates of insurers on the credit market scale familiar to capital market participants. The insurer default rates on this table are applied to the insurance companies in life settlement securitizations. For more information on the A.M. Best insurance impairment studies, please go to the A.M. Best Web site, *www.ambest.com*.

If an insurer is not rated by A.M. Best but is rated by another nationally recognized statistical rating organization (NRSRO), the long-term unsecured debt rating of that NRSRO will be used. Insurers with no ratings from any NRSROs generally will be assigned a rating of "bb+", the highest non-investment grade issuer credit rating (ICR) issued by A.M. Best. Insurers with no ratings from any NRSROs and that have become impaired in the past (and recovered from such impairments) will be assigned an ICR of "b". It should be noted that insurers with no ratings from any NRSROs will be downgraded severely in the stress scenarios presented to A.M. Best's credit rating committee.

4. Recoveries of Death Benefits After Insurer Impairments

Insurance company impairments may result in the diminution of death benefits. In general, guaranty funds cover nearly all death benefits in the event of an insurance company's impairment, up to a limit of about $300,000 in most states and $500,000 in a few others. However, this limit is probably smaller than the face values of the policies in most life settlement transactions, which generally range from $1 million to $2 million. The unpaid death benefits are paid out of the estate of the insolvent insurance company if the company goes into liquidation. While the anecdotal evidence is that policyholders rarely lose money in life insurance company insol-

Exhibit 9
Adjusted Mortality Rate
(Example: Male; Age=77; Mortality Rating=200%; DB=$1mm, NPF)

Duration	A Mortality Rate[2]	B Adjusted Mortality Rating[3]	C[1] Adjusted Mortality Rate
1	0.89%	150.00%	1.33%
2	1.34%	150.00%	2.00%
3	1.83%	150.00%	2.73%
4	2.36%	150.00%	3.52%
5	2.95%	150.00%	4.39%
6	3.58%	150.00%	5.32%
7	4.28%	150.00%	6.35%
8	5.26%	143.18%	7.44%
9	6.54%	134.32%	8.68%
10	7.92%	125.66%	9.85%
11	9.44%	117.20%	10.97%
12	11.14%	108.95%	12.07%
13	12.95%	100.91%	13.06%
14	14.72%	93.07%	13.77%
15	16.46%	85.43%	14.24%
16	18.28%	78.00%	14.57%
17	20.13%	70.77%	14.71%
18	21.86%	63.75%	14.55%
19	23.54%	63.75%	15.73%
20	25.30%	63.75%	16.97%

1. $C = 1-(1-A)^{\wedge B}$
2. From 2008 VBT primary table.
3. Reflects Adjusted Mortality Rating at year end.

Exhibit 10
Best's Idealized Default Rates of Insurers
On the credit market scale.

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-
1	0.03%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	5.80%	7.61%	9.41%	10.17%	11.32%	11.98%
2	0.11%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	10.60%	14.35%	18.22%	19.40%	21.50%	22.75%
3	0.20%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	15.08%	20.60%	26.23%	27.74%	30.61%	32.40%
4	0.31%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	19.26%	26.37%	33.48%	35.27%	38.75%	41.01%
5	0.45%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	23.14%	31.69%	40.05%	42.04%	45.99%	48.67%
6	0.60%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%	6.51%	10.63%	15.71%	26.75%	36.58%	45.96%	48.11%	52.40%	55.45%
7	0.77%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%	7.51%	12.26%	17.96%	30.09%	41.06%	51.27%	53.53%	58.04%	61.43%
8	0.96%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%	8.45%	13.81%	20.09%	33.18%	45.14%	56.02%	58.35%	62.99%	66.67%
9	1.15%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%	9.34%	15.28%	22.08%	36.04%	48.86%	60.25%	62.62%	67.31%	71.24%
10	1.36%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%	10.18%	16.67%	23.95%	38.66%	52.23%	64.01%	66.40%	71.06%	75.21%
11	1.58%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%	10.96%	17.98%	25.70%	41.07%	55.27%	67.32%	69.71%	74.29%	78.63%
12	1.81%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%	11.69%	19.21%	27.34%	43.28%	58.01%	70.22%	72.60%	77.06%	81.56%
13	2.05%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%	12.36%	20.36%	28.86%	45.30%	60.46%	72.75%	75.12%	79.42%	84.05%
14	2.29%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%	12.99%	21.44%	30.28%	47.14%	62.64%	74.94%	77.30%	81.41%	86.16%
15	2.53%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%	13.57%	22.43%	31.59%	48.82%	64.59%	76.81%	79.17%	83.09%	87.94%
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-

Source: Derived from Best's Idealized Default Matrix published Dec. 5, 2007

vencies, a rigorous life settlement model must include the possibility of losses should such events occur, since these are long-term transactions. In addition, no one can be certain that if more life settlement transactions are consummated, regulators won't impose restrictions on payments to any entities that own life settlements in the event of insurance company impairments. A.M. Best generally will assume the recovery rate after insurance company impairments to be 80% over the amount recovered from the guaranty funds.

5. Death Benefit Collection Period

The prompt collection of death benefits will depend on the competence of the servicer, particularly in its function as a tracking agent and its efficiency in helping the issuer in obtaining death certificates and performing other duties pursuant to the prompt collection of death benefits. Unless the issuer presents credible data to show the historical lag between the time of death and the time of the collection of death benefits for the life settlement pool being securitized, A.M. Best will assume that there is a three-month lag between the death of an insured and the collection of the death benefits from an insurer.

6. Monte Carlo Simulation Process

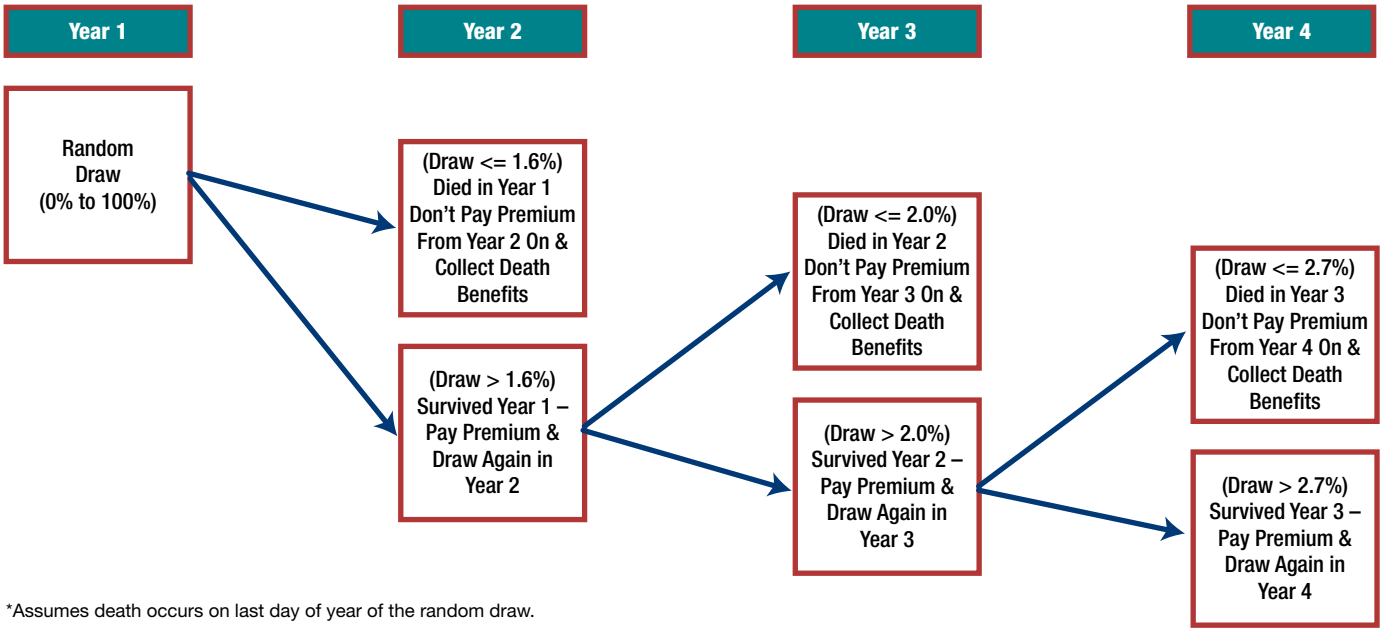
At its most basic level, A.M. Best's Monte Carlo simulation model generates cash flows for all policies after considering the Adjusted Mortality Matrix (the matrix of Adjusted Mortality Rates for each insured) and associated premiums and death benefits. As an illustrative example, assume that a 75-year-old male insured has a 1.6% probability of dying by age 76, a 2.0% probability of dying by age 77 (if he survives age 76) and a 2.7% probability of dying by age 78 (if he survives age 77).

In the simulation process, for the first year when the probability of the insured dying is 1.6%, A.M. Best draws a random number from a uniform distribution between 0% and 100%. If that random number is less than or equal to 1.6%, the insured is assumed dead, premium payments on the life are stopped (after the first year), and the death benefit is collected. If that random number is greater than 1.6%, the insured is assumed to be alive, the insured survives to the second year, and premium payments continue. In the second year, where the probability of the insured dying is 2.0%, a random number is drawn once again and either the person lives (i.e., the random number is above 2.0%) or dies (i.e., the random number is less than or equal to 2%). In the third year, where the probability of the

insured dying is 2.7%, a random number is drawn once again and either the person lives (i.e., the random number is above 2.7%) or dies (i.e., the random number is less than or equal to 2.7%). **Exhibit 11** shows the possible pattern of death or survival over a three-year period for this example.

The analysis is the same for a large portfolio of life settlements. For each trial in the simulation process, the model aggregates the cash flows (death benefits, premium payments, etc.) for a portfolio of life settlements and makes payments as prescribed by the transaction's waterfall. When cash-flow shortfalls occur and note payments are not made in full, the model records a default. The ultimate output of A.M. Best's cash-flow model is the

Exhibit 11
Paths of Death or Survival in the Monte Carlo Simulation*



*Assumes death occurs on last day of year of the random draw.

default rate — the total number of defaults for all trials divided by the number of trials. This default rate is then compared with Best's Idealized Default Matrix (see **Exhibit 12**), which shows the default rate associated with each debt rating.

In general, the calculated default rate is associated with the rating on Best's Idealized Default Matrix at the corresponding expected maturity of the securities. The life settlement asset class generally has a maturity profile that can be extended considerably by longevity risk and the risk of systematic mis-estimations of life expectancies by medical underwriters. For these reasons, A.M. Best expects the average maturity profile of life-settlement-backed securities to be longer than the corresponding measure in the typical long-dated, asset-backed securities transaction, which has more predictable cash flows.

7. Possible Stresses and Scenarios

Some of the stresses and scenarios associated with life settlement securitization include:

1. Mortality Ratings – stresses may be applied in approximately the first five years of the transaction, especially if simulated near-term aggregate portfolio maturities are markedly higher than recent portfolio experiences as defined by the Annual Run Rate described in the "Transaction Surveillance" section of this criteria report;

Exhibit 12
Best's Idealized Default Matrix

Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.03%	0.03%	0.04%	0.05%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%	0.67%	1.20%	2.30%	2.81%	5.80%	7.61%	8.51%	9.41%	10.17%
2	0.08%	0.11%	0.13%	0.23%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%	1.96%	3.26%	5.28%	7.30%	10.60%	14.35%	16.84%	18.22%	19.40%
3	0.14%	0.20%	0.26%	0.42%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%	3.18%	5.23%	8.10%	11.46%	15.08%	20.60%	24.46%	26.23%	27.74%
4	0.22%	0.31%	0.41%	0.62%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%	4.35%	7.11%	10.78%	15.33%	19.26%	26.37%	31.41%	33.48%	35.27%
5	0.31%	0.45%	0.58%	0.84%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%	5.46%	8.91%	13.31%	18.90%	23.14%	31.69%	37.74%	40.05%	42.04%
6	0.42%	0.60%	0.79%	1.08%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%	6.51%	10.63%	15.71%	22.19%	26.75%	36.58%	43.48%	45.96%	48.11%
7	0.53%	0.77%	1.01%	1.33%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%	7.51%	12.26%	17.96%	25.22%	30.09%	41.06%	48.67%	51.27%	53.53%
8	0.66%	0.96%	1.25%	1.58%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%	8.45%	13.81%	20.09%	27.98%	33.18%	45.14%	53.34%	56.02%	58.35%
9	0.79%	1.15%	1.51%	1.85%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%	9.34%	15.28%	22.08%	30.51%	36.04%	48.86%	57.53%	60.25%	62.62%
10	0.94%	1.36%	1.79%	2.13%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%	10.18%	16.67%	23.95%	32.80%	38.66%	52.23%	61.27%	64.01%	66.40%
11	1.09%	1.58%	2.08%	2.42%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%	10.96%	17.98%	25.70%	34.87%	41.07%	55.27%	64.58%	67.32%	69.71%
12	1.24%	1.81%	2.38%	2.72%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%	11.69%	19.21%	27.34%	36.74%	43.28%	58.01%	67.50%	70.22%	72.60%
13	1.40%	2.05%	2.69%	3.02%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%	12.36%	20.36%	28.86%	38.40%	45.30%	60.46%	70.05%	72.75%	75.12%
14	1.57%	2.29%	3.01%	3.33%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%	12.99%	21.44%	30.28%	39.89%	47.14%	62.64%	72.25%	74.94%	77.30%
15	1.73%	2.53%	3.34%	3.64%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%	13.57%	22.43%	31.59%	41.20%	48.82%	64.59%	74.13%	76.81%	79.17%
	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-

Source: Best's Idealized Default Matrix published Dec. 5, 2007

2. Premium Financed Policies – additional stresses on mortality ratings and/or reduction of death benefits due to the possibility of rescissions;
3. "Traditional" premium financed policies may be modeled as regular life settlements;
4. Mortality Improvements – increase in mortality improvement factors;
5. Premium Payments – increase in premiums due to the potential for increases in the cost of insurance (which is assumed to occur upon carrier default) and the possibility of incorrect optimization of insurance premiums;
6. Death Benefit Collection Lag – the time between death of the insureds and the collection of the death benefits may be changed based on historical trends;
7. Rate Increase – increase of the interest rates for unhedged floating-rate funding;
8. Investment Returns – a decrease in the assumed investment returns for the reserve account;
9. Insurance Company Defaults – increase in insurance company default assumptions and decrease in recoveries;
10. Rating of Liquidity Providers – the reduction in the ratings of liquidity providers;
11. Rating of Longevity Insurers – the reduction in the ratings of any insurers that provide longevity cover, if any;
12. Policy rescission by carriers and challenges by other parties;
13. Shortening of the Ratings Stability Period and Wear-Off Period; and
14. Any additional stresses A.M. Best deems necessary based on the specific profile of the life settlement pool.

8. Summary of Qualitative Issues

In rating securities collateralized by life settlements, A.M. Best also considers issues that may not be directly quantifiable (some of which have been discussed earlier) but could have a significant impact on the rating of the transaction. Some of the issues A.M. Best considers in the analyses include, but are not limited to, the following:

1. The infrastructure set up by the collateral manager to manage the transaction;
2. The track record of the medical underwriters as shown by actual to expected ratios verified by reputable actuarial firms;

3. How long the designated medical underwriters in the transaction have been providing life expectancies to independent third parties;
4. Whether the issuer (or its representative) has hired actuaries to help it understand mortality profiles on impaired lives of the elderly;
5. The extent to which attorneys have reviewed the sales documentation packages for each life settlement in the portfolio and are satisfied that they see no evidence of violation of the insurable interest tenet;
6. The qualifications of the servicer and its general ability to provide the services outlined in the legal documents;
7. The existence of designated backups for significant service providers, such as collateral managers and servicers/tracking agents;
8. The extent to which the sellers of the policies know all the fees paid to all intermediaries in the transaction;
9. The ability and willingness of the issuer to provide accurate surveillance data on a timely basis for monitoring the transaction, including providing the annual audited report;
10. The ability and willingness of the issuer to reconcile the periodic data transmissions used in the surveillance of the transaction;
11. Whether the issuer has set aside reserves for legal expenses associated with legal challenges by insurance carriers and others;
12. Whether the issuer has set aside funds for additional re-underwriting in the future; and
13. The quality of submitted data and the timely resolution of issues relating to remodeling/surveillance data.

Transaction Surveillance

There are three main elements of A.M. Best's surveillance of life settlement transactions: monitoring of the transaction's performance, periodic stochastic modeling of the transaction and deterministic calculations to measure the near-term liquidity available to maintain the transaction.

1. Monitoring

To monitor life-settlement-backed securities, A.M. Best requires the following information on a monthly basis (unless another frequency is indicated):

- The date of death of any insured as shown on the death certificate;
- The date each death was reported to the issuer;
- The date each death benefit was collected, the amount collected and the remaining amount to be collected, if any;
- The date of maturity of any policy matured due to other than death of the insured, and the associated reason for maturity;
- On a quarterly basis, re-transmission of the death benefits, premium payments and other significant attributes of the transaction as indicated by A.M. Best's data template made available to the issuer. In addition, A.M. Best expects a reconciliation of the data elements transmitted that indicates the reasons for the changes in death benefits, premiums and other data elements as compared with the prior submission;
- Any lapse notifications to the issuer;
- Any challenges by insurers regarding the validity of the life settlements;

- Remaining cash, reserve and note balances;
- Cumulative premiums paid on premium financed policies;
- Annual auditing report, if applicable;
- The liquidation proceeds of the life settlement (if sold); and
- Any other data elements necessary for monitoring that A.M. Best may request in the future.

2. Remodeling

The transaction will be remodeled at least once a year, although there may be occasions when such remodeling is performed more frequently, such as when the portfolio's performance falls below expectations or the primary medical underwriter in the transaction substantively modifies underwriting standards. The portfolio cash flows at any given time will be compared with the most recent simulated cash flows. At the outset of the transaction, because cash flows based on mortality can be extremely volatile (particularly for small, unhedged portfolios of life settlements), such comparisons may only be meaningful after six to 12 months have elapsed. As part of the remodeling process, A.M. Best will revisit assumptions made in its analysis to see whether there are significant changes in mortality (measured by lives and death benefits), premiums, investment returns, death benefit collection lags, insurable interest challenges by insurers, credit quality of insurers or other major factors that may impact the credit quality of the securities. Thus, the surveillance activities of a life settlement securitization are dynamic and A.M. Best may make appropriate adjustments to such assumptions and stress scenarios to reflect the then-current experience of the securitized portfolio or additional knowledge gained by A.M. Best.

There may be occasions when A.M. Best asks the transaction's sponsor to provide new medical underwriting for the portfolio. The reasons for a request for new medical underwriting may include, but are not limited to, the following: 1) if the primary medical underwriter substantially revises its methodology for assigning mortality ratings or life expectancies, 2) if the maturities in the portfolio differ significantly from the modeled maturities and 3) if more than five years have elapsed since the last medical underwriting of the portfolio.

3. Determining the Near-Term Liquidity Position

Regardless of what the life settlement simulation model projects as the maturities, the rating of securities backed by life settlements also will depend on the portfolio's experience as it ages. Although A.M. Best will monitor the life settlement portfolios continuously for maturities, the portfolio's experience will be considered particularly important after the first and second years. A.M. Best will calculate the portfolio's Annual Run Rate as a way to gauge the availability of near-term liquidity. Starting at or around the end of the first year, A.M. Best will calculate the portfolio Annual Run Rate as follows:

Annual Run Rate = (Cumulative Death Benefits Over Prior 12 Months – Largest Single Life Death Benefit)

A.M. Best will assume that the Annual Run Rate is the annual expected portfolio maturities over a three-year period (with a modest increase or decrease of up to 10% per year, depending on the life cycle of the life settlement portfolio)

and observe whether cash flows and any cash reserves are sufficient to meet all expenses and keep all the policies in force over the following three years.

The annual run rate will be calculated again at or around the second year of the transaction, except the formula from this period on will be as follows: *Annual Run Rate = (Cumulative Death Benefits Over Prior 24 Months – Largest Single Life Death Benefit)/2*

The Annual Run Rate once again is applied to the transaction over a three-year period to see if the transaction is still viable and all expenses are being met. The Annual Run Rate then is calculated at least every six months after the 24-month period, based on the preceding 24 months of maturities, to gauge the viability of the transaction over subsequent three-year periods

A.M. Best will view the inability of a transaction to withstand the run rate (after the annual adjustments) over a three-year period as a credit negative.

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Methodology

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Securitization of Period-Certain and Life-Contingent Structured Settlements

A structured settlement is an agreement between a claimant and a defendant, whereby the claimant agrees to settle a lawsuit in exchange for periodic payments to be made by the defendant to the claimant over time. Structured settlements are a popular method for settling personal injury, product liability, medical malpractice and wrongful death cases. The defendant discharges its obligation by purchasing an annuity from a highly rated life insurance company.

In general, there are two varieties of annuities utilized in structured settlements: a) period-certain annuities that generate guaranteed, periodic payments for a defined term to the annuitants and can be fixed or can escalate based on a specified compounding rate and/or inflation rate; and b) life-contingent annuities in which specified payments are made to annuitants until they die. There also are annuities that combine period-certain and life-contingent features.

Structured settlements have been securitized in asset-backed securities transactions for at least 11 years. Since 2001, such transactions have been greatly facilitated by the enactment of transfer laws that require court orders before structured settlement cash flows can be purchased. Court-ordered transfers have virtually eliminated diversion risk – the risk that claimants in structured settlements who have sold their annuity cash flows to purchasers would divert such cash flows back to their own accounts in violation of their sales agreements. This methodology summarizes how A.M. Best will assess structured settlement securitizations involving period-certain and/or life-contingent annuities.

Historical Tax Issues Associated With Structured Settlements

Structured settlements – which often involve periodic payments over a long term – evolved as a way to foreclose claimants from improvidently exhausting their awards.

The federal tax characterization of an award matters both to the claimant and to the defendant. Although lump-sum case-settlement payments always have been excluded from the claimant's income – as specified in Section 104 of the Internal Revenue Code (IRC) – the tax treatment of a structured settlement award once was uncertain. A claimant's annuity payments received from a structured settlement, for example, might formerly have been included in the claimant's income, even though clearly part of a tort settlement. In the late 1970s, the Internal Revenue Service (IRS) issued several rulings suggesting that tort-settlement periodic payments would be excluded from the claimant's income as long as the claimant could not control or accelerate the payments. In 1982, an amendment to Section 104 of the IRC and enactment of Section 130 of the IRC clarified the tax treatment of structured settlements and revealed their potential advantages.

Section 130 allows defendants to fund their obligations via annuities and claimants to exclude such payments from their income, as long as (among other things) the payments are "fixed and determinable as to amount and time of payment" and "cannot be accelerated, deferred, increased, or decreased by the recipient." In response

Additional Information

Criteria:
Life Settlement Securitization

Securitization of Annuities

Best's Idealized Default Matrix

Special Report:
Best's Impairment Rate and Rating Transition Study

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to claimants' desire to monetize such periodic payment rights, a market developed in which companies purchase a claimant's rights to future payments in exchange for a lump sum. This business of monetizing anticipated payments is known as "factoring," and the firms engaged in it as "factoring companies." But the industry faced a problem in the possibility of factored structured settlements payments being deemed "accelerated," no longer being deemed "fixed and determinable," and accordingly, being denied the favorable tax treatment otherwise accorded tort settlement proceeds. Factoring, it was feared, might disqualify payments from being excluded either from the payee's taxable income under Section 130 of the IRC or from the factoring company's income. But new legislation, prescribing a method to accomplish a factoring transaction while retaining favorable tax treatment, essentially eliminated this possibility.

The Victims of Terrorism Tax Relief Act of 2001 added Section 5891 to the IRC to govern the tax treatment of structured settlement factoring transactions. It imposes a stiff excise tax on anyone acquiring structured settlement payment rights in a factoring transaction, but makes exceptions for any factoring transaction "approved in advance in a qualified order." Approval essentially depends on a finding that the transaction is in the best interest of the claimant and is not contrary to law or court order. A "qualified order" may be issued "under the authority of an applicable State statute by an applicable State court."

To support this scheme, states have passed statutes regulating the transfer of structured settlement payments and empowering their courts to conduct transfer proceedings and issue orders that comply with federal tax law. The goals of the transfer statutes are to:

- Provide tort obligors and annuity providers certainty regarding to whom scheduled payments are to be made;
- Ensure that tort claimants are treated fairly in their efforts to sell their scheduled payments; and
- Ensure that all interested parties receive prior notification of such assignments.

Parties to a Structured Settlement

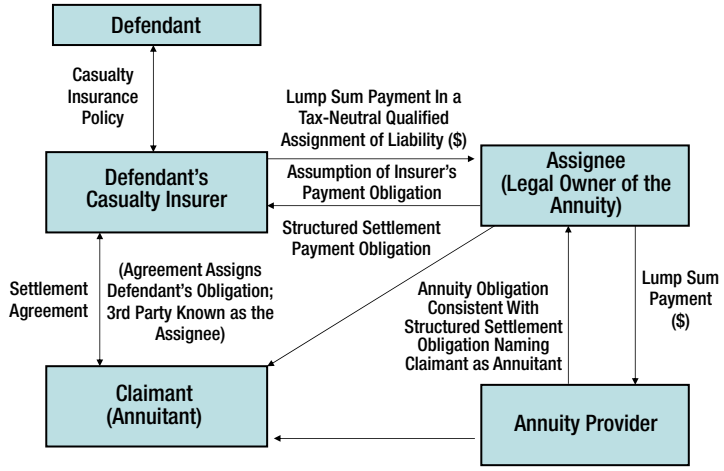
A structured settlement occurs once a structured-settlement agreement has been reached between parties, such as a claimant and a defendant. The agreement outlines the terms and compensation to be provided by the defendant or the defendant's casualty insurer. The defendant or defendant's casualty insurer – the party initially responsible for providing future compensation to the claimant – often will accomplish the defeasance of its obligation by purchasing an annuity contract from a third party, typically a life/annuity insurance company. The transfer of its obligation often is accomplished by a qualified assignment either directly or indirectly (through another third party) to the annuity provider. The purchase of the annuity contract traditionally is accomplished though a single premium payment. At this point, neither the defendant nor its casualty insurer has any further liability to make periodic payments to the claimant. The obligor becomes the annuity company, which then makes periodic payments to the claimant that match the periodic payments set forth in the structured settlement agreement. A simplified structured settlement transaction between a claimant and defendant is shown in **Exhibit 1.** The reader should be aware that the transfer of obligations from the defendant to the assignee need not be a qualified assignment and that assignment companies need not be subsidiaries of the annuity providers.

The Role of Factoring Companies

As a claimant's financial situation changes over time, he or she may wish to convert the annuity payments to a single, lump-sum payment. This can be accomplished by

transferring all or a portion of the structured-settlement payment rights to a third party in return for such a single payment. Factoring companies can help the tort claimant, since their business purpose is to purchase and accumulate pools of structured settlements and, in some cases, efficiently finance their activities through securitization of such pools.

Exhibit 1
Basic Structured Settlement Transaction
(Before Factoring)



Source: A.M. Best Co.

At the time of this writing, 46 states facilitate the transfers of annuity payments from claimants to factoring companies through a court-order process. Nearly all these states have transfer laws that conform to the Model State Structured Settlement Protection Act, which was agreed to by the National Structured Settlements Trade Association and the National Association of Settlement Purchasers and supported by the National Conference of Insurance Legislators (NCOIL). These transfer laws generally contain features such as:

1) A separate, written disclosure statement required to be given to the claimant well in advance of the closing date of the transaction.

2) Certification that the claimant has been advised in writing by the factoring company to seek independent, professional advice regarding the transfer, and has either received such advice or knowingly waived such advice in writing.

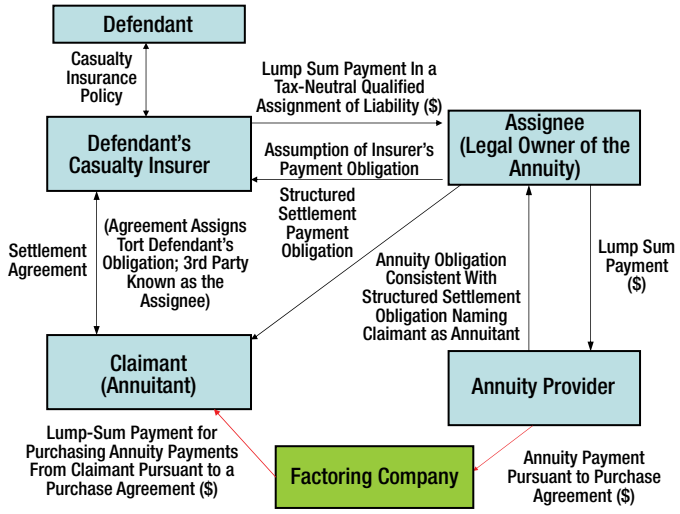
3) Notice to certain parties that may be affected by the transfer.

4) An itemized list of how the factoring company has calculated the present value of payments and gross amounts payable to the claimant in exchange for periodic payments.

5) The net amount payable to the claimant after deducting all itemized commissions, fees, costs, expenses and charges.

6) Court approval of the transfer, including a finding that the transfer is in the best interest of the claimant, taking into account the welfare and support of the claimant's dependents. **Exhibit 2** shows a structured settlement transaction that includes the role of the factoring companies that provide a way for claimants to monetize their annuity receipts.

Exhibit 2
Basic Structured Settlement Transaction
(After Factoring)

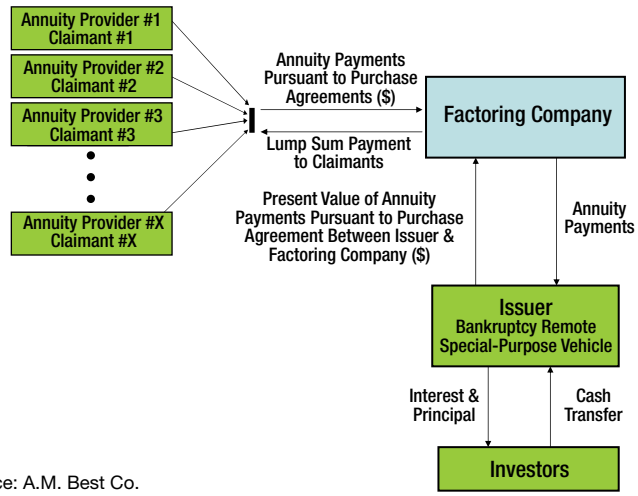


Source: A.M. Best Co.

Funding of Factoring Companies' Activities Through Securitization

At the time of this writing, the major factoring companies include J.G. Wentworth, Peachtree Settlement Funding and Stone Street Capital. The factoring companies fund their acquisition of annuity streams from claimants through their balance sheet or through loan facilities collateralized by the structured settlements. When enough structured settlements have been accumulated, the factoring companies can securitize them through a special-purpose vehicle (SPV), thus freeing their capital for further structured settlement activities. A.M. Best refers to the SPV as the issuer of the securities. **Exhibit 3** shows a simplified diagram for the securitization of annuity streams.

Exhibit 3
Simplified Securitization Diagram



Source: A.M. Best Co.

Credit Risk of Structured Settlements

Among the most important considerations for rating securities backed by structured settlements are the credit risks ascribed to the insurance companies involved in the transaction. In recent structured settlement securitization transactions, A.M. Best had financial strength ratings (FSRs) on about 95% of the insurance companies involved in the transactions. A.M. Best believes that due to its position in the insurance industry, other transactions will yield similar statistics for FSR coverage. Reports on all rated insurance companies can be found in Best's Insurance Reports. A.M. Best's methodologies on the quantitative evaluation of insurance companies are found, respectively, in *Understanding BCAR for Property/Casualty Insurers and Understanding BCAR for Life/Health Insurers* (See *www.ambest.com/ratings/methodology*).

Insurer Defaults

A.M. Best believes that general corporate-bond default statistics are inappropriate for assessing insurer credit risks because of the unique regulatory and accounting environment in which insurers operate, and because relatively few insurers issue public debt. As such, there are very few data points available to perform a meaningful insurance default study based on the generally accepted definition of default: missed interest or principal payments on financial obligations or a bankruptcy filing. Therefore, "financial impairment" is a more measurable indication of financial duress for insurance companies.

A.M. Best designates a company as financially impaired upon the first official regulatory action taken by a state insurance department. Such actions include involuntary liquidations because of insolvency, as well as other regulatory processes such as supervision, rehabilitation, receivership, conservatorship, a cease-and-desist order, suspension, license revocation, administrative order and any other action that restricts an insurance company's freedom to conduct its insurance business as normal. Companies that enter voluntary liquidation and are not under financial duress at that time are not counted as financially impaired.

It is important to note that financial impairment of insurance companies often occurs even if the companies have not been declared insolvent. For instance, an impaired company's capital and surplus could have been deemed inadequate to meet risk-based capital requirements, or there might have been regulatory concern regarding its general

financial condition. Thus, at any given rating level, more insurers would be impaired, according to the A.M. Best definition, than actually would default on policyholder obligations or, perhaps, on other obligations, such as senior or subordinated debt.

Based on the definition of financial impairment, A.M. Best has conducted and continues to conduct extensive studies to determine the impairment rates of insurance operating companies. These impairment rates can serve as proxies for defaults on financial obligations made by those companies. The latest study at the time of this writing, *Best's Impairment Rate and Rating Transition Study – 1977 to 2011*, published March 26, 2012, covers more than 5,000 operating insurance companies that carried a Best's FSR from Dec. 31, 1977, to Dec. 31, 2011. In that period on average, 21.3 companies per year – or a total of 725 operating insurance companies – were designated as financially impaired. **Exhibit 4**, Best's Cumulative Average Impairment Rates, shows the one-year to 15-year cumulative average impairment rates for highly rated insurance companies in the most recent impairment study at the time of this writing. Updates to this study are posted on the A.M. Best website (*www.ambest.com/research*).

Exhibit 4
Best's Cumulative Average Impairment Rates*

	Financial Strength Ratings	
Year	A++/A+	A/A-
1	0.06%	0.17%
2	0.18%	0.52%
3	0.33%	0.99%
4	0.50%	1.46%
5	0.65%	1.99%
6	0.87%	2.54%
7	1.10%	3.11%
8	1.35%	3.73%
9	1.65%	4.30%
10	1.96%	4.86%
11	2.28%	5.41%
12	2.68%	5.88%
13	3.11%	6.32%
14	3.53%	6.69%
15	3.84%	7.04%

*From *Best's Impairment Rate and Rating Transition Study — 1977 to 2011*, published March 26, 2012.
Source A.M. Best Co.

Exhibit 5
Financial Strength Ratings & Equivalent Issuer Credit Ratings

Financial Strength Rating (Operating Insurance Company)	Equivalent Issuer Credit Rating on the Credit Market (Operating Insurance Company)
A++	aaa
	aa+
A+	aa
	aa-
A	a+
	a
A-	a-

Source: A.M. Best Co.

The reader should be aware that A.M. Best has an equivalent issuer credit rating (ICR) on the credit market scale, familiar to capital markets participants, for nearly all FSRs it issues. The translation from FSRs to ICRs is shown in **Exhibit 5**. As an example, an operating insurance company with an FSR of "A+" would have an ICR of either "aa" or "aa-", depending on the results of the analysis done by the rating analyst for the company in question. For more information on the translation of FSRs to ICRs, please see *Insurance Holding Company and Debt Ratings*, published April 5, 2012.

In the context of structured settlement securitization, ICRs are significant because A.M. Best's idealized default rates for insurers (which are, in part, derived from A.M. Best's impairment studies) are shown on the credit market scale familiar to capital market participants. **Exhibit 6** shows the idealized default rates assumed for insurance operating companies on the traditional credit market scale. The default rates on this table are applied to the insurance companies in structured settlement transactions.

Unrated Insurance Companies

If A.M. Best rates the insurance company that issues the annuity in a structured settlement, the default rate associated with that insurance company's ICR also is used in the analysis of the securitization. If the insurance company is not rated by A.M. Best but is rated by another rating agency, the ICR assigned by that rating agency and the applicable default rate, if available, will be used in the analysis. An insurance company with no rating from any rating agencies – and not previously impaired – generally will be assigned a rating of "bb+", the highest non-investment grade ICR issued by A.M. Best. An insurance company that has no rating from any rating agencies, and

Exhibit 6
Best's Idealized Default Rate of Insurers*

	(On the Credit Market Scale)						
Year	aaa	aa+	aa	aa-	a+	a	a-
1	0.03%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%
2	0.11%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%
3	0.20%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%
4	0.31%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%
5	0.45%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%
6	0.60%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%
7	0.77%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%
8	0.96%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%
9	1.15%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%
10	1.36%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%
11	1.58%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%
12	1.81%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%
13	2.05%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%
14	2.29%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%
15	2.53%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%

*Derived from *Best's Idealized Default Matrix* published Dec. 5, 2007.
Source: A.M. Best Co.

that is under regulatory supervision, will be assigned an issuer credit rating of "b." In such cases, an exception may be made when 1) the company has continued making payments on its contract obligations for the past three years or 2) insurance regulators have expressed confidence that all policyholder obligations will be paid in full during the rehabilitation or runoff process.

Correlations

The annuity issuers in the structured settlement pools evaluated by A.M. Best usually consist of large insurance companies. Given the size of these companies, it is reasonable to assume that their default probabilities are correlated, since they tend to hold similar investment assets. A.M. Best will either assume a heightened default rate to account for default correlations or assume a default correlation of 15%.

Recoveries

In general, state guaranty funds cover up to $100,000 of cumulative cash flow on annuities. Individuals with scant knowledge of the operation of guaranty funds will state categorically that policyholders do not lose money in life insurance company impairments. A more careful examination of insurance company impairments and their resolutions, however, will reveal that annuitants have a reasonable risk of diminished value of the cash flows if:

- There are delays in receiving promised cash flows or
- A new insurance company purchases the annuity book of business owned by the impaired insurance company and changes the terms of the annuity contract backing the structured settlement to the detriment of the annuitant.

For these reasons, A.M. Best applies various recovery and payment-delay scenarios gleaned from actions taken by guaranty funds and by insurance companies in impairments. A.M. Best assumes a recovery of 85% on defaults with a lag of one year.

Mortality Risk of Life-Contingent Structured Settlements

The most significant factor for evaluating life-contingent structured settlements is mortality risk – that is, the risk that claimants will die earlier than predicted. An earlier death means a curtailment of the annuity cash flows. A.M. Best begins its evaluation of mortality risk by looking at the underwriting criteria used by the factoring companies in purchasing structured settlement cash flows. At the time of this writing, there are no mortality tables just for structured settlements, although there are experience studies that show excess death rates of structured settlement annuitants compared with standard annuity tables.

There are generally two ways issuers can determine the life expectancies of structured settlement annuitants. The issuers can either seek the help of medical underwriters – now used extensively in the life settlement field – to estimate life expectancies, or they can use in-house underwriting expertise. Either way, the issuer's main goal with regard to life-contingent structured settlements is to limit the types

and levels of medical impairments allowed in the pool so as to manage the volatility of the claimants' life expectancies in the transaction.

Using Independent Medical Examiners

The lack of fully developed mortality tables for structured settlement annuitants makes it necessary to put a limit on the type of medical impairments that would be allowed in the pool. One way to accomplish this is to have medical underwriters assess the mortality profile of each annuitant in a structured settlement pool to exclude those annuitants whose life expectancies have been shortened excessively by injuries that make life expectancies difficult to estimate. The life settlement industry uses medical examiners extensively, as further described below, to assess the life expectancies of individuals who desire to sell their policies in the secondary market. The same medical examiners can be used to evaluate the life expectancy of structured settlement annuitants. The document *Life Settlement Securitization*, published March 1, 2012, by A.M. Best, provides additional information about medical examiners and their general methodology.

Medical examiners use a numerical rating system developed by reinsurers to determine how an individual's mortality differs from a "standard" risk. In general, standard risk is given a value of 100%, which represents a unit of risk. The system assigns debits and credits to a life where debits are factors that increase a person's mortality over a standard risk and credits are factors that decrease a person's mortality over a standard risk. For example, an individual might have coronary heart disease that may be assigned a debit of 150%, and if that person has had bypass surgery to manage the ailment, he or she may earn credits of 25%. When the debits and credits are totaled, the person has a net debit balance of 125%. If a standard risk is considered to have a table rating of 100%, then this risk relative to standard will have a rating of 225%. This can be interpreted to mean that the probability that this individual will die is 125% higher than that of a standard risk — i.e. 225% of a standard risk. The percentage rating is commonly known as a mortality rating; this individual thus is said to have a mortality rating of 225%. It is important to recognize that one of the significant tasks of a medical examiner is to determine what constitutes a standard risk, since the mortality rating is a relative measure of the probability of death, not an absolute measure. Authors Brackenridge, Croxson and Mackenzie put it succinctly in the fifth edition of *Brackenridge's Medical Selection of Life Risks:*

> *The underwriting of substandard lives uses comparative mortality to judge substandard risks. Simply put, in order for a condition to be viewed as substandard, mortality observed among those people having the condition must be greater than the mortality otherwise expected. And in order to know what mortality to expect, a reference mortality experience must be available.*

No matter the medical examiner, the standard risk class should represent a combination of risks that are substandard as well as risks that are above standard – not just risks of healthy individuals. To arrive at a life expectancy for most lives, the medical underwriter applies the mortality rating to its standard mortality, otherwise known as the "reference mortality experience" in the passage above. Because each medical underwriter uses its own mortality tables and has its own method of determining debits and credits to account for diseases, lifestyle and mortality improvements, it is difficult to derive a mortality curve for a given insured unless one knows the specific standard table used by that medical examiner. For this very reason, one who receives a mortality rating from a medical examiner for an insured also should get the corresponding standard mortality table that is used to derive the life expectancy; otherwise, the data set is incomplete for the purposes of analyzing mortality risk. The life

settlement industry, which is one of the industries that uses medical examiners to determine life expectances, has surmised that most medical examiners currently use the 2008 VBT as standard – a conclusion that is not entirely wrong for life settlements.

For structured settlements, however, it may be reasonable for medical examiners to modify these standard tables to 1) shorten (or perhaps eliminate) the select period so as to grade the mortality rates faster toward the population mortality rates (as is the case with annuity tables); 2) account for mortality improvements, since structured settlement annuitants are generally much younger than individuals selling their policies in the life settlements market; 3) account for the fact that there may be some self-selection for those who accept life-contingent structured settlement agreements from defendants – i.e. the claimants may accept life-contingent awards because they believe that their life expectancies are longer than those determined by defendants in tort cases; and 4) apply an additional level of conservatism (i.e. higher debits) if medical records are limited as is the case with many structured settlement cases. A.M. Best views favorably standard mortality tables that have been created with the help of qualified actuaries – especially those who are familiar with substandard annuities.

A medical examiner can provide some or all of the following information:

- Its standard mortality tables upon which debits and credits are applied.
- A mortality rating (i.e. 100% + net debits and credits) that the medical examiner applies to its base mortality table to derive the life expectancy for each annuitant.
- A life expectancy estimate for each annuitant.
- A mortality or survivorship schedule for each annuitant (given medical impairments).
- The primary disease category for each annuitant, if one has been identified.
- A report that validates the historical accuracy of the medical examiners' life-expectancy projections (i.e. actual to expected results).

Exhibit 7
Typical Impairments Seen by Medical Examiners

Injuries and Diseases	Examples
Spinal Cord	Paraplegia, Quadriplegia
Craniocerebral	Traumatic, Anoxic, other
Burns	
Birth Asphyxia/Hypoxia	
Cardiovascular	Coronary Artery Disease, Arrhythmia, Other (e.g., Heart Valve Disease)
Cancer	Lung, Prostrate, Breast, Hematological, All Other Cancers
Cerebrovascular	Stroke, Carotid Artery, Transient Ischemic Attack
Dementia	Alzheimer's, Multi-Infarct
Respiratory Diseases	Emphysema, Asthma, Sleep Apnea, Chronic Obstructive Pulmonary Disease
Neurological Disorders (Excluding Alzheimer's)	Parkinson's, Lou Gehrig's Disease (ALS)
Diabetes	
Other	Renal Failure, Peripheral Vascular, etc.

Source: A.M. Best Co.

Exhibit 7 shows some of the diseases and injuries typically encountered by medical examiners in both structured settlement and life settlement transactions.

To control the severity of impairments in a structured settlement pool, A.M. Best generally will restrict the mortality rating of any annuitant to 500% or lower. If the issuer purchases the structured settlement of an annuitant with a mortality rating over 500%, A.M. Best would require additional expert opinion (preferably, an expert on the health condition or injury suffered by the annuitant) about the life expectancy of the individual and would further stress the mortality rating (by reducing the life expectancy) for that annuitant for modeling purposes.

Using In-House Medical Underwriting

Using in-house medical underwriting as opposed to using medical examiners may be appropriate since the demographics of claimants in structured settlement transactions are quite different from those in current life settlement pools who are medically underwritten by medical examiners. For one thing, life settlements are generally for those ages 65 or older, whereas the median age of the annuitants in purchased structured settlements is around 44 years. In addition, those selling their insurance policies in the current life settlement market usually own polices with face values of $250,000 or higher. Claimants in structured settlements, on the other hand, generally have little or no insurance, indicating that they are not as wealthy as the insureds in life settlements. Since not all medical examiners have experience in estimating the life expectancies of the types of individuals that enter structured settlements, A.M. Best generally accepts in-house medical underwriting as long as the following information is available:

- Documented underwriting standard.
- An evaluation by actuaries of the underwriting procedures used by the issuer in evaluating the life expectancies of the claimants.
- The basic guidelines for excluding cases where it is difficult to evaluate life expectancies. For example:
  - Are claimants who take high doses of certain medications excluded?
  - Is there an interview – via phone, e-mail, or in person – associated with the evaluation process?
  - Are certain injuries, such as cerebral and spinal cord injuries, excluded?
  - Are cases where there is a permanent vegetative state (PVS) excluded?
  - Does the in-house underwriting process produce debits and credits similar to independent medical underwriters?
  - Is there a debit threshold beyond which claimants are excluded from the pool?
- The extent to which information provided by the claimants for purposes of determining mortality risk is verified.
- The methodology for creating underwriting tables used to evaluate the claimants' life expectancy.
- Whether any annuity or population tables were used – and if not, why not.
- Circumstances under which expert opinion is sought regarding certain medical conditions for the purpose of establishing life expectancies.
- Details on how mortality improvements are included in the determination of the claimants' life expectancy.
- Whether there is a maximum or minimum age allowed.
- The extent to which the medical records of claimants are sought and used for the underwriting process.
- Other significant information related to the underwriting of life-contingent life settlements.

Mortality Risk Mitigation

One way to manage mortality risk is through a life-contingent insurance policy that provides the issuer with supplemental cash flows until a fixed date, regardless of whether the annuitant is alive or dead. The insurer effectively assumes the risk of the annuitant's early death. In essence, the insurer fixes the date of death of the annuitant for modeling purposes. A.M. Best will review the insurance policy to ensure that 1) the policy is fully backed by a rated entity (or parent with a "cut-through" provision); 2) the obligation to pay claims does not have unreasonable loopholes whereby claims can be denied easily, and 3) the policy will not lapse easily.

A.M. Best's considerations regarding the appropriateness of the insurer include 1) the insurer's ICR – A.M. Best requires an ICR of at least "a-," and 2) evidence of timeliness of payments by the insurer for covered obligations.

General Underwriting Standards of Factoring Companies

The issuers of securities backed by structured settlements rely on the underwriting standards of the factoring companies that purchase annuities from claimants. Clean underwriting standards and strict compliance with laws of each state where the structured settlements were originated have reduced the risk of challenges to the periodic payment assignments made by claimants (and their heirs or beneficiaries) and insurance companies. While the existence of court orders before a transfer is allowed reduces the risk of such challenges, transferees still should ensure that their origination criteria consider the following issues:

- The general underwriting guidelines for purchasing the structured settlements – including the underwriting guidelines for choosing which life-contingent structured settlements to purchase;
- The possibility that the annuity cash flows could be encumbered by bankruptcy of the claimant or any liens on such cash flows;
- The possibility that the estate of the tort claimant will be challenged by a spouse, relatives and dependents of the claimant;
- Screening for income level and physical disability considerations so as not to cause undue hardship for low-income and disabled tort claimants who should maintain annuity cash flows to cover basic living and medical expenses;
- Screening for tort claimants such as minors or adults who cannot legally enter contracts; and
- The possibility that the structured settlement may affect the claimant's eligibility for Medicaid and other programs.

Transaction Requirements, Recommendations and Expectations

The following items are requirements, recommendations and expectations for the pool of structured settlements.

- Clear underwriting standards for both period-certain and life-contingent structured settlements.
- Insurance companies issuing annuities must have a "bbb-" ICR or higher.
- Confirmation that structured settlements are pursuant to a court order.
- Present value of the structured settlements related to one insurer should not exceed 15% of the total face value of the pool – a concentration of more than 15% would result in additional stresses, although exceptions may be made for insurers with "aaa" ICRs.
- For life-contingent annuities, A.M. Best recommends:
  - At least 300 lives for the pool and
  - That a factoring company ascertain whether the claimant has had life insurance, and what size – a claimant who already has qualified for a large life insurance policy before the tort action may have a base mortality profile closer to the standard mortality tables.
- For life-contingent annuities, A.M. Best requires:
  - The periodic cash flows for each annuitant being purchased by the issuer;
  - The life expectancy and mortality ratings (based on the claimant's medical records, if any) from at least one medical examiner for each individual if issuer does not use in-house underwriting that has been evaluated by professional actuaries or consultants (see the methodology, *Life Settlement Securitization*, published March 1, 2012, for the standards for evaluating medical examiners);

— Results of the issuer's in-house underwriting for each claimant;
— Details on the annuitants, including age, gender and smoking status;
— The state in which the court order was issued for each annuitant – a concentration of more than 8% in any state would result in additional stress;
— The issuer to get HIPAA-compliant medical release forms for each annuitant if legally mandated;
— The mortality tables (and the adjustments) used by the factoring company and/or the issuer to value the structured settlements;
— The factoring company to identify and classify the physical injuries, if any, that gave rise to the tort or workers' compensation claim – such information, which is gathered from public documents, may be useful to medical examiners;
— Clear guidelines by the collateral manager as to the types of structured settlements to include in the collateral pool – e.g., gender, age, state distributions, etc.;
— Procedures for determining whether the annuitant is dead or alive;
— The mortality tables assumed by the issuer in analyzing the transactions and the reasons for such tables;
— Categorization of impairments, if any (see **Exhibit 7**); and
— The life-contingent insurance agreement, if any, between the issuer and an insurer.

• For period-certain annuities, A.M. Best requires the periodic cash flows purchased by the issuer aggregated by each insurance company in the pool.
• The legal name and the A.M. Best Issuer Credit Rating (ICR) for each insurance company in the pool.
• Any historical data from the factoring companies' business, such as defaults on annuity payments, recoveries, late payments and payment errors.
• Any historical data from the servicer on diversions.
• Any data on mortality of structured settlements handled by the servicer.
• Identification of a master servicer that provides the following duties (on behalf of the trustee):
— Receiving and posting payments from annuity companies;
— Making all payments to securitization constituents (bondholders as well as service providers);
— Performing transaction accounting, dealing with the annuity companies in connection with administrative issues;
— Tracking deaths; and
— Performing analysis on the performance of the issuer's collateral pool.
• Identification of a collateral manager that will:
— Determine what structured settlements will be included in the securitization (particularly when considering inclusion of life-contingent structured settlements);
— Determine what actions to take in the event decisions have to be made about the annuities after an insurance company impairment; and
— Make other decisions regarding the servicing of the pool of structured settlements in the event the current servicer has to be replaced.
• Identification of a backup servicer, trustee, auditors, lock box bank, legal counsel, investment banks and other service providers in the transaction.
• Indentures and other legal documents pursuant to the transaction.

Modeling and Stress Testing

At its most basic level, A.M. Best's model uses the Monte Carlo simulation technique to generate the cash flow associated with every structured settlement after considering the appropriate credit risks of the insurance companies that have issued the annuities and, if the structured settlement is life-contingent, the appropriate mortality profiles of the annuitants.

Exhibit 8
Best's Idealized Default Matrix*

Year	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-
1	0.03%	0.03%	0.04%	0.05%	0.06%	0.11%	0.16%	0.21%	0.23%	0.27%
2	0.08%	0.11%	0.13%	0.23%	0.32%	0.44%	0.56%	0.67%	0.74%	0.89%
3	0.14%	0.20%	0.26%	0.42%	0.58%	0.76%	0.95%	1.13%	1.25%	1.51%
4	0.22%	0.31%	0.41%	0.62%	0.84%	1.08%	1.33%	1.58%	1.76%	2.13%
5	0.31%	0.45%	0.58%	0.84%	1.10%	1.41%	1.71%	2.02%	2.25%	2.75%
6	0.42%	0.60%	0.79%	1.08%	1.37%	1.73%	2.09%	2.46%	2.74%	3.37%
7	0.53%	0.77%	1.01%	1.33%	1.64%	2.06%	2.47%	2.88%	3.21%	3.98%
8	0.66%	0.96%	1.25%	1.58%	1.92%	2.38%	2.84%	3.31%	3.68%	4.58%
9	0.79%	1.15%	1.51%	1.85%	2.20%	2.70%	3.21%	3.72%	4.13%	5.18%
10	0.94%	1.36%	1.79%	2.13%	2.48%	3.03%	3.58%	4.13%	4.58%	5.76%
11	1.09%	1.58%	2.08%	2.42%	2.76%	3.35%	3.94%	4.53%	5.01%	6.33%
12	1.24%	1.81%	2.38%	2.72%	3.05%	3.68%	4.30%	4.92%	5.43%	6.88%
13	1.40%	2.05%	2.69%	3.02%	3.35%	4.00%	4.65%	5.31%	5.84%	7.42%
14	1.57%	2.29%	3.01%	3.33%	3.64%	4.32%	5.01%	5.69%	6.25%	7.93%
15	1.73%	2.53%	3.34%	3.64%	3.94%	4.65%	5.36%	6.06%	6.64%	8.43%

* Table is taken from the methodology report Best's Idealized Default Matrix, published Dec. 5, 2007
Source: ?

For life-contingent structured settlements, the model draws random numbers (given the mortality profile of an annuitant) to determine when the annuitant has died. As long as the annuitant is alive, the Issuer receives the annuity payments until the end of the period in which the structured settlement annuity cash flows have been purchased by the Issuer. The payments stop when the annuitant is dead. At the same time, the model draws a random number (given the default rates of insurers) to determine whether the insurance company that issued the annuity is in default. If the insurance company goes into default before the annuitant dies, the annuity payment is missed in the year of default but resumes the next year after a 15% reduction in the annuity payments from that year until the annuitant dies. If the insurance company goes into default after the annuitant dies, the default has no effect on the cash flows to the Issuer.

For period-certain structured settlements, the model draws random numbers to determine when the insurance company that issued the annuity is in default. If the insurance company goes into default, the annuity payment is missed in the year of default but resumes the next year after a 15% reduction in the annuity payments.

The modeling described above is performed for a large portfolio consisting of both period-certain and life-contingent. For each trial in the simulation, the model aggregates the cash flows (annuity payments); makes payments as prescribed by the transaction's waterfall; and determines whether the net cash flows are sufficient to pay interest and principal when due. If payments are missed because of inadequate cash flow, the model records a default. The ultimate output of A.M. Best's cash flow model is the default rate – the total number of defaults for all trials divided by the number of trials. This default rate then is tied to Best's Idealized Default Matrix (**Exhibit 8**), which shows the default rates associated with debt ratings. The credit quality of the securities is based on the long-term credit rating scale, not the FSR scale.

Stress testing of key parameters is performed on the transaction to assess the impact on defaults of the securities. The parameters stressed in the modeling of the transaction include the mortality rates, insurance carrier defaults and recovery rates.

Performing Surveillance

As part of the surveillance activities with regard to structured settlement securitizations, the information required by A.M. Best includes, but is not limited to, the following:

- The date of death of any annuitant and the date the death was reported to the issuer.
- Any insurance company impairments (i.e. insolvency, rehabilitation, cease and desist order).
- Any changes in annuity cash flows – whether due to insolvency, changes in crediting rates or other reasons.
- Reconciliation as to why the cash flows deviate from original projections.
- Payments, if any, by the insurer that is hedging the life-contingent structured settlements.
- Any violations of underwriting criteria discovered by the collateral manager, back-up servicer or other service providers.
- Periodic updates of the remaining cumulative annuity cash flows.
- Details of any defaulted/written-off annuity cash flows.

Published by A.M. Best Company

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Related Reports

Criteria:
Insurance Holding Company and Debt Ratings

Special Report:
Best's Impairment Rate and Rating Transition Study

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Best's Idealized Default Matrix

The table below, Best's Idealized Default Matrix, shows A.M. Best's expected long-term default probabilities on the credit market scale for insurance-linked securities. The credit market scale in the matrix is fully described in *A.M. Best's Ratings & the Treatment of Debt* of Oct. 11, 2004. Best's Idealized Default Matrix can be used to rate: natural catastrophe bonds; mortality catastrophe bonds; contingent capital debt; sidecar debt; debt backed by trust-preferred securities, surplus notes, life settlements or structured settlements; embedded value and closed-block transactions; life/health securitizations based on redundant reserves; reinsurance recoverable transactions; transactions based on the statistical performance risk of a property/casualty line of business such as automobile insurance; and other insurance-linked structured transactions.

The matrix shows that for each debt rating, there is an associated cumulative default risk corresponding to the term of the debt being rated. For example, a 10-year structured security issued an "a" rating by A.M. Best would be assumed to have a cumulative default risk of 3.028%, barring any other considerations. Conversely, for a known default risk, there is an associated rating. For example, a 10-year structured security with a default risk of 1.789% would be assigned a rating of "aa", absent any other considerations.

Best's Idealized Default Matrix

	<—Credit Market Scale—									—>
Years	aaa	aa+	aa	aa-	a+	a	a-	bbb+	bbb	bbb-
1	0.026%	0.034%	0.043%	0.053%	0.064%	0.113%	0.162%	0.212%	0.231%	0.270%
2	0.076	0.105	0.135	0.227	0.318	0.437	0.556	0.674	0.736	0.888
3	0.142	0.199	0.257	0.417	0.576	0.761	0.945	1.130	1.252	1.509
4	0.221	0.315	0.408	0.623	0.838	1.085	1.332	1.579	1.758	2.131
5	0.314	0.449	0.585	0.844	1.103	1.409	1.715	2.021	2.253	2.752
6	0.419	0.602	0.786	1.078	1.371	1.733	2.094	2.456	2.738	3.369
7	0.534	0.772	1.009	1.326	1.643	2.057	2.470	2.884	3.213	3.981
8	0.660	0.956	1.251	1.585	1.918	2.380	2.843	3.306	3.677	4.585
9	0.795	1.154	1.512	1.854	2.196	2.704	3.212	3.720	4.131	5.179
10	0.937	1.363	1.789	2.134	2.479	3.028	3.578	4.128	4.575	5.762
11	1.087	1.583	2.079	2.422	2.764	3.352	3.941	4.529	5.009	6.331
12	1.242	1.812	2.381	2.717	3.053	3.676	4.299	4.923	5.432	6.884
13	1.402	2.048	2.693	3.019	3.345	4.000	4.655	5.310	5.845	7.419
14	1.566	2.289	3.012	3.327	3.641	4.324	5.007	5.690	6.247	7.935
15	1.733	2.535	3.337	3.639	3.941	4.648	5.356	6.063	6.639	8.428

	<—Credit Market Scale—								—>
Years	bb+	bb	bb-	b+	b	b-	ccc+	ccc	ccc-
1	0.671%	1.202%	2.296%	2.812%	5.802%	7.610%	8.514%	9.410	10.171%
2	1.956	3.259	5.276	7.296	10.599	14.353	16.840	18.218	19.396
3	3.183	5.229	8.103	11.464	15.081	20.601	24.459	26.225	27.741
4	4.351	7.114	10.781	15.328	19.258	26.374	31.411	33.485	35.269
5	5.461	8.914	13.314	18.900	23.144	31.694	37.739	40.048	42.038
6	6.515	10.631	15.706	22.192	26.752	36.582	43.480	45.961	48.106
7	7.512	12.264	17.962	25.216	30.095	41.058	48.670	51.272	53.526
8	8.455	13.814	20.086	27.984	33.185	45.144	53.344	56.022	58.349
9	9.342	15.284	22.081	30.508	36.035	48.861	57.534	60.255	62.623
10	10.177	16.672	23.952	32.800	38.659	52.229	61.271	64.007	66.395
11	10.958	17.981	25.703	34.872	41.069	55.271	64.585	67.318	69.708
12	11.687	19.210	27.339	36.736	43.277	58.006	67.503	70.221	72.605
13	12.364	20.362	28.863	38.404	45.297	60.456	70.050	72.750	75.123
14	12.991	21.435	30.279	39.888	47.142	62.642	72.253	74.937	77.301
15	13.568	22.433	31.592	41.200	48.824	64.586	74.133	76.812	79.175

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Securitization of Reinsurance Recoverables

Insurance companies purchase insurance to spread their risks and to limit their exposure to large or catastrophic losses. Reinsurance is a form of insurance for an insurance company. Under a reinsurance contract, the primary insurer transfers or "cedes" to another insurer (the "reinsurer") all or part of the financial risk of loss accepted in issuing insurance policies. The reinsurer, for a premium, agrees to indemnify or reimburse the ceding company for all or part of the losses the latter may sustain from claims it receives.

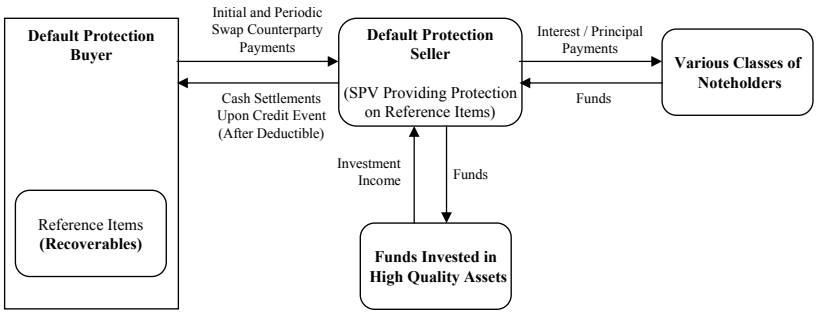
Reinsurance may be obtained from professional reinsurers (insurers that specialize in assuming reinsurance); reinsurance departments of primary insurance companies; or reinsurance pools. When reinsurers purchase reinsurance, the transaction is known as retrocession. For the purposes of this document, purchases of insurance by insurers or reinsurers from other insurers or reinsurers are referred to as reinsurance transactions.

A pool of reinsurance recoverables consists of the following components:

- Amounts due for claims and related expenses paid by the ceding company;
- An amount recoverable on the estimate of losses that have occurred and been reported, but have not yet been paid by the ceding company and related expenses;
- An amount recoverable on the estimate of incurred but not reported losses; and
- An amount equal to the portion of unearned reinsurance premiums paid to the reinsurer.

Given the size of reinsurance recoverables relative to surplus, uncollectible reinsurance can adversely affect insurance companies' financial strength.

Exhibit 1
Simplified Transaction Diagram



Best's Idealized Default Rates of Insurers*

On the Credit Market Scale.

	1-Year	3-Year	5-Year
aaa	0.03%	0.20%	0.45%
aa+	0.06%	0.58%	1.10%
aa	0.11%	0.76%	1.41%
aa-	0.16%	0.95%	1.71%
a+	0.21%	1.13%	2.02%
a	0.23%	1.25%	2.25%
a-	0.27%	1.51%	2.75%
bbb+	0.67%	3.18%	5.46%
bbb	1.20%	5.23%	8.91%
bbb-	2.30%	8.10%	13.31%

* Derived from *Best's Idealized Default Matrix* published Dec. 12, 2007.
Source: A.M. Best Co.

Best's Idealized Default Rates of Reinsurers*

On the Credit Market Scale.

	1-Year	3-Year	5-Year
aaa	0.03%	0.26%	0.56%
aa+	0.06%	0.74%	1.36%
aa	0.12%	1.09%	1.93%
aa-	0.33%	1.61%	2.72%
a+	0.54%	2.13%	3.51%
a	0.70%	2.39%	3.98%
a-	0.88%	2.80%	4.72%
bbb+	2.94%	6.81%	10.35%
bbb	4.30%	10.02%	15.21%
bbb-	6.22%	14.04%	21.01%

*Derived from *Best's Idealized Default Matrix* published Dec. 7, 2007. Further adjustments were made to reflect the probability of distressed runoffs.
Source: A.M. Best Co.

Additional Information

Criteria:
Best's Impairment Rate and Rating Transition Study

A.M. Best's Idealized Default Matrix

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For this reason, insurers and reinsurers alike have been looking for ways to reduce their exposure to uncollectible recoverables and concentrations of exposure to specific reinsurers. One approach to achieving this goal is to securitize a portion of the reinsurance recoverable and pass the risk of uncollectible reinsurance to the capital markets. This risk transfer can be accomplished through the use of credit derivative and collateralized debt obligation (CDO) technology. This document describes A.M. Best's rating methodology for evaluating the securitization of reinsurance recoverables. It does not address the treatment of the securitization transaction in the Financial Strength Rating (FSR) process applied to the rating of insurers and reinsurers.

Basic Transaction Structure

Reinsurance recoverable securitizations typically involve credit derivative technology, such as a credit default swap (CDS), and a CDO as diagrammed in **Exhibit 1**. In the typical credit default swap, an organization (known as the default protection buyer) seeks protection from another entity (known as the default protection seller) for credit events that may occur with designated reference items. In this case, the reference items are the reinsurance recoverables on the balance sheet of the default protection buyer. The transaction documents define the credit events – conditions under which payments are to be made from the default protection seller to the default protection buyer based on the state of the reference items from a credit perspective. The credit events could be defined as bankruptcy of the entities backing the reference items; insolvencies; and any other indications that the reference items are impaired.

The transaction also looks like a CDO because the default protection seller, in the form of a bankruptcy-remote, special-purpose vehicle (SPV), borrows money from noteholders to fund the CDS in a structured transaction collateralized by a reference pool of items. The interest payments to noteholders are made from the proceeds of the swap counterparty payments made by the default protection buyer and the investment income generated by the funds from the noteholders, which are invested in high-quality securities. The CDO portion of the transaction is synthetic in the sense that the reinsurance recoverables are not transferred to the SPV, and thus there is no "true sale." To be more specific, the SPV does not own the reinsurance recoverables in the transaction as ordinarily would be the case with cash CDOs; it just references them.

The default protection seller is exposed to the credit risk of the default protection buyer. This credit exposure can be mitigated if the default protection buyer makes swap counterparty payments in advance. The default protection buyer may, in turn, be exposed to the credit risk of the default protection seller because it relies on the default protection seller to make cash settlements upon the occurrence of credit events.

The transaction outlined in **Exhibit 1** is considered to be partially funded in that the funds raised from noteholders are not sufficient to cover the absolute maximum amount of credit losses that the default protection buyer's reinsurance recoverables may experience.

The recoverables can be managed – that is, the composition of the recoverables can change based on some basic criteria as agreed upon at the inception of the transaction – or they can be static. If they are managed, the transaction document will describe the conditions under which the recoverables pool can be changed.

Credit Events and Default Assumptions

The definition of a credit event for reinsurance recoverables is critical to the determination of the aggregate credit risk inherent in the pool of reinsurance recoverables. The definition of a credit event that applies to non-insurance entities may not apply to insurers or reinsurers. For example, a credit event for an industrial company could be a shortfall in an interest or principal payment on its financial obligation such as a bond. This credit event normally would be classified as a default in the parlance of most rating agencies. Reinsurers, however, rarely show explicit evidence of default because under extreme financial duress, they often go into runoff and then enter commutation agreements to settle remaining liabilities with their cedants. The common practice of commutation means that it often is unclear whether default, as normally defined in the

Exhibit 2
Best's Cumulative Average Impairment Rates*
On the Financial Strength Ratings scale.

	1	2	3	4	5	6	7	8	9	10
A++/A+	0.06%	0.18%	0.33%	0.49%	0.64%	0.86%	1.09%	1.33%	1.63%	1.95%
A/A-	0.18%	0.55%	1.02%	1.50%	2.04%	2.62%	3.21%	3.86%	4.48%	5.05%
B++/B+	0.77%	1.80%	2.85%	4.18%	5.59%	6.81%	8.04%	9.02%	9.80%	10.63%

* Based on property/casualty and life/health data from 1977 to 2010; see *Best's Impairment Rate and Ratings Transition Study* for more information.
Source: A.M. Best Co.

credit markets, has taken place or not. This is because the cedant may be agreeing to a commutation to avoid the risk of the reinsurer becoming insolvent in the future, but other factors, such as the liquidity value of receiving the payment immediately or future uncertainty of the ultimate size of the claim, often influence commutation agreements. As commutations often take place privately between reinsurers and their cedants, it is difficult to tell whether cedants are getting fair price for allowing the reinsurer to sever the reinsurance contract.

To determine the likelihood of a credit event for insurance-related obligations, A.M. Best begins with its comprehensive insurance impairment studies, the latest of which is *Best's Impairment Rate and Rating Transition Study – 1977 to 2010*, published May 16, 2011. **Exhibit 2** shows data from this latest study for FSRs ranging from "A++" to "B+."

It is important to note that A.M. Best's definition of impairment includes not only default, but also any type of publicly disclosed regulatory intervention in the operations of an insurance company such as supervision, rehabilitation, receivership, conservatorship, a cease-and-desist order, suspension, license revocation, administrative order and any other action that restricts a company's freedom to conduct its insurance business as normal. Thus the data in the impairment studies do not purport to represent pure default statistics on obligations to policyholders but represent a compilation of the most comprehensive information available in the insurance industry on the credit exposure faced by policyholders of insurance companies.

Using the data from the impairment studies, A.M. Best derived a table, shown in **Exhibit 3**, which is *Best's Idealized Default Rates of Insurers*. This exhibit shows the assumed

Exhibit 3
Best's Idealized Default Rates of Insurers
On the Credit Market Scale.

	1	2	3	4	5	6	7	8	9	10
aaa	0.03%	0.11%	0.20%	0.31%	0.45%	0.60%	0.77%	0.96%	1.15%	1.36%
aa+	0.06%	0.32%	0.58%	0.84%	1.10%	1.37%	1.64%	1.92%	2.20%	2.48%
aa	0.11%	0.44%	0.76%	1.08%	1.41%	1.73%	2.06%	2.38%	2.70%	3.03%
aa-	0.16%	0.56%	0.95%	1.33%	1.71%	2.09%	2.47%	2.84%	3.21%	3.58%
a+	0.21%	0.67%	1.13%	1.58%	2.02%	2.46%	2.88%	3.31%	3.72%	4.13%
a	0.23%	0.74%	1.25%	1.76%	2.25%	2.74%	3.21%	3.68%	4.13%	4.58%
a-	0.27%	0.89%	1.51%	2.13%	2.75%	3.37%	3.98%	4.58%	5.18%	5.76%
bbb+	0.67%	1.96%	3.18%	4.35%	5.46%	6.51%	7.51%	8.45%	9.34%	10.18%
bbb	1.20%	3.26%	5.23%	7.11%	8.91%	10.63%	12.26%	13.81%	15.28%	16.67%
bbb-	2.30%	5.28%	8.10%	10.78%	13.31%	15.71%	17.96%	20.09%	22.08%	23.95%

* Derived from *Best's Idealized Default Matrix* published Dec. 5, 2007.
Source: A.M. Best Co.

Exhibit 4
Conversion of Financial Strength Ratings to Issuer Credit Ratings*

Financial Strength Rating (FSR) (Traditional A.M. Best Scale)	Equivalent Issuer Credit Rating (ICR) (Credit Market Scale)
A++	aaa
	aa+
A+	aa
	aa-
A	a+
	a
A-	a-
B++	bbb+
	bbb
B+	bbb-

* Please see *A.M. Best's Ratings & the Treatment of Debt* for more information on the FSR to ICR translation.
Source: A.M. Best Co.

default rates for insurers by the issuer credit rating (ICR), which is based on the credit market scale (the scale most easily recognized by the capital markets) as opposed to the FSR scale. The translation of the FSR scale to the ICR is shown in **Exhibit 4**.

A.M. Best uses *Best's Idealized Default Rates of Insurers* in **Exhibit 3** as the basis for modeling the credit risk of primary insurers engaging in reinsurance business. The table can be adjusted, if warranted, based on the definition of a credit event in any given transaction. For example, if a credit event is

Exhibit 5
Best's Idealized Default Rates of Reinsurers*
On the Credit Market Scale.

	1	2	3	4	5	6	7	8	9	10
aaa	0.03%	0.14%	0.26%	0.40%	0.56%	0.73%	0.92%	1.14%	1.37%	1.61%
aa+	0.06%	0.41%	0.74%	1.06%	1.36%	1.66%	1.97%	2.28%	2.60%	2.93%
aa	0.12%	0.63%	1.09%	1.52%	1.93%	2.32%	2.71%	3.10%	3.51%	3.94%
aa-	0.33%	1.00%	1.61%	2.18%	2.72%	3.23%	3.72%	4.19%	4.66%	5.13%
a+	0.54%	1.36%	2.13%	2.84%	3.51%	4.13%	4.72%	5.28%	5.81%	6.33%
a	0.70%	1.55%	2.39%	3.20%	3.98%	4.73%	5.45%	6.16%	6.84%	7.51%
a-	0.88%	1.83%	2.80%	3.76%	4.72%	5.67%	6.63%	7.57%	8.50%	9.43%
bbb+	2.94%	4.92%	6.81%	8.62%	10.35%	12.00%	13.58%	15.10%	16.57%	17.99%
bbb	4.30%	7.23%	10.02%	12.67%	15.21%	17.63%	19.94%	22.16%	24.29%	26.34%
bbb-	6.22%	10.25%	14.04%	17.63%	21.01%	24.22%	27.25%	30.13%	32.87%	35.48%

* Derived from *Best's Idealized Default Matrix* published Dec. 5, 2007. Adjustments were made to reflect the probability of distressed runoffs.
Source: A.M. Best Co.

defined by a downgrade to "bbb-" or lower, the default threshold would be adjusted based on the ratings transition matrices tabulated in the impairment studies regularly conducted by A.M. Best.

For reinsurers, **Exhibit 3** is adjusted, as more fully described later, because A.M. Best believes that the small group of reinsurers in existence behaves differently than primary insurers from a credit risk perspective. As stated earlier, reinsurers in financial distress are prone to going into runoff. In addition, the perception that the rating floor for a reinsurer to remain viable as a risk-bearing entity is roughly between "a-" and "bbb+" means that reinsurance companies downgraded to "bbb+" or below are substantially more likely to go into runoff than primary insurers that are downgraded to those same levels. Of course, being in runoff does not necessarily mean that the credit risk of a reinsurer has deteriorated, but it can lead to aggressive commutations, which can result in cedants not receiving fair price.

To derive a reasonable proxy for the credit risk of reinsurers (for the purposes of reinsurance recoverable securitization transactions), **Exhibit 5**, *Best's Idealized Default Rates of Reinsurers*, was created by adjusting the data in **Exhibit 3**. This adjustment was achieved by setting the credit event threshold to "bb+" and below. Specifically, a reinsurer default is deemed to have occurred if the rating of the reinsurer moves to "bb+" or lower. The data used for the adjustment is from the ratings transition matrices tabulated for the insurance impairment studies. In essence, this adjustment reflects A.M.Best's view that a reinsurer with a "bb+" rating most likely will be in a state of distressed runoff. The result of this adjustment is that the default rate for reinsurers is higher for any given rating level than the default rate for primary insurers.

It is important to state clearly that a credit event as embodied in the impairment definition, and hence in the idealized default tables, does not consider an insurer's or reinsurer's willingness to pay its obligations. An insurer or reinsurer may be unwilling to pay on such obligations if there is a dispute regarding the interpretation of the reinsurance contract; a suspicion of fraud; or other significant issues that may arise at the time the reinsurance obligation is to be settled.

Recovery Assumptions

Available data are scarce concerning recoveries on insurance obligations. For one thing, in some jurisdictions, very few insurance companies issue debt, so using data from recoveries on corporate debt as a proxy for recoveries on insurance company obligations is not viable. In addition, recoveries on reinsurance recoverables from primary insurers versus from professional reinsurers can be different because in some jurisdictions, reinsurance obligations are subordinated to other types of

Exhibit 6
Best's Default Correlation of Recoverables*

	P/C Reinsurer	L/H Insurer	P/C Insurer	L/H Reinsurer
P/C Reinsurer	20%	10%	15%	10%
L/H Insurer	10%	15%	10%	15%
P/C Insurer	15%	10%	15%	10%
L/H Reinsurer	10%	15%	10%	20%

*P/C = property/casualty; L/H = life/health
Source: A.M. Best Co.

policyholder obligations. Therefore, recoveries may be lower on recoverables from companies engaged in both primary insurance and reinsurance than recoveries from professional reinsurance companies that engage strictly in reinsurance.

In a securitization transaction where recoveries are fixed, A.M. Best will use the fixed recovery amount embedded in the transaction's documentation. In assessing transactions where recoveries are not fixed, A.M. Best will consider quantitative and qualitative factors by:

1) Observing the percentage of insurance companies moving from non-investment-grade ICRs back to investment-grade ICRs and using this percentage as a proxy for recoveries.

2) Observing the historical data on reinsurer runoffs to see what portion were under real financial distress.

3) Reviewing any data on recoveries provided by the sponsor of the transaction.

4) Applying conservative stresses in cases where a significant line of business for the reinsurer is known to have substantial reserve deficiency.

Correlation

Like recoveries, default correlation among insurers and reinsurers is difficult to quantify. In a sense, all obligations issued by both insurers and reinsurers are correlated, especially during extreme catastrophic events. If the catastrophic events are sufficiently large, nearly all insurers will be under financial duress. Furthermore, the insurance/reinsurance chain complicates matters. For example, an insurer may cede business to a reinsurer, which then retrocedes to another reinsurer and so on. An insurer may, in fact, reinsure business written by its reinsurers, thus creating a reinsurance spiral. Since a ceding company remains liable for all claims filed by its policyholders, before seeking reimbursement from its reinsurers, an insurer's continued solvency may be impaired if the reinsurance chain is disrupted.

A.M. Best will assign correlations between insurance/reinsurance entities ranging from 10% to 20% as shown in **Exhibit 6**, *Best's Default Correlation of Recoverables*. For a composite company that conducts business in both the property/casualty and the life/health sectors, A.M. Best will determine in which sector the company is to be categorized. The correlations are relatively high compared with those observed in the financial sector because of:

1) The insurance/reinsurance chain.

2) The fact that all the recoverable assets are from the insurance industry, and companies in the asset pool are generally large (compared with companies in other transactions that reference insurance/reinsurance obligations such as the insurance trust-preferred CDOs). They therefore invest in similar assets and take risks in similar lines of businesses (if they are in the same sector).

Applying Default Rates

A.M. Best aggregates all the reinsurance recoverables from companies in the same insurance group or organization. It then obtains the ICR of each of the companies in each group. If the companies in the group have different ratings, A.M. Best uses the lowest ICR in the group or uses the ICR of the dominant company in the group (if one exists) for assigning a default rate to the reinsurance recoverable. If an issuer is not rated by A.M. Best but is rated by another

Exhibit 7
Best's Idealized Default Matrix
On the Credit Market Scale.

	1	2	3	4	5	6	7	8	9	10
aaa	0.03%	0.08%	0.14%	0.22%	0.31%	0.42%	0.53%	0.66%	0.79%	0.94%
aa+	0.03%	0.11%	0.20%	0.31%	0.45%	0.60%	0.77%	0.96%	1.15%	1.36%
aa	0.04%	0.13%	0.26%	0.41%	0.58%	0.79%	1.01%	1.25%	1.51%	1.79%
aa-	0.05%	0.23%	0.42%	0.62%	0.84%	1.08%	1.33%	1.58%	1.85%	2.13%
a+	0.06%	0.32%	0.58%	0.84%	1.10%	1.37%	1.64%	1.92%	2.20%	2.48%
a	0.11%	0.44%	0.76%	1.08%	1.41%	1.73%	2.06%	2.38%	2.70%	3.03%
a-	0.16%	0.56%	0.95%	1.33%	1.71%	2.09%	2.47%	2.84%	3.21%	3.58%
bbb+	0.21%	0.67%	1.13%	1.58%	2.02%	2.46%	2.88%	3.31%	3.72%	4.13%
bbb	0.23%	0.74%	1.25%	1.76%	2.25%	2.74%	3.21%	3.68%	4.13%	4.58%
bbb-	0.27%	0.89%	1.51%	2.13%	2.75%	3.37%	3.98%	4.58%	5.18%	5.76%

*From *Best's Idealized Default Matrix* published Dec. 5, 2007.
Source: A.M. Best Co.

rating agency, the ICR issued by that rating agency may be considered when assigning the default rate to the recoverable. Insurers or reinsurers that are in runoff and are not rated by A.M. Best will be assumed to be in default for modeling purposes. Reinsurance recoverables of Lloyd's entities will be consolidated. The default rate applied to this aggregated balance will be the default rate associated with the overall ICR of the Lloyd's market.

Modeling and Stress Testing

A.M. Best utilizes a proprietary CDO model to analyze the cash flows of a transaction and its ability to repay the rated note tranches. Because each reinsurance recoverable is modeled separately over the life of the transaction, A.M. Best requires specific information about the collateral pool such as the issuer names, the insurance groups to which the companies that issued the recoverables belong, and the ICR for each company. A copy of the most recent term sheet, rating agency presentations, swap agreements, and indenture and offering circular are required to model the credit risk of the transaction.

In general, the modeling and stress testing are done as follows:

1) Each reinsurance recoverable is assigned a cumulative default rate array (depending on ICR of the issuer) based on either *Best's Idealized Default Rates of Insurers* (**Exhibit 3**) or *Best's Idealized Default Rates of Reinsurers* (**Exhibit 5**).

2) The default rate array, which represents cumulative defaults from year 1 to the term of the transaction, is converted to a marginal yearly default rate array.

3) A correlation is applied across all pairs of insurers/reinsurers according to the matrix in **Exhibit 6**.

4) The marginal yearly default is used to stochastically model the likelihood of default at each period assuming a binomial distribution of losses – either the issuer of the recoverable is in default or is not in default.

5) Recoveries are assigned to the defaults of each recoverable based on historical data, or on agreed-upon recovery figures disclosed to investors in the transaction.

6) Through a Monte Carlo simulation process, net losses on the reinsurance recoverables are calculated for each simulation, and losses to noteholders are tabulated.

Various stress scenarios are applied to the transaction, including: increased default rates applied to the recoverables; increased asset correlations; and reduced and delayed recoveries (if recoveries are not fixed in the transaction). In the end, the total loss frequency to noteholders is tabulated and compared with *Best's Idealized Default Matrix* (**Exhibit 7**) for the maximum rating on the securities. This matrix is the benchmark for all of A.M. Best's ratings on structured securities. Other considerations that may change the

rating dictated by the loss frequencies to noteholders include: the untested nature of reinsurance recoverables as an asset class in a securitization; the uncertainty surrounding the risk of default on payments (such as the uncertainty added by disputes); the uncertainty surrounding asset default correlation; the risk inherent in the investment portfolio; the criteria for changing the composition of the recoverables pool; and the results of the stress scenarios applied to the transaction.

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Methodology

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Gauging the Basis Risk Of Catastrophe Bonds

A catastrophe bond is a structured debt instrument that transfers risks associated with low-frequency/high-severity events to investors. The insurance industry increasingly is employing catastrophe bonds as an alternative to traditional reinsurance and retrocession contracts. Depending on the risk appetite of investors, specific layers of risks are bundled together and through traditional securitization methods transferred to the capital markets. Since their first appearance in the capital markets in 1997, publicly disclosed catastrophe bonds with ratings increased in annual issue volume from $643 million in 1997 to a peak of $7.33 billion in 2007. The annual issue volume then decreased to $2.73 billion in 2008 and stood at about $4.28 billion in 2011. Catastrophe bonds' total risk capital outstanding has increased from $4.0 billion at year end 2004 to approximately $12.14 billion at year end 2011.

Catastrophe Bond Triggers

Catastrophe bonds can be defined by the following four types of triggers underlying the bond structure:

• Indemnity trigger – payouts are based on the actual losses of the sponsor.

• Pure parametric trigger – payouts are triggered by actual reported physical events (e.g., wind speed of hurricane, magnitude of earthquake, location of earthquake, etc.).

• Industry loss index trigger – payouts are triggered by an estimate of industry losses, e.g., Property Claim Services (PCS) loss information from a catastrophic event.

• Modeled loss trigger – payouts are determined by inputting events' parameters into a predetermined and fixed model to calculate losses.

Hurricane Katrina and other recent catastrophic events have made investors more cautious about the types of triggers they will accept in catastrophe bonds. Investors have been shying away from indemnity catastrophe bonds and gravitating toward nonindemnity bonds (industry loss index, parametric and modeled loss catastrophe bonds). For rating agencies, nonindemnity catastrophe bonds come with "basis risk" that must be considered in the Financial Strength Ratings (FSRs) of the companies sponsoring the bond issues. Basis risk, in the context of catastrophe bonds, generally reflects the possibility that a catastrophe bond may not be partially or fully triggered (for covered perils) even when the sponsor of the catastrophe bond has suffered a loss. This methodology discusses some of the factors that A.M. Best considers in estimating how much basis risk is inherent in catastrophe bonds and also helps A.M. Best determine how much reinsurance credit will be given to the insurance/reinsurance companies that sponsor nonindemnity catastrophe bonds.

Key Considerations

A.M. Best's assessment of the basis risk in catastrophe bonds relies primarily on data and information obtained from the three leading peril modelers (AIR Worldwide Corp., EQECAT Inc. and Risk Management Solutions Inc.) and the insurance/reinsurance sponsors of the catastrophe bonds. A.M. Best accepts modeled losses from the peril modelers

Additional Information
Rating Natural Catastrophe Bonds

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that reflect the most conservative trends in peril activities. A list of some of the items reviewed, evaluated or monitored to gauge basis risk of a catastrophe bond is as follows:

• Independent Peril Modeler – The level of involvement of independent peril modeling organizations. While some reinsurers bring great expertise in peril modeling, A.M. Best still values greatly the amount of objective analysis performed by independent peril modeling organizations.

• Transaction Documents – A.M. Best's review of the documents provided by the transaction's sponsor and service providers.

• The specific peril included in the transactions (e.g., U.S. earthquake, U.S. hurricane, European windstorm, Japanese earthquake, Japanese typhoon, etc.) – A.M. Best expects that the extreme high-severity perils such as earthquakes may give rise to higher basis risk.

• Derivation of Index Share Factors – the derivation of share factors (by state, by line, etc.) used to scale the industry losses to the losses of the sponsor. Company losses will be a fraction of industry losses, and the factors probably will vary according to the severity of the catastrophe.

•Index Used – the specific parameters/models used. If it is Property Claim Services[1] (PCS), for example, how will it be simulated? Historically, how adept have the peril modelers been in modeling the index?

• Index versus Company Event Losses – A.M. Best expects a table showing probability of the index or model losses falling short of company losses for a wide range of scenarios.

• Business Composition – the composition of the book of business being reinsured. Has the company been in business long enough to know the characteristics of the book of business it can acquire? If the composition of the book of business deviates from expectations, how will that change the company's basis risk indicators?

• Factor Recalibration – this reflects the adjustment of the Index Share factor to consider the changes in modeled risk or industry exposure.

• Basis Risk Re-evaluation – A.M. Best expects that for multiyear catastrophe bonds, there will be a yearly evaluation of the basis risk, since the composition of the book of business may change over time.

(1) Property Claim Services (PCS) is a subsidiary of Insurance Services Office Inc. PCS is the leading provider of information about property/casualty insurance, including statistical information (such as industry loss indicators), actuarial services, and a variety of insurance rating and underwriting services.

Estimating Basis Risk

In reality, there are several levels of basis risk in nonindemnity catastrophe bonds, and not all of them can be modeled with absolute precision. This modeling imprecision can be illustrated by a catastrophe bond with an industry loss-based trigger. The three general sources of basis risk with such a trigger are described below, along with the factors that may make them difficult to model:

1) The Discrepancy Between the Reported Industry Loss and Actual Industry Loss – As an example, suppose a reinsurer wants to use the reported PCS industry loss index as a trigger mechanism. This index probably would be approximated by total industry losses as modeled by the peril modelers. However, there is no assurance that modeled industry losses would equal reported PCS industry loss figures, so from the outset, there is basis risk that cannot be captured by the peril modelers.

2) The Discrepancy Between the Modeled Index Loss and Modeled Company Loss – This is the basis risk that can be measured readily by the peril modelers. Index share factors typically are designed to minimize this risk, though this risk may subsequently grow as a result of portfolio changes.

3) The Discrepancies Between Modeled Company Loss and Actual Company Loss, as well as Modeled Industry Loss and Actual Industry Loss – As an example, suppose the company loss is a derivative of the reported PCS industry loss. If the index share factors used to scale the industry loss to company loss are wrong, this produces yet another level of basis risk (sometimes called "secondary uncertainty") that may not be captured by peril modelers.

A.M. Best's objective in estimating basis risk is to determine how much reinsurance credit should be given to nonindemnity catastrophe bonds in the BCAR analysis, which is an important element in assigning FSRs to insurance companies. One way to accomplish this objective is to use a "scorecard" approach by assigning a score to a list of quantitative and qualitative variables that can affect the level of basis risk inherent in such catastrophe bonds. This approach tends to reveal some of the hidden drivers of basis risk. Another approach is to observe the direct impact of the nonindemnity catastrophe bond on the Probable Maximum Loss (PML), given the BCAR criteria (1-in-100 year PML for hurricane, and 1-in-250 year PML for earthquake), and give reinsurance credit based on the resulting "net" PML.

A.M. Best recognizes the merits of both of these methods of estimating basis risk, and it has devised the following four-step process that incorporates both approaches and additional considerations that can not be quantified easily:

1) Calculate a score based on a scoring table and correlate the score to a reinsurance credit table.

2) Calculate a ratio based on PML impact that directly ties to reinsurance credit.

3) Take the lesser of the results from steps 1 and 2.

4) Other considerations.

Step 1 — Basis Risk Scoring Table

In Step 1, A.M. Best calculates a score based on **Exhibit 1**, the Basis Risk Scoring Table. This table describes A.M. Best's internal scoring system for gauging basis risk. Each of the items in the scoring table is scored from 1 to 5 where 1 represents the least amount of basis risk.

While A.M. Best recognizes that it is not possible to capture all aspects of basis risk using this approach, the company believes it is useful as a relative measure of basis risk from transaction to transaction. The rest of the exhibits associated with the Basis Risk Scoring Table are described as follows:

• **Exhibit 2**, the Shortfall Table Example, shows the probability of a "shortfall" being greater than losses expressed as a percentage of the total principal amount of the catastrophe bond. A shortfall is defined as the amount by which the payout on the catastrophe bond "falls short" of the sponsor's loss (i.e. the modeled company loss). As an example of how a shortfall is calculated for one scenario, consider one

Exhibit 1

Basis Risk Scoring Table

On the scale, 1 represents the lowest risk category, and 5 represents the highest risk category.

Metrics	Scale*	Description	Weight
Shortfall	1 to 5	Shortfall is defined as the amount by which the modeled index loss falls short of the modeled company loss, and it is expressed as a percentage of the total principal amount of the catastrophe bond. A.M. Best keys on the probability of a 50% shortfall. In the example shown in **Exhibit 2**, the probability of a shortfall being greater than 50% of the catastrophe bond's principal is 20% (as shown in the second column of **Exhibit 2** on the ">50%" row). This probability may vary from transaction to transaction depending on the structure of the bond. A.M. Best will request an exhibit similar to **Exhibit 2** for all parametric catastrophe bonds. Based on the ">50%" shortfall line, A.M. Best will assign the appropriate score on the following table: **50% Shortfall** — **Score** 10% — 1 15% — 2 20% — 3 25% — 4 >=30% — 5	35%
Exhaustion Probability	1 to 5	A.M. Best considers the exhaustion point in determining whether the catastrophe bond should merit full capital relief, if any. Imagine a situation in which the attachment probability is 5% and the exhaustion probability is nearly 0%. In this case, the full width of the bond should not be given credit, since the probability of recovering the full balance is nearly 0%, although the probability of recovering some portion of the balance is relatively high. For this reason, A.M. Best ranks the exhaustion probability in the following manner:	25%
Peril	1 to 5	Perils differ in terms of how much data are available for modeling probabilities of occurrence. In general, there are more data available for hurricanes than for earthquakes (at least of late), although scientists are constantly reviewing geological samples to detect earthquakes that occurred long ago to increase the statistical accuracy of their calculations. The peril ranking is as follows: 1) Florida wind. 2) U.S. wind, Europe windstorm, Japan typhoon. 3) California earthquake, Pacific Northwest earthquake, Japan earthquake. 4) New Madrid earthquake. 5) Earthquakes in other regions not traditionally known for having seismic activity and other perils that have not traditionally been modeled.	10%
Independent Peril Modelers' Involvement in Basis Risk Analysis	1 to 5	1) If the independent peril modeler is fully engaged to model the index and tabulate loss shortfalls and is involved in the verification of the model inputs to maintain data consistency. 5) If basis risk analysis is done wholly by the sponsor with no input from an independent peril modeler. Scores from 2 to 4 will depend on the finer shades of distinction in this category as determined by A.M. Best.	10%
Data Quality	1 to 5	A.M. Best will ask each peril modeler for some generic indication on the different gradations of data quality used in modeling losses. For example, A.M. Best expects the extent to which the latitude and longitude of property locations are supplied to the model to be an indication of the level of data quality. Other indicators of data quality could be the extent to which the model has been supplied information about construction type, roof type, occupancy type, contents information, square footage, etc. Excessive use of default values in the models for primary and secondary characteristics of property is a clear-cut indication of bad data quality. Information supplied by the peril modelers will be used to rank data quality from 1 to 5.	10%
Certainty of Business Composition	1 to 5	1) If historical data show the type of business that is likely to be presented to the sponsor and the sponsor has a long track record. Stellar sponsor credibility is critical for this scoring category. 5) If the sponsor has no track record (such as if it is a brand new reinsurer) and is uncertain about the type of business that is likely to be presented to it. Scores from 2 to 4 will depend on the finer shades of distinction in this category as determined by A.M. Best.	10%

path of a hurricane that causes a certain level of industry loss. Assuming that the index is the PCS industry index, the peril modeler readily can calculate a modeled index loss by applying various scaling factors to the modeled industry loss. In addition, the peril modeler can calculate the modeled company loss based on the company's book of business (as is supplied to the peril modeler by the sponsoring insurance company). If the modeled index loss is less than the modeled company loss, then the shortfall is calculated as follows:

$$\text{Shortfall} = \frac{(\text{Modeled Company Loss} - \text{Modeled Index Loss})}{(\text{Bond Principal Balance})}$$

Exhibit 2
Shortfall Table Example

Shortfall as a % of Limit	Conditional Probability of Exceedance (%)
<=0%	70%
>10	50
>20	45
>30	40
>40	30
>50	20
>60	15
>70	12
>80	8
>90	5

Source: A.M. Best Co.

This shortfall can be tabulated for thousands of scenarios of hurricane paths (in some cases for hundreds of thousands of paths) to generate a distribution of shortfalls. From that distribution, confidence intervals of shortfalls can be determined. For example, **Exhibit 2** shows that the probability of having a shortfall of greater than 50% of the principal amount of the bond (on the left column of the exhibit) is 20% (as shown on the right column of the exhibit). Any insurer/reinsurer issuing a non-indemnity catastrophe bond and working with one of the top three peril modelers should be able to provide similar data to A.M. Best.

• **Exhibit 3**, the Scoring-Based Reinsurance Credit Scale, is the reinsurance credit table. A.M. Best adjusts for some of the modeling uncertainties, described earlier, that are associated with basis risk by imposing a maximum reinsurance credit of 90% (as shown on **Exhibit 3**).

• Exhibit 4 is an example of A.M. Best's Scoring-Based Credit Calculation.

Exhibit 3
Scoring-Based Reinsurance Credit Scale

Summed Basis Risk Score	Credit
1	90%
2	75%
3	50%
4	30%
5	10%

Source: A.M. Best Co.

Scoring Procedures:

The scoring mechanics for determining reinsurance credit are as follows:

• For each of the items in **Exhibit 1**, assign a number on a scale of 1 to 5, where 5 is the riskiest measure.

• Multiply each of the numbers by the factor weight in **Exhibit 1**.

- Sum all the products of the scales and their corresponding weights to get a total score.

- Correlate the total score to the Scoring- Based Reinsurance Credit Table (see **Exhibit 3**).

Step 2 — Calculating the Capital Effectiveness Ratio And Aggregate Capital Effectiveness Ratio

In Step 2, A.M. Best calculates a Capital Effectiveness Ratio and the Aggregate Capital Effectiveness Ratio, the components of which are supplied by the sponsor of the nonindemnity catastrophe bond and its peril modeling agency. The rest of this section describes both ratios and how they are calculated.

A.M. Best ultimately is interested in the extent to which the nonindemnity catastrophe bond being contemplated is effective in providing reinsurance protection to the sponsor. To this end, A.M Best will need the following aggregate exceedance curves for the company:

1) The base aggregate exceedance curve before adding the effect of the nonindemnity catastrophe bond; and

2) The base aggregate exceedance curve after adding the nonindemnity catastrophe bond.

Depending on the return period being targeted (e.g., 1-in-100 for hurricane, 1-in-250 for earthquake), A.M. Best will compare the PML based on the aggregate exceedance curve after adding the nonindemnity catastrophe bond with the PML based on the aggregate exceedance curve before adding the bond. Specifically, A.M. Best will calculate the Capital Effectiveness Ratio for each catastrophe bond tranche as follows:

$$\text{Capital Effectiveness Ratio} = 90\% \times \left(\frac{\text{(PML Before Adding the Bond} - \text{PML After Adding the Bond)}}{\text{(Bond Principal Balance)}} \right)$$

The 90% factor in the Capital Effectiveness Ratio above is an adjustment factor for the various sources of basis risk that are difficult to model, as discussed earlier.

The diversification effect of issuing multiple tranches of catastrophe bonds that cover the same peril (such as earthquakes and hurricanes) can be positive for basis risk. At its discretion, A.M. Best will ask for additional aggregate exceedance curves that are based on combining two or more tranches of catastrophe bonds that provide protection for the same peril. Based on these aggregate exceedance curves and the aggregate PML (APML) derived for each peril, A.M. Best will calculate Aggregate Capital Effectiveness Ratios for the cumulative balance of the catastrophe bonds for each peril as follows:

$$\text{Aggregate Capital Effectiveness Ratio} = 90\% \times \left(\frac{\text{(APML Before Adding Bonds} - \text{APML After Adding Bonds)}}{\text{(Total Principal Balance of Bonds)}} \right)$$

Step 3 – Calculating the Absolute Reinsurance Credit

In Step 3, A.M. Best calculates the Absolute Reinsurance Credit, which is the maximum reinsurance credit to ascribe to the nonindemnity catastrophe bond. The formula for the reinsurance credit of each individual catastrophe bond is as follows:

Absolute Reinsurance Credit	=	Minimum (Capital Effectiveness Ratio, Credit Derived from Scoring Table)

Exhibit 4

An Example of Scoring-Based Calculation (California Earthquake)

Metrics	Score	Weight	Weight x Score
Shortfall	2	35%	0.70
Exhaustion Probability	1	25%	0.25
Data Quality	2	10%	0.20
Peril Type	3	10%	0.30
Peril Modeler Involvement	1	10%	0.10
Certainty of Business Composition	2	10%	0.20

Total value of: Weight x Score = 1.75. This translates to approximately 79% on the scoring-based reinsurance credit scale (**Exhibit 3**). Assuming the capital effectiveness ratio is 81%, the absolute reinsurance credit = minimum (81%, 79%) = 79%.
Source: A.M. Best Co.

If the issuer has issued or intends to issue two or more catastrophe bonds covering a particular peril, the Absolute Reinsurance Credit for the catastrophe bonds covering the peril may be calculated (at A.M. Best's discretion) as follows:

Absolute Reinsurance Credit	=	Aggregate Capital Effectiveness Ratio

As an example of the calculation of reinsurance credit for a single nonindemnity catastrophe bond covering earthquakes, assume that at the 99.6% confidence level (i.e. at a return period of 250 years), the PML before adding the effect of the nonindemnity catastrophe bond is $200 million, the PML after adding the effect of the catastrophe bond is $65 million, and the principal balance of the bond is $150 million. The Capital Effectiveness Ratio would be 81% (81% = 90% X [$200 million - $65 million] / $150 million).

Step 4 – Other Considerations

Since an insurer's or reinsurer's book of business will change from year to year, so will the basis risk associated with the multiyear nonindemnity catastrophe bond it sponsors. A.M. Best would like some indication of how the catastrophe bond sponsor intends to measure basis risk changes as its business portfolio changes. In addition, A.M. Best is interested in how the index share factors are derived by the sponsor of the catastrophe bond, as well as how the index share factors may change at extreme ends of catastrophic losses. Finally, the risk management personnel and practices of the insurer/reinsurer matter greatly to A.M. Best.

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Methodology

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