

# Insurance

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## CATASTROPHE BONDS

### Insurance-Linked Securities: *Last Asset Class Standing*

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For the past decade, RMS, along with other proponents of catastrophe bonds, has been touting the asset class as “one of the few investments not linked to the global economy.” We were confident the bull market would eventually correct itself and showcase one of the few truly uncorrelated fixed income investments. That said, we were not anticipating anything like the global economic meltdown we are now experiencing.

Few asset classes could be expected to emerge unscathed from the financial catastrophe engulfing the global capital markets. Securitization would seem the last place to look for strong performance in the current climate, as many cite the explosive growth of asset-backed securities—seemingly complex and opaque instruments—as the key trigger behind the crisis.

Nevertheless, catastrophe bonds have passed this momentous “correlation test” with flying colors—not a perfect grade, but definitely at the top of the class.

#### A Near Perfect Performance

Catastrophe-linked securities contain enough risk that they earn an attractive spread, but have shown extremely low correlation with virtually all other asset classes. The picture in Exhibit 1 speaks a thousand words. Notice that the Swiss Re BB Cat Bond index (blue line) follows a steady upward trend with two relatively small downward corrections. The first is in 3Q05, which corresponds to Hurricane Katrina, the costliest natural catastrophe in recent history.

The second is in 4Q09, coincident with the credit crisis and the default of Lehman Brothers.

If catastrophe bonds were completely uncorrelated with other assets classes, we would not have seen this blip. There were two issues that tarnished an otherwise perfect performance.



Exhibit 1 – Swiss Re BB Cat Bond Index

Source: Bloomberg

#### Credit Risk Sneaks In, But Is Quickly Stamped Out

The culprits responsible for the small correlation between catastrophe bonds and global economic risk are: counterparty credit risk and liquidity contagion risk. Counterparty credit risk crept into the catastrophe bond structure through the collateral account mechanism. Catastrophe bonds are fully collateralized by high quality assets invested in a collateral account. As another line of defense, this high-

quality portfolio is guaranteed by a total return swap counterparty that guarantees the principal of the account, and converts returns to a LIBOR basis.

So, the rationale was that to lose any money from the collateral account, you would need two highly unlikely events to happen concurrently: significant impairment of a high-quality portfolio and the default of a high-quality swap counterparty.

As it transpired, four bonds within the roughly 120 catastrophe bond classes outstanding had both mortgage-related assets in the collateral account, and Lehman Brothers as the swap counterparty. All four bonds were downgraded following the collapse of Lehman Brothers, with Willow Re officially in default and Ajax Re reportedly expected to default on its March payment.

The total principal at risk in these four bonds represents less than 5% of the total outstanding principal in the market. This is, however, still enough to cause a small correlation between catastrophe bonds and other assets.

Following the Lehman Brothers default, three catastrophe bonds have been brought to market—Atlas V, sponsored by French reinsurer Scor; Mystic Re II, sponsored by Liberty Mutual; and East Lane Re, sponsored by Chubb—all of which have included improved structures to reduce the credit risk in the collateral account. In addition to placing tighter restrictions on what can go in the collateral account—for example, more liquid securities that are in line with the duration of the bonds themselves—and focus on more disclosure, the account is marked to market daily. While this does not completely eliminate credit risk, it reduces it dramatically.

### Investors Have More Information Than Ever

In the asset class' infancy, investors had to rely on an "expertized" risk analysis performed by one of the three main catastrophe modeling firms. The expected loss for the security was included in the offering circular, and used for both obtaining a credit rating and pricing.

Over the past year, all three modeling firms have introduced portfolio management software platforms that provide expected loss and other risk metrics for existing bonds and those about to be placed. Investors now have access to three independent views of the risk and are better informed than ever when making investment decisions.

### Pricing Is Attractive, Especially For Diversifying Investors

Catastrophe bonds offer attractive spreads, especially to investors that have small concentrations in catastrophe risk

and therefore benefit from their diversifying effect.

If we consider yield requirements for various allocations of catastrophe bonds in a diversified portfolio of stocks and bonds, pricing in recent years shows a very attractive return. The Required Spreads graph in Exhibit 2 shows the spread over LIBOR required for different allocations of a 1% Expected Loss catastrophe bond. For this scenario we assume the existing portfolio has a 1% tracking error relative to its benchmark, and the manager has a goal of a 1.0x information ratio.

Let us now compare these required spreads to actual market spreads, also shown in Exhibit 2. We selected three bonds issued since May 2007 with a 1% Expected Loss (+/- 0.05%) as reported in the offering circular. The picture speaks for itself. If you have no exposure to catastrophe bonds, then adding an allocation of less than 5% to each peril can improve your information ratio dramatically. Put another way, this picture shows marginal "alpha" on these investments of up to 10%.

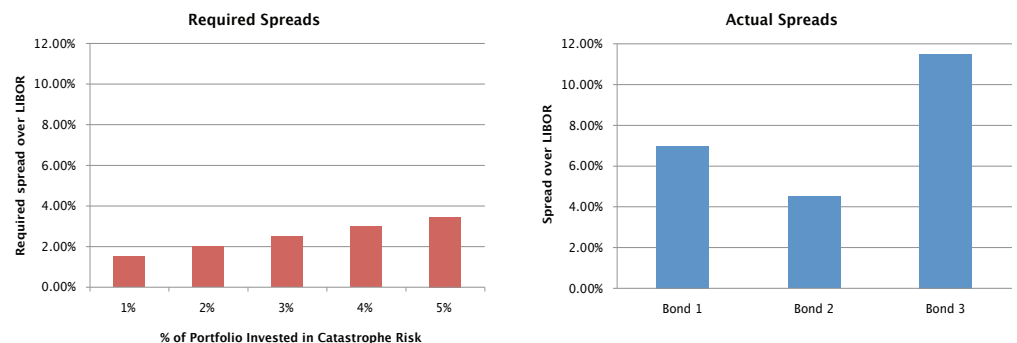


Exhibit 2 – Required vs. Actual Spreads

Source: RiskMarkets analysis, Bloomberg

### Chicken and Egg

One reason that large institutional investors have watched this asset class from the sidelines is that it is too small. Peak issuance in 2007 was only \$7 billion—tiny compared to most asset classes. But the potential for the asset class is enormous. There is easily enough risk transferred in the market today to fuel a \$50 billion per year market; issuers only need sufficient incentive to issue this many bonds.

This is likely to occur when there is a "virtuous cycle" of investment and issuance. If more investors enter the market, yields will drop, which will encourage insurers and reinsurers to issue more bonds. The growing market will attract more investors, yields will fall further and the cycle will continue. Ultimately, everyone should win, with investors getting a diversifying asset class with an attractive spread, insurers and reinsurers gaining access to cheaper capacity, and homeowners and business owners getting cheaper insurance for their properties.

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