

January 17, 2012

Additional Information

Criteria:

Assessing the Tail Risk of Sidecars

Rating Sidecars

Catastrophe Analysis in A.M. Best Ratings

Understanding Universal BCAR

Analytical Contacts

Emmanuel Modu, Oldwick
+1 (908) 439-2200 Ext. 5356
Emmanuel.Modu@ambest.com

Elmo Chin, Oldwick
+1 (908) 439-2200 Ext. 5227
Elmo.Chin@ambest.com

Thomas Mount, Oldwick
+1 (908) 439-2200 Ext. 5155
Thomas.Mount@ambest.com

This criteria report can be found at
www.ambest.com/ratings/methodology

Tail Risk and the BCAR

When an insurer/reinsurer has reinsurance transactions with a sidecar, an assessment first must be made to determine whether there is a risk that the sidecar will have insufficient capital to support its reinsurance obligations to the sponsoring insurer/reinsurer. This risk, which directly impacts the sponsor of the sidecar, is called tail risk. Any tail risk from a sidecar transaction must be incorporated in the assessment of the sponsor's balance sheet strength. This report will outline how this tail risk is reflected in the sponsor's BCAR calculation.

A company's published BCAR is a baseline score that is calculated by reducing 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 3 and 4 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 1 and 2**. **Exhibit 1** 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 1

Example – Sponsor Information

Based on \$600 end-of-year surplus.

PML (Occurrence exceedance 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 2**. It is assumed that the sidecar has a surplus balance of \$60 at the end of the year. Using the procedure outlined in A.M. Best's methodology report, *Assessing the Tail Risk of Sidecars*, the calculated tail risk is \$10.

Exhibit 2

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 3 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 4 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 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 4** 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 4** 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

**Exhibit 3
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 4
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

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 3** (column A) for the base case, and (2) the Stressed BCAR approach in Exhibit 4 (column C) for the stressed case. The specific mechanical steps to accomplish this are as follows:

Base Case

(as illustrated in **Exhibit 4**, 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 4**, 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.

Published by A.M. Best Company

Methodology

CHAIRMAN & PRESIDENT **Arthur Snyder III**

EXECUTIVE VICE PRESIDENT **Larry G. Mayewski**

EXECUTIVE VICE PRESIDENT **Paul C. Tinnirello**

SENIOR VICE PRESIDENTS **Manfred Nowacki, Matthew Mosher, Rita L. Tedesco**

**A.M. BEST COMPANY
WORLD HEADQUARTERS**

Ambest Road, Oldwick, N.J. 08858
Phone: +1 (908) 439-2200

NEWS BUREAU

830 National Press Building
529 14th Street N.W., Washington, D.C. 20045
Phone: +1 (202) 347-3090

**A.M. BEST EUROPE RATING SERVICES LTD.
A.M. BEST EUROPE INFORMATION SERVICES LTD.**

12 Arthur Street, 6th Floor, London, UK EC4R 9AB
Phone: +44 (0)20 7626-6264

A.M. BEST ASIA-PACIFIC LTD.

Unit 4004 Central Plaza, 18 Harbour Road, Wanchai, Hong Kong
Phone: +852 2827-3400



Copyright © 2012 by A.M. Best Company, Inc., Ambest Road, Oldwick, New Jersey 08858. ALL RIGHTS RESERVED. No part of this report or document may be distributed in any electronic form or by any means, or stored in a database or retrieval system, without the prior written permission of the A.M. Best Company. For additional details, see Terms of Use available at the A.M. Best Company Web site www.ambest.com.

Any and all ratings, opinions and information contained herein are provided "as is," without any expressed or implied warranty. A rating may be changed, suspended or withdrawn at any time for any reason at the sole discretion of A.M. Best.

A Best's Financial Strength Rating – Insurer 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.

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.

A.M. Best does not offer consulting or advisory services. A.M. Best is not an Investment Adviser and does not offer investment advice of any kind, nor does the company or its Rating Analysts offer any form of structuring or financial advice. A.M. Best does not sell securities. A.M. Best is compensated for its interactive rating services. These rating fees can vary from US\$ 5,000 to US\$ 500,000. In addition, A.M. Best may receive compensation from rated entities for non-rating related services or products offered.

A.M. Best's special reports and any associated spreadsheet data are available, free of charge, to all *BestWeek* subscribers. On those reports, nonsubscribers can access an excerpt and purchase the full report and spreadsheet data. Special reports are available through our Web site at www.ambest.com/research or by calling Customer Service at (908) 439-2200, ext. 5742. Some special reports are offered to the general public at no cost.

For press inquiries or to contact the authors, please contact James Peavy at (908) 439-2200, ext. 5644.

SR-2011-M-349