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## Understanding BCAR For 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.

For A.M. Best's interactive ratings, the balanced approach of evaluating a company on both quantitative and qualitative levels provides a better analysis of a company and makes possible a more discerning and credible rating opinion.

A.M. Best's quantitative evaluation is based on analysis of more than 100 key financial tests and supporting data. These tests, which underlie the evaluation of balance-sheet strength and operating performance, vary in importance, depending on a company's characteristics. A company's quantitative results are evaluated on their own merits and also are compared with industry composites as established by A.M. Best. Composite standards are based on the performance of other insurance companies with comparable business mixes and organizational structures. These industry benchmarks are adjusted to reflect changes in underwriting, economic and regulatory market conditions.

### 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 under-

### 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

$$\text{NRC} = \sqrt{(\text{B1})^2 + (\text{B2})^2 + (\text{B3})^2 + (0.5 * \text{B4})^2 + [(0.5 * \text{B4}) + \text{B5}]^2 + (\text{B6})^2 + (\text{B7})^2}$$

Source: A.M. Best Co.



writing, 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.

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 market profile. BCAR

very often is a minimum requirement 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 article will describe the methodology used in 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' risk-based capital calculation, whereby required capital is computed to support three broad risk cat-

# A.M. Best Company Methodology

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egories: 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.

Shown in the exhibit, "A.M. Best's Capital Adequacy Model," the distribution of gross required capital by risk category is generated by applying the BCAR capital model to the property/casualty industry in 2007. 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.

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

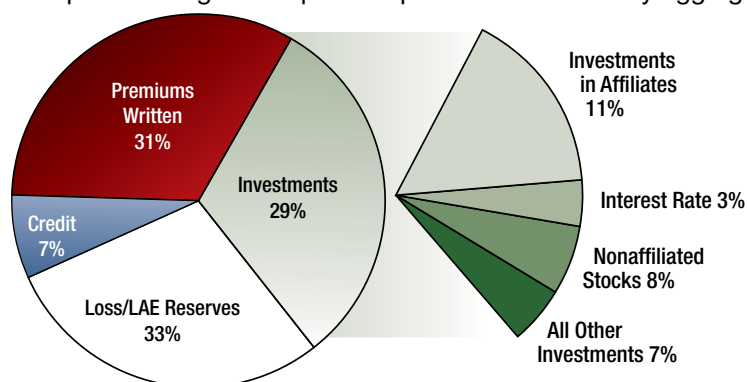
gross required capital, is underwriting risk. This category encompasses both loss and loss-adjustment expense reserves (B5) and net premiums written (B6). The loss-reserve component requires capital based on the risk inherent in a company's loss reserves, adjusted for A.M. Best's assessment of its reserve 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%.

### Exhibit 1

#### A.M. Best's Capital Adequacy Model

Composition of gross required capital for 2007 industry aggregate.



Source: A.M. Best Co.

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, imbedded 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 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.

The table, “Expected Policyholder Deficit Illustration,” 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.

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

**Exhibit 2  
Expected Policyholder Deficit Illustration**

<b>Company A</b>	<b>Asset Amount</b>	<b>Loss Amount</b>	<b>Capital Amount</b>	<b>Probability</b>	<b>Claim Payment</b>	<b>Deficit</b>
Scenario 1	\$13,000	\$9,556		90%	\$9,556	\$0
Scenario 2	13,000	14,000		10%	13,000	1,000
<b>Expectation</b>	<b>13,000</b>	<b>10,000</b>	<b>3,000</b>		<b>9,900</b>	<b>100</b>
<b>Expected Policyholder Deficit (Expected Deficit/Expected Loss Amount)</b>						<b>1%</b>

<b>Company B</b>	<b>Asset Amount</b>	<b>Loss Amount</b>	<b>Capital Amount</b>	<b>Probability</b>	<b>Claim Payment</b>	<b>Deficit</b>
Scenario 1	\$13,000	\$9,444		90%	\$9,444	\$0
Scenario 2	13,000	15,000		10%	13,000	2,000
<b>Expectation</b>	<b>13,000</b>	<b>10,000</b>	<b>3,000</b>		<b>9,800</b>	<b>200</b>
<b>Expected Policyholder Deficit (Expected Deficit/Expected Loss Amount)</b>						<b>2%</b>

Source: A.M. Best Co.

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**

More than 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 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 minimum capitalization standards, 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 becoming 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 secure/vulnerable 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, 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 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. 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.

**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. These charges are broadly in line with the NAIC’s risk factors.

**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. A company’s absolute capital adequacy 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 operation. In determining whether a company’s capital strength is secure or vulnerable, a company’s absolute BCAR is compared with the secure/vulnerable cutoff of 100%. An absolute ratio below 100% would be considered vulnerable, meaning 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.

Given strong, stable operating performance and sound risk management, the following chart provides a reasonable guide for the minimum BCAR levels needed to support A.M. Best’s Financial Strength Ratings:

**Exhibit 3 Minimum BCAR Guidelines**

Implied Balance Sheet Strength	Minimum BCAR
<b>Secure:</b>	
A++	175
A+	160
A	145
A-	130
B++	115
B+	100
<b>Vulnerable:</b>	
B	90
B-	80
C++	70
C+	60
C	50
C-	40
D	0

**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:** A.M. Best takes a consolidated approach that recognizes the importance of affiliated relationships within a domestic property/casualty group. This is different from the NAIC's single-company approach, in which the required capital of the domestic affiliate is charged to the parent. A.M. Best's consolidated approach applies to all affiliates included in the rating unit through reinsurance or group rating consideration. Separately rated subsidiaries also are consolidated upward and included in their parents' rating analyses. This consolidation provides a better view of the overall operating fundamentals and capitalization of the operating unit.

**Investment in Life/Health Insurers:** Similar to the NAIC model, the required capital of the 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 downstream 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 Noninsurance Affiliates:** There are a number of issues considered when determining the appropriate risk charge for investments in noninsurance 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 noninsurance affiliate to the parent. Unless a property/casualty insurer is committed actively to selling a noninsurer, 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.

**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 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.

The exhibit, “Interest Rate Risk” (B3) 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 secu-

rities 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. 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.

Most importantly, however, A.M. Best includes an additional capital requirement, or surcharge, for insurers that analysts believe are excessively dependent on unaffiliated 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 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 nonaffiliated recoverables. The company's total ceded leverage is defined as its nonaffiliated recoverables plus nonaffiliated ceded written premium 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.

#### **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 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. 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 the 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 20 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 imbedded 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 5% 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 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 growth in exposure is more than the industry threshold, which is currently set at 5%. The basis for determining the level of growth is the greater of the one-year and three-year annualized growth rate and can be based on growth in policy count 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 most recent year's growth to a threshold and also compares the three-year annualized premium growth rate to a different threshold. Whichever comparison generates the higher growth charge is used. These thresholds are chosen based on rate changes in the industry during those time periods plus an allowance for moderate growth in exposure.

The table, "High Premium Growth Example," shows the impact that rate changes can have on calculating the growth factor. In this example, the premiums grew at a substantial 50% during the most recent year, generating a growth charge of 1.30. 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 1.05. This 1.05 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

**Exhibit 4**  
**High Premium Growth Example**  
(\$ Thousands)

Calendar Year	Gross Premiums Written	Policy Count
2004	\$100,000	1,000
2005	100,000	1,000
2006	100,000	1,000
2007	150,000	1,100
One-Year Growth Rate:	50.0%	10.0%
Three-Year Average Growth Rate:	14.5%	3.2%
	<b>Indicated Growth Factors</b>	
One-Year Growth Rate:	1.300	1.050
Three-Year Average Growth Rate:	1.045	1.000

Source: A.M. Best Co.

operations that are spread thinly across many lines of business with small amounts of reserves, this diversification benefit is reduced.

### **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 20 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.

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  $(.70 + .30 \times \% \text{ premium in the largest line of business})$ . 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.

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.

**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 benefit of this adjustment is limited to caps of +10% and -15% of surplus, and the result is then tax affected.

The caps 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 cap 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.

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 the determination of 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 as compared with the length of time needed to pay the bulk of the policy liabilities. Usually, more credit is given to longer-term debt than to short term. 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 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.

**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 exposure also is tax-affected with a 35% tax rate. The determination of these losses will be provided through A.M. Best's Supplemental Rating Questionnaire database 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.

**Terrorism:** Information on terrorism risk is provided to A.M. Best in its Supplemental Rating Questionnaire. This information is pro-

vided 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.

## Exhibit 5 A.M. Best's Capital Adequacy Model— Two Company Illustration (\$ Thousands)

### Recap of Net Required Capital (NRC)

Risk Component	Company A		Company B	
	Required Capital Amount	% Gross Capital	Required Capital Amount	% Gross Capital
<b>Asset Risk:</b>				
(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
<b>Underwriting Risk:</b>				
(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
<b>Gross Required Capital (GRC)</b>	<b>44,143</b>	<b>100</b>	<b>177,466</b>	<b>100</b>
<b>Less: Covariance Adjustment</b>	<b>18,733</b>	<b>42</b>	<b>72,960</b>	<b>41</b>
<b>Net Required Capital (NRC)</b>	<b>\$25,410</b>	<b>58</b>	<b>\$104,506</b>	<b>59</b>

### Recap of Adjusted Policyholder Surplus (APHS)

Surplus Adjustment	% to Reported		% to Reported	
	Amount	Surplus	Amount	Surplus
Reported Surplus (PHS)	\$24,650	100	\$109,900	100
<b>Equity Adjustments:</b>				
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
<b>Other Adjustments:</b>				
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 BCAR (APHS/NRC)	Company A	Company B
	128.1	102.0

Source: A.M. Best Co.

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 80% 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 have been lowered one rating level as a result of the event. The last adjustment to be made will be the addition of 80% of the net PML to the loss reserves.

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 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.

## Exhibit 6 Investment Risk (B1/B2)

	Company A			Company B		
	(1) Statement Value	(2) Asset Risk Factor (%)	(3) (1)*(2) Required Capital	(1) Statement Value	(2) Asset Risk Factor (%)	(3) (1)*(2) Required Capital
<b>Investments</b>						
<b>Bonds:</b>						
U.S. Government	\$21,410	0.0	\$0	\$88,700	0.0	0
Investment Grade (Class 1-2)	97,280	1.0 <sup>1</sup>	973	226,300	1.0 <sup>1</sup>	2,263
Below Investment Grade (Class 3-6)	18,790	3.9 <sup>1</sup>	733	0	3.0	0
Affiliated	1,000	20.0 <sup>2</sup>	200	0	100.0	0
<b>Total Bonds</b>	<b>138,480</b>	<b>1.4</b>	<b>\$1,906</b>	<b>315,000</b>	<b>0.7</b>	<b>\$2,263</b>
<b>Preferred Stocks:</b>						
Nonaffiliated	1,650	15.0	248	0	15.0	0
Affiliated	0	100.0	0	0	100.0	0
<b>Total Preferred Stocks</b>	<b>1,650</b>	<b>15.0</b>	<b>248</b>	<b>0</b>	<b>0.0</b>	<b>0</b>
<b>Common Stocks:</b>						
Nonaffiliated	25,220	15.0	3,783	400	15.0	60
Affiliated	0	100.0	0	35,400	70.1 <sup>3</sup>	24,815
<b>Total Common Stocks</b>	<b>25,220</b>	<b>15.0</b>	<b>3,783</b>	<b>35,800</b>	<b>69.5</b>	<b>24,875</b>
Mortgage Loans	12,750	5.0	638	0	5.0	0
Real Estate	5,260	18.6 <sup>1</sup>	978	500	20.0	100
Cash	1,040	0.3	3	2,800	0.3	8
Other Investments	770	20.0	154	0	20.0	0
<b>Total Investments</b>	<b>\$185,170</b>	<b>4.2</b>	<b>\$7,710</b>	<b>\$354,100</b>	<b>7.7</b>	<b>\$27,246</b>
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 7 Interest Rate Risk (B3)

Company A						
	Estimated Duration	Market Value	120 B.P. Interest- Rate Rise	Potential Market Depreciation	% Catastrophe Exposure	Interest- Rate Risk Capital
<b>Fixed Income Security</b>						
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
<b>Totals</b>		<b>\$153,471</b>		<b>\$12,455</b>		<b>\$1,245</b>

### Catastrophe Exposure Percentage Calculation

Gross PML	\$0	Liquid Assets	\$179,140	PML/Liquid Assets	10%	Minimum of 10%
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Company B						
	Estimated Duration	Market Value	120 B.P. Interest- Rate Rise	Potential Market Depreciation	% Catastrophe Exposure	Interest- Rate Risk Capital
<b>Fixed Income Security</b>						
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	-
<b>Totals</b>		<b>\$316,191</b>		<b>\$13,280</b>		<b>\$3,943</b>

### Catastrophe Exposure Percentage Calculation:

Gross PML	\$105,000	Liquid Assets	\$353,600	PML/Liquid Assets	30%	Minimum of 10%
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Source: A.M. Best Co.

**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

**Exhibit 8**  
**Credit Risk (B4)**

<b>Company A</b>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Statement	Increase		(1)+(2)+(3)	Asset	(4)*(5)	Reins	(6)*[(7) - 1.0]	(4) * 1%	
Investments	Value	for	Adjustment	Adjusted	Risk	Required	Dependence	Indicated	Minimum	(6)+Max[(8),(9)]
		Reserve		Amount	(%)	Capital	Factor	Reins	Reins	Total
		Deficiency						Dependence	Dependence	Required
								Req Capital	Req Capital	Capital
<b>Receivable Balances:</b>										
Gross Agent Balances	\$919	-	\$0	\$919	5.0	\$46	-	-	-	\$46
<b>Reinsurance Recoverables:</b>										
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 & Associations	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	6,690 (3)	6,690	9.0 (4)	602	1.188	113	0	715
<b>Net Reinsurance Recoverables</b>	<b>60,580</b>	<b>6,616</b>	<b>(16,690)</b>	<b>50,506</b>	<b>6.0</b>	<b>3,021</b>		<b>792</b>	<b>596</b>	<b>3,813</b>
All Other Receivables	1,809	-	0	1,809	4.6 (5)	83	-	-	-	83
<b>Company Totals</b>	<b>\$63,308</b>	<b>\$6,616</b>	<b>(\$16,690)</b>	<b>\$53,234</b>	<b>5.9</b>	<b>\$3,150</b>		<b>\$792</b>	<b>\$596</b>	<b>\$3,942</b>
<b>Company B</b>										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Statement	Increase		(1)+(2)+(3)	Asset	(4)*(5)	Reins	(6)*[(7) - 1.0]	(4) * 1%	
Investments	Value	for	Adjustment	Adjusted	Risk	Required	Dependence	Indicated	Minimum	(6)+Max[(8),(9)]
		Reserve		Amount	(%)	Capital	Factor	Reins	Reins	Total
		Deficiency						Dependence	Dependence	Required
								Req Capital	Req Capital	Capital
<b>Receivable Balances:</b>										
Gross Agent Balances	\$16,600	-	\$0	\$16,600	5.0	\$830	-	-	-	\$830
<b>Reinsurance Recoverables:</b>										
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 & Associations	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
<b>Net Reinsurance Recoverables</b>	<b>20,600</b>	<b>518</b>	<b>0</b>	<b>21,118</b>	<b>8.8</b>	<b>1,848</b>		<b>0</b>	<b>212</b>	<b>2,060</b>
All Other Receivables	27,300	-	0	27,300	4.4 (5)	1,201	-	-	-	1,201
<b>Company Totals</b>	<b>\$64,500</b>	<b>\$518</b>	<b>\$0</b>	<b>\$65,018</b>	<b>6.0</b>	<b>\$3,879</b>		<b>\$0</b>	<b>\$212</b>	<b>\$4,091</b>

## 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.

## Exhibit 9 Loss & Loss-Adjustment Expense Reserve Risk (B5)

(\$ Thousands)

<b>Company A</b>											
Schedule P Line	(1) Carried Reserves %	(2) \$ 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) Capital Charge (6)*(10)
Homeowners/Farmowners	0	-	1.00	1.00	1.00	0	0.37	0.92	1.00	0.34	0
Personal Auto Liability	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	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 Mal - Occurrence	0	-	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
Medical Mal - Claims Made	0	-	1.00	1.00	1.00	0	0.44	0.92	1.00	0.40	0
Special Liability	0	-	1.00	1.00	1.00	0	0.45	0.92	1.00	0.41	0
Other Liability - Occurrence	18.6	17,820	1.35	0.82	1.11	19,727	0.45	0.92	1.15	0.27	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	3,574
Products Liab - Occurrence	0	-	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
Products Liab - Claims Made	0	-	1.00	1.00	1.00	0	0.43	0.92	1.00	0.39	0
Property	0	-	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Auto Physical Damage	0	-	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Fidelity & Surety	0	-	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
Other	0	-	1.00	1.00	1.00	0	0.44	0.92	1.00	0.41	0
International	0	-	1.00	1.00	1.00	0	0.59	0.92	1.00	0.54	0
Reinsurance A	0	-	1.00	1.00	1.00	0	0.45	0.92	1.00	0.42	0
Reinsurance B	0	-	1.00	1.00	1.00	0	0.51	0.92	1.00	0.47	0
Reinsurance C	0	-	1.00	1.00	1.00	0	0.50	0.92	1.00	0.46	0
<b>Total</b>	<b>100</b>	<b>\$95,750</b>	<b>1.14</b>	<b>0.83</b>	<b>0.94</b>	<b>\$89,996</b>				<b>0.28</b>	<b>\$25,005</b>
							<b>Growth Factor</b>				<b>x 1.00</b>
							<b>Diversification Factor</b>				<b>x 0.82</b>
							<b>Adjusted Reserve Capital</b>				<b>\$20,488</b>

<b>Company B</b>											
Schedule P Line	(1) Carried Reserves %	(2) \$ Amount	(3) Deficiency Factor	(4) Discount Factor	(5) Adj. 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) Capital Charge (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	-	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	-	1.00	1.00	1.00	0	0.40	0.86	1.00	0.34	0
Medical Mal - Occurrence	0	-	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
Medical Mal - Claims Made	0	-	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
Special Liability	0	-	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Other Liability - Occurrence	0	-	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Other Liability - Claims Made	0	-	1.00	1.00	1.00	0	0.42	0.86	1.00	0.36	0
Products Liab - Occurrence	0	-	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
Products Liab - Claims Made	0	-	1.00	1.00	1.00	0	0.43	0.86	1.00	0.37	0
Property	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	0	-	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
Other	0	-	1.00	1.00	1.00	0	0.44	0.86	1.00	0.38	0
International	0	-	1.00	1.00	1.00	0	0.59	0.86	1.00	0.51	0
Reinsurance A	0	-	1.00	1.00	1.00	0	0.45	0.86	1.00	0.39	0
Reinsurance B	0	-	1.00	1.00	1.00	0	0.51	0.86	1.00	0.44	0
Reinsurance C	0	-	1.00	1.00	1.00	0	0.50	0.86	1.00	0.43	0
<b>Total</b>	<b>100</b>	<b>\$174,500</b>	<b>1.05</b>	<b>0.92</b>	<b>0.96</b>	<b>\$168,134</b>				<b>0.34</b>	<b>\$57,579</b>
							<b>Growth Factor</b>				<b>x 1.13</b>
							<b>Diversification Factor</b>				<b>x 0.92</b>
							<b>Adjusted Reserve Capital</b>				<b>\$59,829</b>

Notes: Tempered reserve and premium capital factors to reflect a credit for loss-sensitive business.

Source: A.M. Best Co.

Exhibit 10  
**Premium Risk (B6)**  
(\$ Thousands)

<b>Company A</b>							
Schedule P Line	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Net Premiums Written		Baseline Capital Factor	Company Size Factor	Company Profit Factor	Capital Factor	Capital Charge
	%	\$ Amount				(3)*(4)*(5)	(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	2,987
Commercial Multiperil	18.1	6,780	0.40	0.94	0.98	0.37	2,499
Medical Mal - Occurrence	0	0	0.41	0.94	1.00	0.39	0
Medical Mal - 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 - Occurrence	11.6	4,360	0.44	0.94	0.95	0.29	1,264
Other Liability - Claims Made	25.7	9,630	0.37	0.94	1.03	0.26	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	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
<b>Total</b>	<b>100</b>	<b>\$37,480</b>				<b>0.30</b>	<b>\$11,186</b>
				<b>Growth Factor</b>			<b>x 1.00</b>
				<b>Diversification Factor</b>			<b>x 0.85</b>
				<b>Adjusted Premium Capital</b>			<b>\$9,508</b>

<b>Company B</b>							
Schedule P Line	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Net Premiums Written		Baseline Capital Factor	Company Size Factor	Company Profit Factor	Capital Factor	Capital Charge
	%	\$ Amount				(3)*(4)*(5)	(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 Mal - Occurrence	0	0	0.41	0.90	1.00	0.37	0
Medical Mal - 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 - Occurrence	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	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
<b>Total</b>	<b>100</b>	<b>\$230,100</b>				<b>0.36</b>	<b>\$81,780</b>
				<b>Growth Factor</b>			<b>x 1.13</b>
				<b>Diversification Factor</b>			<b>x 0.86</b>
				<b>Adjusted Premium Capital</b>			<b>\$79,351</b>

Notes: Tempered reserve and premium capital factors to reflect a credit for loss-sensitive business.

Source: A.M. Best Co.

## Exhibit 11 Business Risk (B7)

Company A				Company B			
Off-Balance-Sheet Item	(1) Statement Value	(2) Asset Factor %	(1)*(2) Risk Required Capital	Off-Balance-Sheet Item	(1) Statement Value	(2) Asset Factor %	(1)*(2) Risk Required Capital
Noncontrolled Assets	\$0	1	\$0	Noncontrolled Assets	\$8,587	1	\$9
Guarantees for Affiliates	0	1	0	Guarantees for Affiliates	0	1	0
Contingent Liabilities	1,465	1	15	Contingent Liabilities	32	1	0
Long-Term Lease	130	1	1	Long-Term Lease	8	1	0
Interest Rate Swaps	0	1	0	Interest Rate Swaps	0	1	0
<b>Totals</b>	<b>\$1,595</b>	<b>1</b>	<b>\$16</b>	<b>Totals</b>	<b>\$927</b>	<b>1</b>	<b>\$9</b>

Source: A.M. Best Co.

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 capitalization standards suggest Company A's BCAR ratio supports a rating up to B++ (Very Good).

### **Specific Company Commentary**

Company A, which is a small commercial casualty insurance company, focuses its current underwriting on midsized manufacturing business written on a loss-sensitive basis. The company maintains marginally secure capitalization with 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 capitalization with a BCAR

of 102, which is well below its personal-lines peers and marginally supports its current rating of B+ (Very 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.

The company maintains moderate investment leverage driven by its high quality bond portfolio, which is offset largely by its substantial holding in a downstream 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 requirement for premiums, driven by its higher premium leverage of 2.1 times surplus, is exacerbated by 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 rating pressure on the company.

## 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 capitalization levels in excess of the minimum amounts required 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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