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Foreword

The Catastrophe Bond Market at Year-End 2007: The Market Goes Mainstream, sponsored by GC Securities, marks the sixth installment of our annual review of the catastrophe bond market and our first under the GC Securities banner. In October 2007, as part of an overall effort to convey our affiliation with Guy Carpenter more effectively, GC Securities was created as the trade name for Guy Carpenter's division within MMC Securities Corp.

This report provides an update on cat bond transaction activity and market dynamics for the past year. In addition to providing a summary of all disclosed transactions for the year, we discuss changes to the dynamics of the market, including the perceptions of sponsors and investors. A study of granular transaction statistics addresses changes to transaction size, perils, trigger types and other factors that have shaped the cat bond market. We encourage readers who are not familiar with cat bonds to review "Appendix I: Catastrophe Bonds 101" in our 2006 publication, *The Catastrophe Bond Market at Year-End 2006: Ripples into Waves*, which provides an overview of these evolving risk transfer instruments. The 2006 report, as well as all of our other publications, is available online at www.guycarp.com.

The Catastrophe Bond Market at Year-End series focuses on securitization activity involving natural catastrophe and, to a lesser extent, extreme mortality risk. While in previous years we confined the report to the cat bond market, market activity in 2006 encouraged us to broaden our scope. As in *Ripples into Waves*, the emphasis remains on the cat bond market, though we do comment on sidecar activity and extreme mortality transactions (mostly in the appendices). Deliberately not addressed, however, are other insurance securitization transactions, such as instruments that securitize the risk of motor insurance, weather derivatives or embedded value life insurance transactions. This report only references publicly disclosed transactions. Truly private placements – in which issuances typically are not disclosed to outside parties – are excluded from summary statistics. Finally, while potential catastrophe bond sponsors are our primary audience, we trust that all industry participants will find this report valuable.

CHRISTOPHER MCGHEE
Managing Director
GC Securities

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Executive Summary

After a decade of use and refinement, catastrophe bonds ("cat bonds") have matured substantially. They have become integrated into modern catastrophe risk management practices. Issuance activity rates accelerated dramatically, even in the wake of two consecutive annual new issuance records. With rates softening for traditional reinsurance capacity, a third consecutive record-setting year characterized the cat bond market in 2007.

This year was the most active in the history of the cat bond market, shattering all previous issuance records with USD7 billion[1] in publicly disclosed transactions, up 49 percent from last year's record of USD4.7 billion and a 251 percent increase over the USD2 billion placed during 2005. Twenty-seven transactions were completed, also a new record, exceeding the 20 transactions that closed during 2006. This is nearly triple the 10 transactions placed during 2005. Allstate, Chubb, Travelers and State Farm were among a record number of first-time sponsors. These four sponsors alone sponsored cat bond limits of USD2 billion.

Cat bond risk capital outstanding was USD13.8 billion at year-end, a 63 percent increase over USD8.5 billion in 2006 and nearly three times the USD4.9 billion outstanding at the end of 2005. Cat bond risk principal now composes 8 percent of the estimated property limits globally and 12 percent on a U.S.-only basis.[2]

Since 1997, when the market began in earnest, 116 cat bonds have been issued, with total risk limits of USD22.3 billion. Of this total, 52 percent (USD11.7 billion) have been issued in the last two years alone. Further, the use of shelf offering programs accelerated throughout 2007. New shelf offerings, or takedowns from existing shelf offerings, accounted for 21 of 27 transactions and more than 70 percent of total risk capital issued.

Five indemnity-triggered transactions totaling USD2.3 billion were issued in 2007. Not including State Farm's USD1.1 billion Merna transaction, the largest transaction in the market's history, indemnity-triggered transactions still totaled USD1.2 billion. This adjusted total is a 44 percent increase[3] over 2005's previous record high of USD859 million and more than seven times greater than the USD173 million of indemnity-triggered issuances in 2006.

1 For transactions issued in denominations other than USD, principal amounts are converted as of the issuance date.

2 Estimates of global and U.S.-only reinsurance property limits (USD169 billion and USD81 billion, respectively) are as of December 2007 and are provided by Guy Carpenter & Company, LLC.

3 All figures have been rounded; calculating percentages based on figures in their current form may not yield stated growth rates.

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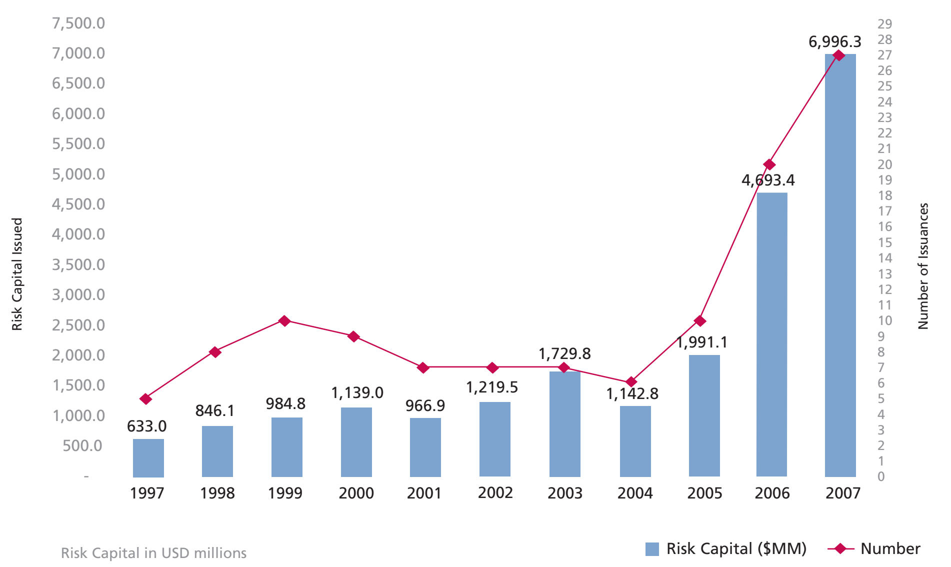
Year-End 2007 Catastrophe Bond Market Update

2007 Transaction Summary

With USD7 billion in publicly disclosed issuances for the year, 2007 was by far the most active year in the history of the catastrophe bond market. Record-setting years are becoming commonplace, as this is the third year in a row in which a new issuance record was established. Cat bond issuance volume for 2007 increased by 49 percent over the 2006 record of USD4.7 billion and 251 percent over the 2005 record of USD2 billion. The 27 transactions completed exceeded the 20 closed in 2006 and nearly tripled the 10 placed in 2005.

FIGURE 1: ANNUAL RISK CAPITAL ISSUANCE AND NUMBER OF TRANSACTIONS



- Within any single year, takedowns from shelf offerings are consolidated and considered one transaction.
- Takedowns from individual shelf offerings, occurring in different years, are considered separate transactions in the year in which the takedowns are completed.
Source: GC Securities

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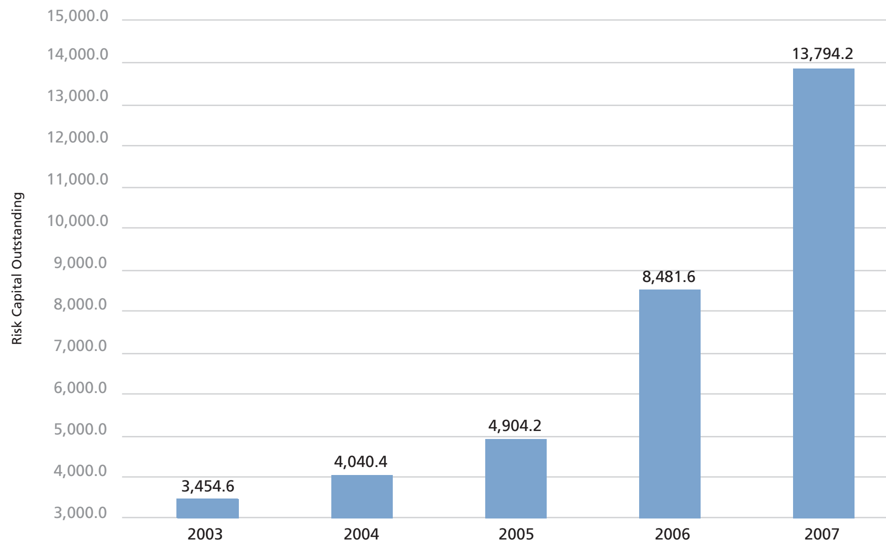
Since 1997, when the cat bond market began in earnest, 116 cat bonds have been issued with total risk limits of USD22.3 billion. Bond principal outstanding also showed strong growth in 2007; this is perhaps the most important measure of market size and risk-bearing capacity. At year-end, there was more than USD13.8 billion of outstanding principal, a 63 percent increase over the 2006 year-end total of USD8.5 billion and nearly three times the USD4.9 billion in capacity outstanding at the end of 2005.

FIGURE 2: YEAR-END RISK CAPITAL OUTSTANDING



All figures in USD millions

- On an annual basis, total risk capital outstanding (which measures the total bond principal currently at risk in the market as of the relevant year-end, regardless of issuance year) is distinct from total risk capital issued (which measures the incremental risk capital issued in a given year). Given that the vast majority of bonds are issued for a multi-year term, this distinction explains the significant difference in annual volume between Figures 1 and 2.

Source: GC Securities

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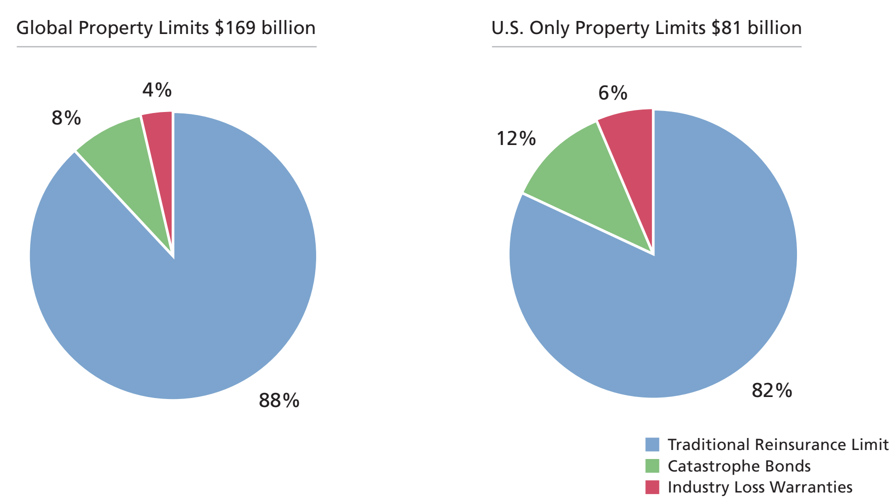
When viewed as a proportion of total catastrophe limits outstanding, the cat bond market is both substantial and meaningful. Cat bond limits represent 12 percent of estimated property limits outstanding in the United States – which is the world's "peak" exposure zone – where theoretically, the ability of capital markets to absorb large losses offers the greatest potential.

FIGURE 3: CAT BONDS AS A PROPORTION OF LIMITS OUTSTANDING FOR WORLD AND U.S. ONLY



Source: GC Securities (catastrophe bond figures); Guy Carpenter & Company, LLC (reinsurance and ILW figures)

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Annual Activity Summary

First Quarter

ACE, using Swiss Re as a pass-through reinsurer, sponsored a USD250 million takedown[4] from its Calabash Re program in the first week of January. This transaction provides ACE with protection against qualifying U.S. hurricanes and earthquakes. Sponsors' focus on January 1 renewals likely dominated the first quarter, as the only other transaction was Swiss Re's USD50 million takedown from its Australis Ltd. program, which provides protection against Australian earthquakes and windstorms.

Second Quarter

Issuance activity surged with 17 transactions. More than USD3.5 billion of risk principal came to market. In April, Allianz returned to the capital markets for the first time since 1999, sponsoring a USD150 million initial takedown from Blue Wings Ltd., a newly created shelf program. This takedown provides Allianz with protection against U.S. and Canadian earthquakes as well as UK floods (a first-time peril for the cat bond market). Blue Wings remained loss-free in the aftermath of the UK's summer floods, primarily because of attachment levels and geographic weights in the bond trigger mechanism relative to the main areas of insured losses. Also in April, Bermuda-based Aspen Insurance Group sponsored Ajax Re Limited, its first 144A cat bond. Ajax Re is a USD100 million offering, which provides protection against California earthquakes. Finally, Chubb sponsored the last transaction of April, a USD250 million takedown from East Lane Re Ltd. This provides protection against U.S. hurricane losses occurring in a stretch of the eastern seaboard from Virginia to Maine.

A flurry of activity occurred in May. Munich Re sponsored a USD150 million takedown from its Carillon Ltd. program, thereby obtaining additional protection against U.S. hurricane losses. U.S. insurance giant Travelers sponsored its first cat bond, Longpoint Re Ltd. At USD500 million, Longpoint Re is the largest single peril-exposed individual takedown in the history of the cat bond market. It protects against hurricane losses in the Northeastern United States. Mitsui Sumitomo, using Swiss Re as a pass-through reinsurer, entered the market for the first time, sponsoring a USD120 million takedown from Akibare Ltd. to obtain protection against Japanese typhoon risk. Liberty Mutual returned to the market with a USD150 million takedown from Mystic Re II Ltd. Similar to Mystic Re Ltd., sponsored in 2006, Mystic Re II provides protection for U.S. hurricane events causing insured damages from Maryland to Maine.

4 A "takedown" involves the use of a shelf offering to issue multiple cat bond series from a single filing. The concept is explained in more detail in the "Catastrophe Bond Purchases Shift from Tactical to Strategic" subsection of "Market Dynamics."

May brought another first for the cat bond market. Nephila, the Bermuda-based insurance risk asset manager, sponsored Gamut Re Ltd. The USD265 million transaction[5] brings an actively managed collateralized debt obligation ("CDO") approach to the catastrophe risk space. Gamut funds Nephila's ability to assume risks around the world, subject to underwriting and concentration limitations stipulated in transaction agreements. Also in May, USAA sponsored its eleventh Residential Re transaction and largest to date at USD600 million. USAA's issue provides protection against earthquake and U.S. hurricane events. Swiss Re sponsored two transactions for its own book. The first was a multi-peril exposed USD100 million takedown from Successor II Ltd. The second transaction, USD100 million for Medquake Ltd., represented a first-time securitization of earthquake risk in Cypress, Israel, Greece, Portugal and Turkey.

In June, sponsors continued to prepare for what was predicted to be an active U.S. wind season. Glacier Re sponsored Nelson Re, a USD75 million transaction providing protection against U.S. hurricane and earthquake perils and European windstorms. Allstate also sponsored its first cat bond, Willow Re. Ltd, a USD2 billion shelf program from which it issued USD250 million of Class B notes to obtain protection for Northeast U.S. hurricanes. Swiss Re sponsored a USD330 million initial takedown from a new shelf program, Spinnaker Capital Ltd. Spinnaker provides protection for U.S. hurricane events. UK-based Brit Insurance Company sponsored Fremantle Ltd., a USD200 million offering that, similar to the 2006 Bay Haven Ltd. transaction, provides "sideways" protection for multiple subsequent events after a specified number of qualifying deductible events have occurred.

June's activity concluded with the innovative USD140 million Fusion Ltd. transaction. Co-sponsored by Kyoei Fire and Marine and Swiss Re to provide protection for both Mexican earthquakes and Japanese typhoon perils, Fusion relies in part on a reference trigger mechanism. While the Japanese typhoon risk coverage comes from the underwriting activities of Kyoei Fire and Marine, the Mexican earthquake risk is incorporated exclusively via reference to the existing Cat-Mex Ltd. transaction issued in 2006.

5 As reported by Bloomberg, Gamut Re Ltd. is a USD311.5 million transaction. USD46.5 million of this total is comprised, however, of the residual Class E notes, which at least in part were retained by Nephila as an indication of interest alignment between itself and investors. As the Class E notes do not have an expected loss per se and are not quoted in the secondary market, they have been excluded when calculating cat bond issuance activity for the purpose of this report. Accordingly, we have listed Gamut Re as a USD265 million transaction.

Third Quarter

State Farm entered the cat bond market in early July with Merna Reinsurance Ltd, its first transaction on an exclusive basis. Merna was the largest single issuance in the market's history at more than USD1.1 billion of risk capital. This transaction, which relies on an indemnity trigger, provides protection for U.S. and Canadian hurricane and earthquake perils, as well as tornado and hail and winter storms. By comparison, the USD950 million June 2006 takedown from the Successor program, which until Merna was the largest transaction ever completed, had exposure to four perils in three geographic areas and used three trigger types. Fitch awarded the Merna tranches ratings of A- to AAA. Therefore, the capacity generated is further removed from losses relative to more "typical" cat bonds, which are most frequently awarded a Standard & Poor's (S&P) rating of BB (or analogous).

Other July activity included Swiss Re's USD50 million takedown from its Spinnaker Capital shelf program, which secured protection for U.S. hurricane events, and Arrow Capital's USD125 million Javelin Re Ltd. The Javelin Re transaction uses an indemnity trigger to provide protection for multiple perils, including small amounts of perils either not modeled or modeled only with Arrow's proprietary models. Arrow supplemented internal modeling with a peer review performed by a third-party modeling firm. No issuances were completed in August or September, which historically has been a quiet period for the market.

Fourth Quarter

The first deal of the quarter, Midori Ltd., came to market in early October. This USD260 million transaction, which provides protection against Japanese earthquakes, was sponsored by East Japan Railway ("JR East") using Munich Re as a pass-through reinsurer. JR East is one of the world's leading passenger railway operations, serving approximately 16 million passengers daily.[6]

Two transactions closed in November. Allianz sponsored its second transaction of the year with Blue Fin Ltd. at USD291 million. Blue Fin secures coverage for Allianz's exposure to European windstorms. SCOR closed Atlas Reinsurance IV Ltd., a USD235 million transaction covering Japanese earthquake and European wind perils.

6 East Japan Railway company website, http://www.jreast.co.jp/e/data/index.html.

As in previous years, 2007 came to a close with considerable activity in December. In total, four deals closed, involving risk capital of USD1.1 billion, while takedowns from existing shelf programs contributed another USD100 million. Catlin's Newton Re Limited came first, providing USD225 million of protection against qualifying U.S. hurricanes and earthquakes. French insurer Groupama also sponsored its first transaction, Green Valley Ltd., which provides USD288 million of protection for French windstorm events. Swiss Re sponsored two more transactions and completed a USD100 million takedown from its Successor Ltd. program. Globecat Ltd., the first of the two Swiss Re transactions, provides USD85 million of protection for several perils through three separate tranches. The Class A Notes (USD40 million) provide protection for U.S. hurricane events, the Class B Notes (USD20 million) provide protection for California earthquake events and the Class C Notes (USD25 million) provide protection for Latin America earthquake events causing damage in Guatemala and El Salvador. Swiss Re sponsored Redwood Capital Ltd. X, a USD499 million transaction and the last of the year. Since 2001, Redwood Capital issuances have generated USD1.7 billion of protection for qualifying California earthquakes through seven separate transactions.

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Market Dynamics

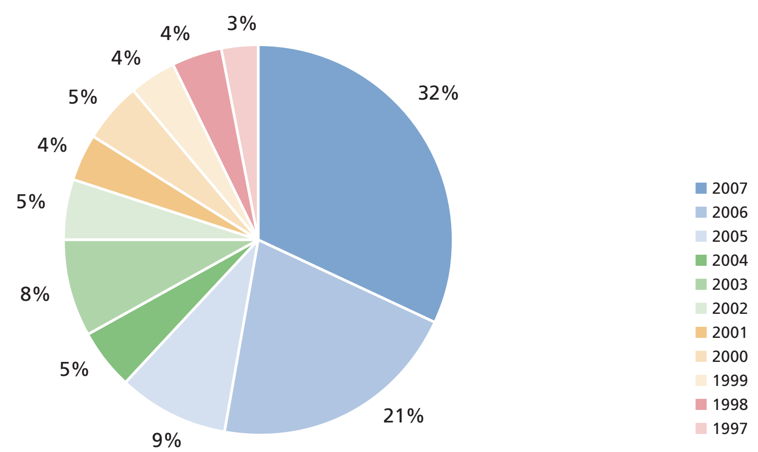
The dramatic increase in cat bond issuances in 2007 demonstrates the maturation of this market. Through 2007, cat bonds in particular and capital markets in general have become core providers of risk transfer capacity to insurers and reinsurers. Even with reinsurance prices softening and capacity widely available, cat bonds have become important tools for cedents. Market activity levels have ended the argument that cat bonds are only an exotic option purchased for prestige or used only in times of desperate shortages of traditional capacity.

A Tipping Point Reached? – The Triumph of Substance over Form

The insurance industry embraced capital markets fully in 2007, due in part to record-breaking activity levels in 2005 and 2006. The assimilation of capital markets solutions into the standard spectrum of risk transfer tools available to insurers, reinsurers and even insureds, however, has been mentioned frequently in past editions of this report and has been a popular industry topic for years.

While the cat bond market has been in existence for a decade, development has not been smooth over this timespan. In a manner consistent with other modern economic phenomena, market growth progressed slowly for several years. After reaching a critical mass, though, growth has accelerated dramatically over the past two years. Fifty-two percent of all cat bond limits placed have occurred in the last two years alone, with 2007 up considerably from 2006.

FIGURE 4: RELATIVE CONTRIBUTION OF CAT BOND LIMITS TO TOTAL BY YEAR



Source: GC Securities

As a result of rounding, percentages may not sum to the actual total.

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One of the key dynamics of 2006 was the increased visibility of non-traditional capacity sources, such as proprietary trading groups within large banks, hedge funds, asset managers and other non-reinsurer liquidity holders. These new capacity providers frequently were approached only after the standard marketing process had failed to achieve placement targets, though there was considerable use of these alternatives. To a certain extent, it was clear that not all cedents were comfortable with these new providers, in part because of a lack of process and personal familiarity among counter-parties. Trust levels were lower, because relationships with traditional reinsurance providers often span several decades. Though significant amounts of work remain, great strides were made in 2007 to reduce these “familiarity barriers.” The results of these efforts are clear. The increased velocity and flexibility of new capital entering the market during the capacity crunch of 2006 truncated what otherwise would have been an almost certainly more protracted hard market.

Guy Carpenter clients have increased requests for the consideration of capital markets solutions, demonstrating the integration of non-traditional capacity providers into the reinsurance process. While the request rate increased notably in 2006, it effectively was not a separate request in 2007. Instead, capital markets solutions became a standard option, with their consideration becoming the norm for practically every client at every renewal. The fact that a capacity provider is organized in a particular manner is becoming less relevant.

A similar dynamic is evident in the type of mechanism risk cedents and risk bearers use to facilitate an agreement. Capital market capacity providers frequently are able to transact across various structures almost seamlessly. This includes direct capital investment in start-up companies, sidecar investments, contingent capital structures, industry loss warranties (ILWs), exchange-traded contracts, cat bonds and collateralized reinsurance. Transaction objectives and investor return targets have begun to play an important role in determining which structure is the most effective in a particular instance.

Catastrophe Bond Purchases Shift from Tactical to Strategic

The dramatic growth of the cat bond market in 2006 was unsurprising. The losses sustained by the industry from 2004 and 2005 catastrophe activity created an estimated capital shortfall of USD142 billion,[7] with the underlying storm activity causing risk transfer prices to skyrocket. In an expected reaction to a perceived opportunity, high-velocity capital entered the market to address some of this demand overhang. Because of an established investor following, marketing and issuance and documentation protocols, the cat bond market was particularly well-suited to address this need. Accordingly, an all-time issuance record was established in 2006. Heading into 2007, however, it remained to be seen if capital markets activity would remain high in the context of a potentially softening market.

The record market activity of 2007 demonstrates a fundamental shift in the perception of the capital markets as a risk transfer solution. During the year, the paradigm shifted away from the idea that sponsors were seeking capital markets protection as a defensive, tactical measure taken only in the context of a dearth of traditional capacity. Rather, they took the view that the capital markets represent a valuable source of significant amounts of high-quality risk transfer capacity, causing them to invest in this area. In fact, several large sponsors that were unwilling to purchase expensive protection during the hard market of 2006 turned to cat bonds during 2007, even with additional traditional capacity available.

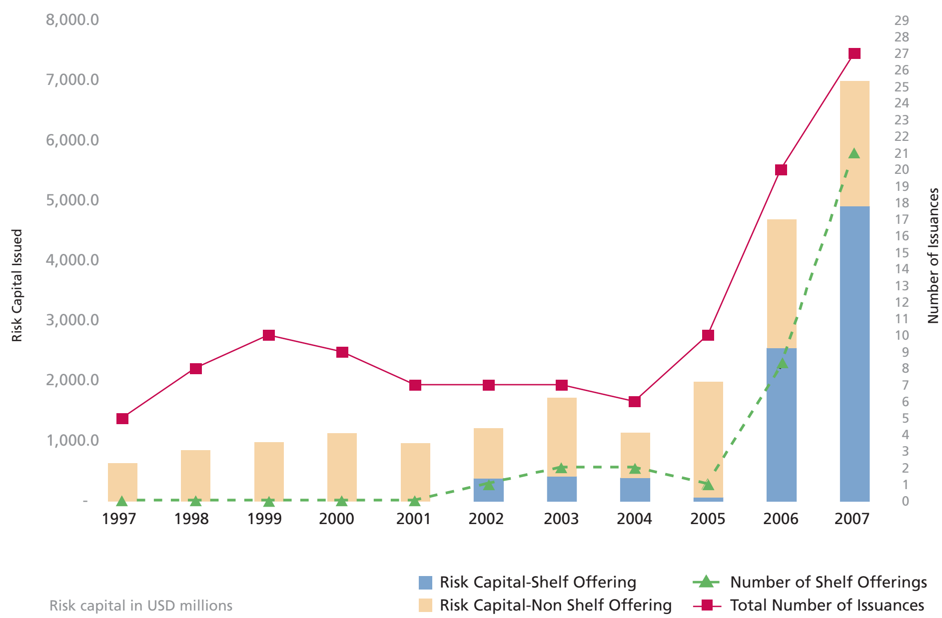
The ability to access capital markets capacity became a strategic priority in 2007, as evidenced by the incidence of shelf offerings. Sponsors demanded an alternative source of risk capital and were willing to invest in it, because many had experienced whipsaw traditional price increases throughout 2006. With a shelf offering, a sponsor acquires the option to issue additional bonds (often referred to as takedowns) as it sees fit over the course of a prescribed risk period. Among the advantages of this approach is that the sponsor incurs substantially lower issuance costs for each additional takedown than it does for the initial program.[8]

New shelf offerings and takedowns from existing shelf offerings accounted for 21 of 27 issuances and more than 70 percent of risk capital issued during the year. In addition, of the 11 first-time cat bond sponsors in 2007, seven elected to use shelf offering programs rather than a one-time issuance mechanism. Shelf offering issuance by first-time sponsors accounted for more than 49 percent of the total risk capital issued by all first-time sponsors during the year.

7 The capital shortfall estimate was provided in June 2006 by Risk Management Solutions, Inc. and is composed of USD60 billion of losses related to Hurricanes Katrina, Wilma, Rita and an additional USD82 billion to reflect the increased perception of hurricane activity rates and required capital levels. Record profits elsewhere in the industry helped to offset capital shortfalls.

8 For a more complete discussion of shelf offering mechanics, please refer to pages 10 and 11 of our year-end 2006 publication, *Ripples into Waves*, available at www.guycarp.com.

FIGURE 5: HISTORY OF SHELF OFFERING USAGE



- Within any single year, takedowns from shelf offerings are consolidated and considered one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.

Source: GC Securities

GC SECURITIES

Shelf offerings support both long-term planning and near-term maneuvering. While they make it easy to access capital quickly in the event of an emergency, shelf offerings also signal to capital markets and traditional capacity providers that a sponsor is interested in being a consistent, repeat issuer. Committed catastrophe risk investors tend to reward repeat issuers with progressively tighter execution pricing, provided that the issuer has a strong track record.

Some potential sponsors were wary of relying on a single supplier for such a critical component of their business models (i.e., risk transfer capacity for peak risks).

The capacity crunch of 2006 left most potential cat bond sponsors concerned that they could be vulnerable to an excessively volatile reinsurance risk transfer market. Companies throughout the industry reevaluated their approaches to risk management. Most favored an Enterprise Risk Management (ERM) approach rather than focusing on risk at the operating unit level. The number of cat bond and shelf offering issuances in 2007 suggests that some potential sponsors were wary of relying on a single supplier (i.e., the traditional market) for such a critical component of their business models (i.e., risk transfer capacity for peak risks). A global environment in which catastrophe events appear to be increasing and insured values are expanding rapidly in catastrophe-exposed areas calls for diversification of risk capacity sources. For certain sponsors, there may be tangible benefits associated with being able to show public equity markets that, in the event of the next capacity "crunch", a cat bond shelf program provides an additional conduit to risk transfer capacity.

The advantages of product consistency (i.e., more reliable year-over-year capacity and pricing) can benefit both insurance and reinsurance companies directly, not to mention shareholders and insureds – both individual and corporate. The ability to curtail post-event volatility through product consistency thus may be the most important attribute of the capital markets as a supplemental risk transfer solution.

The Resurgence of Indemnity Triggers

In 2006, GC Securities suggested that basis risk could constrain the further rapid growth of the cat bond market. This year, though, the industry has shown that the management of basis risk is changing quickly.

A simple way to gauge the market's sensitivity to basis risk is to look at the number and total size of indemnity trigger transactions completed during the year. There were five indemnity transactions completed in 2007 (the largest total since 1999), involving more than USD2.3 billion of risk capital. Even without State Farm's USD1.1 billion Merna transaction, more than USD1.2 billion in indemnity trigger transactions was issued. This adjusted total represents more than 19 percent of the total risk capital issued during the year, and is more than 44 percent[9] higher than 2005's previous record level of USD859 million. Net of Merna, 2007's indemnity trigger issuances were more than seven times greater than 2006's USD173 million.

At first glance, this activity suggests a significant change with respect to indemnity triggers. The reality, though, is a bit more nuanced. Perceptions regarding indemnity triggers and basis risk continue to evolve. The surge in investment capital seeking cat bond opportunities favored sponsors, as they had more leverage to drive terms and conditions. In several cases, sponsors took advantage of this enhanced bargaining power to purchase indemnity protection in the cat bond market and in some cases were able to include small amounts of unmodeled perils in transactions.

9 All figures have been rounded; calculating percentages based on figures in their current form may not yield stated growth rates.

All sponsors, however, did not share a uniform view of indemnity protection. There were some who could have issued cat bonds with indemnity triggers but chose other options instead.[10] While indemnity trigger transaction activity was up considerably from 2006 (and even relative to historical precedent), the absence of even more growth and the persistence of other trigger types shows that the market is not ready to surrender its alternatives.

Sponsor Perceptions

As the cat bond market has become a more mainstream capacity option, sponsors have spent considerable time and resources understanding their exposures to basis risk. While sponsors generally prefer indemnity protection to non-indemnity protection if all else is equal, the practical utility of this position is waning. With respect to indemnity versus non-indemnity transactions, all else is not equal, and the differences between each type of protection represent important cost-benefit decisions that sponsors are making in an increasingly sophisticated fashion.

Sponsors perceive indemnity transactions as reliable and familiar, largely because they resemble Ultimate Net Loss (UNL) cover and result in minimal basis risk. But, they typically entail three disadvantages relative to non-indemnity triggers: risk spread premium, disclosure requirements and perceived legal exposure and the process, time and cost necessary to issue.

Risk spread premium – Indemnity trigger transactions generally require a risk spread premium relative to non-indemnity transactions. The size of this premium is a function of the type of business covered (and the associated modeling credibility) and the market's confidence in the sponsor's underwriting, risk management, loss and claims adjustment processes, among other factors.

Disclosure requirements and perceived legal exposure – Because the risk to investor capital is a function of not only catastrophe activity but also the protocols of the sponsor itself, substantial disclosure of internal, often sensitive or proprietary, information is required. In addition, sponsors often feel their exposure to post-event legal action is greater for an indemnity transaction than a non-indemnity one.

Transaction Process, Issuance Expense and Management Time Required – Because of the additional disclosure requirements and due diligence required, indemnity transactions tend to take longer to complete. Also, they usually carry higher transaction costs because of increased modeling and legal review involved. Sponsors should be prepared to commit substantial internal resources to facilitate the transaction.

10 Investor concerns remain over modeling integrity with respect to complex commercial exposures, reinsurer portfolios (as data specificity tends to decline) and portfolios outside the U.S. Accordingly, for risks that heavily involve these factors, it is still the case that indemnity trigger protection from the catastrophe bond market may not be available.

In 2007, sponsors focused on the interplay of these factors, relative to the potential basis risk, pricing and execution achievable through non-indemnity transactions. There is a growing awareness that specific transaction objectives should trump the perceived superiority of one trigger type over another.

Investor Perceptions

Investor perceptions with respect to indemnity triggers also shifted over the course of the year. Though an imbalance between supply and demand prompted some investors to bend slightly on terms and conditions, market conditions alone do not provide the full explanation.

The cat bond investor community, particularly the core group of longstanding committed investors, is adjusting its perception of potential basis risk. The rejection of indemnity risk on the basis of moral hazard alone has become outdated.[11] Now, many committed cat bond investors tend to recognize indemnity risk as simply another risk component in a transaction, provided that they have sufficiently reliable modeling and are comfortable with the ceding entities. Depending on sponsor-specific judgment, in conjunction with considerations such as the longer post-event loss adjustment and principal payout process, investors will adjust their required spreads or available capacity. As the understanding of sponsor-specific risk increases, investors are not uniformly changing their required spreads upward while reducing capacity allocations (though this is the norm). Judgment is playing a more prominent role than ever before.

USAA sponsored its eleventh consecutive cat bond issuance (USD600 million through Residential Re) in 2007. All 11 of USAA's transactions have used indemnity triggers, although for the first time, USAA implemented a shelf offering mechanism. A strong reputation and track record in the cat bond market – in conjunction with a book of business that many believe can be modeled reliably – benefit USAA in its cat bond issuances. Furthermore, USAA has proven itself to be investor-friendly. For example, the sponsor releases estimate notices promptly to inform investors of factors relevant to the current value of the Residential Re notes. Thus, the market has rewarded USAA's commitment and practices by applying a substantially reduced risk spread premium to the indemnity-triggered Residential Re bonds relative to similar notes that use a non-indemnity trigger.

11 Of course, this remains subject to various investment guidelines to which many cat bond investors must adhere. The continued existence (and growth) of cat bond investors who are only willing and able to invest in non-indemnity catastrophe bonds remains a critical component of the development of the catastrophe bond market. A deep, robust market with many investors, each with individual preferences, should be the ultimate goal.

Savvy investors (including several reinsurers) are recognizing that basis risk typically cuts both ways. If one believes that catastrophe models provide reasonably accurate loss estimates on an industry-wide basis, its reasonable to expect some insurers to outperform (pay less than expected) while others underperform (pay more than expected). Over a large enough portfolio of individual cedents, basis risk should net out in the aggregate. For this theory to manifest itself in practice, there must be a sufficiently sized pool of indemnity transactions to include in a diversified portfolio. The market's desire for a larger pool of indemnity transactions on this basis may also be contributing to an increased appetite for indemnity trigger deals.

The Coexistence of Different Trigger Types Will Continue

Flexibility rather than the desire for a single trigger type appears to be the prevailing force in the cat bond market. The ability of all market participants to understand, evaluate, price and ultimately transact efficiently using various triggers indicates the cat bond market's continued maturation. Over time, the size of the risk spread premium (if any) should reflect the market's perception of a sponsor's internal processes, as long as there are no shocks. To the extent that a sponsor feels that the market misunderstands its true risk profile, it can elect to purchase non-indemnity cover. With the continued development of improved index and parametric tools (still an area of considerable focus for modeling firms and the industry in general), these covers should become more reliable and widely accepted by sponsors.

2007 Credit Crisis Validates the Cat Bond Asset Class "Story"

The credit crisis of 2007, which at the time of printing is estimated to have resulted in asset "write-downs" in excess of USD107 billion,[12] also provided an opportunity to evaluate how cat bonds as an asset class would perform in a tightening credit market. Since the inception of the cat bond market, participants have believed the theoretical claim that cat bond returns are not correlated with other asset classes. Because cat bond values are principally linked to the occurrence of physical phenomena, it was claimed, fluctuations in value should bear little relation to changes in general financial markets. Until 2007, however, it was difficult to find hard evidence to validate this theory.[13]

The 2007 credit crisis provided a test. Credit markets were rocky through the second half of the year, at one point closing entirely. Once they reopened, spreads in general widened by more than 25 percent.[14] Cat bond spreads, conversely, continued to tighten, reflecting strong recent returns and low levels of insured losses.[15]

12 Craig, Susanne, David Reilly and Randall Smith. "More Zeroes for Investors." *Wall Street Journal,* January 18, 2008 Page C1.

13 Over the past 10 years events such as the World Trade Center terrorist attacks in 2001 and the Russian debt default in 1998 provided some opportunity for comparative analytics of cat bonds and other financial assets. However, neither was as compelling as the 2007 credit crisis.

14 As measured by the relative change in the Merrill Lynch BB (one to 10 year) Corporate Bond Index (Bloomberg symbol: H5A1), between May 31, 2007, and its peak on November 20, 2007.

15 For a more detailed view of cat bond performance in relation to the credit crisis of 2007, please turn to the "Bond Pricing Trends" subsection of this report.

Cat Bond Issuance Expenses Continue to Fall

The cat bond issuance process has become more standardized and compressed, particularly with respect to non-indemnity transactions. Predictably, the dramatic surge in issuance activity has prompted a corresponding surge in the number of service providers touting cat bond expertise. Though increased profiles and claims of expertise have occurred across practically all of the service providers involved in the cat bond issuance process, the growth in the number of investment banking service providers is perhaps the most remarkable.

At the end of 2007, between 20 and 25 firms claimed to have cat bond structuring and placement capabilities. Included in this estimate are traditional investment banks as well as the securities arms of reinsurers and reinsurance brokers, though the number of firms actively engaged in projects fluctuates. At the beginning of 2006, the number of active bankers was closer to 15, and nearly all of them had been involved since the market's inception. The field of firms actively competing for cat bond underwriting engagements thus has grown both noticeably and quickly.

The impact of an increasingly crowded competitive field, in conjunction with the reduction in resources needed to complete an engagement, is pushing investment banking fees lower. From 1997 through 2005, the market standard for investment banking fees remained at 1.5 percent of the bond principal placed. In 2007, however, investment banking fees declined abruptly. Absent a dramatic surge in cat bond issuance activity, it may be challenging for all the investment banks currently committed to the space to generate a sufficient return on their investment.

Competition among service providers is not only benefiting sponsors (and, indirectly, investors) in the form of decreased transaction expenses; it is also driving continued innovation. Rather than a race to the bottom, with service providers competing exclusively on fees, there is evidence of additional idea generation. As a result, this really may be a race to the top. Service providers naturally are incentivized to forestall the commoditization of their services by developing new transaction structures, investment ideas and engaging in other value-enhancing behaviors.

From sponsors' perspectives, innovation is evident in the continued stream of new transaction types. This includes actively managed CDO structures and the ability to bring capital online and offline quickly and efficently. Further, it enables increased trigger flexibility and customization. New transaction structures facilitate the addition of call features to notes with longer maturities and the inclusion of small amounts of unmodeled risk or risk modeled only with proprietary (rather than third party) models in cat bond transactions.

For investors, the range of investment opportunities continues to increase. Considerable work is ongoing with respect to the creation of additional referential and derivative transactions. The new transactions will attempt to provide additional investment opportunities, even in the absence of a strong flow of primary issuances. However, significant hurdles remain. As the amount of outstanding cat bonds increases there is also greater competition, efficiency and liquidity with respect to secondary trading, all of which are expected to continue to increase in the future.

5

Transaction Statistics Summary

Transaction Size

Cat bond transaction size continued to increase in 2007. The year's average transaction size of USD259 million, though, is slightly skewed by State Farm's USD1.1 billion Merna Ltd. Nonetheless, an overall increase in typical transaction size is occurring. From 1997 to 2005, no transaction exceeded USD500 million. In the past two years, however, there have been five such transactions, with two in 2006 and three in 2007. Travelers used its Longpoint Re cat bond to source USD500 million of capacity for a single tranche of notes. The transaction, with exposure to a single peril (Northeast U.S. hurricane), became the largest single peril individual issuance in the history of the cat bond market.

TABLE 1: NUMBER OF TRANSACTIONS BY SIZE

	< 50	≥ 50, < 100	≥ 100, < 200	≥ 200, < 300	≥300, < 400	≥400, < 500	≥ 500	Deal Size	
								Average	Median
1997	2	1	1	-	1	-	-	126.6	90.0
1998	3	3	1	-	-	1	-	105.8	63.1
1999	3	1	5	1	-	-	-	98.5	100.0
2000	1	2	4	2	-	-	-	126.6	136.5
2001	-	-	7	-	-	-	-	138.1	150.0
2002	1	1	2	2	1	-	-	174.2	175.0
2003	-	-	3	2	1	1	-	247.1	231.8
2004	-	-	3	2	1	-	-	190.5	185.2
2005	-	3	3	1	2	1	-	199.1	183.0
2006	-	3	8	5	2	-	2	234.7	175.0
2007	-	3	8	11	1	1	3	259.1	225.0
TOTAL	**10**	**17**	**45**	**26**	**9**	**4**	**5**	**188.3**	**150.0**

Deal sizes in USD millions
Totals may not reflect the numbers presented as a result of rounding.
- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.
Source: GC Securities

GC SECURITIES

Covered Perils

U.S. earthquake and hurricane continued to dominate both the peril and geography categories in the 2007 cat bond market. A dramatic increase in issuance across all perils, though, signals the true arrival of the cat bond market as a source for consistent access to capacity. New annual issuance records were set for U.S. earthquake, U.S. hurricane, European windstorm, Japanese earthquake and Japanese typhoon perils. As they constitute the world's chief catastrophe risks from an insured value perspective, these perils are longtime favorites of the cat bond market. Precedent from 2006 extended through 2007, with the continued issuance of other non-peak exposures, including Mediterranean and Central American earthquake, as well as additional issuances of Australian wind/earthquake and Mexican earthquake (first-time issued perils in 2006). Sponsors were able to include small amounts of unmodeled risks or risks modeled using only proprietary models, indicating the palpable demand for cat risks among a growing universe of investors. Under the difficult market conditions of 2006, the inclusion of unmodeled, or only internally modeled, risks likely would not have been feasible.

TABLE 2: RISK CAPITAL BY SPECIFIC PERIL

	U.S. Earthquake	U.S. Hurricane	Europe Windstorm	Japan Earthquake	Japan Typhoon	Other
1997	112.0	395.0	-	90.0	-	36.0
1998	145.0	721.1	-	-	80.0	45.0
1999	327.8	507.8	167.0	217.0	17.0	10.0
2000	486.5	506.5	482.5	217.0	17.0	129.0
2001	696.9	551.9	431.9	150.0	-	120.0
2002	799.5	476.5	334.0	383.6	-	-
2003	803.8	416.1	474.1	691.2	277.5	100.0
2004	803.3	660.8	220.3	310.8	-	-
2005	1,269.0	994.0	830.1	138.0	-	405.0
2006	2,228.7	2,294.9	1,166.0	824.1	400.3	507.5
2007	3,630.0	4,631.6	1,678.9	1,160.0	725.0	1,913.9
TOTAL	**11,302.4**	**12,156.1**	**5,784.8**	**4,181.6**	**1,516.8**	**3,266.4**

All figures in USD millions
Totals may not reflect the numbers presented as a result of rounding.

- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.
- "Other" perils include Europe hail, Monaco earthquake, Puerto Rico hurricane, Taiwan earthquake, third party casualty liability, Australian earthquake, Australian wind, Mexican earthquake and hurricane, U.S. tornado and hail, Canadian earthquake, U.K. Flood, Greek earthquake, Turkish earthquake, Cyprus earthquake, Israeli earthquake, Portuguese earthquake, Guatemalan earthquake, El Salvadoran earthquake and bonds for which the peril was not disclosed or, particularly in 2007, non-modeled.

Source: GC Securities

GC SECURITIES

Trigger Type

The use of indemnity triggers surged in 2007, offering additional evidence of the growing investor sophistication and increasing sponsor leverage. While the sheer size of indemnity trigger issuances (USD2.3 billion) seems to indicate a clear sponsor preference, the reality is more nuanced. State Farm's Merna transaction accounted for nearly half of the year's indemnity trigger issues (in terms of value). Without Merna, only USD1.2 billion in indemnity trigger issues would have closed, compared to USD1.8 billion for PCS Index triggers, the next most popular trigger type. Across the market, trigger selection would have been much more consistent, with the exception of modeled loss transactions, which have generally fallen out of favor in recent years.

TABLE 3: RISK CAPITAL / TRANSACTIONS BY TRIGGER TYPE

	Indemnity		Parametric		PCS (Index)		Modeled		Hybrid	
	Capital	#	Capital	#	Capital	#	Capital	#	Capital	#
1997	431.0	3	90.0	1	112.0	1	-	-	-	-
1998	846.1	8	-	-	-	-	-	-	-	-
1999	602.7	7	100.0	1	-	-	282.1	2	-	-
2000	507.0	4	303.0	2	150.0	1	179.0	2	-	-
2001	150.0	1	270.0	2	265.0	2	281.9	2	-	-
2002	355.0	2	631.5	3	200.0	1	33.0	1	-	-
2003	260.0	2	1,119.8	4	350.0	1	-	-	-	-
2004	227.5	1	267.8	2	547.5	2	100.0	1	-	-
2005	859.4	4	491.7	3	-	-	640.0	3	-	-
2006	172.5	2	1,260.0	7	1,422.0	6	157.2	1	1,681.7	4
2007	2,298.9	5	1,248.7	7	1,755.2	7	235.0	1	1,458.6	7
TOTAL	**6,710.1**	**39**	**5,782.5**	**32**	**4,801.7**	**21**	**1,908.2**	**13**	**3,140.3**	**11**

Deal sizes in USD millions

- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.
- Successor, Globecat and Redwood X are classified as hybrid trigger tranactions.

Source: GC Securities

GC SECURITIES

Number of Perils

For the second consecutive year, the amount of risk capital dedicated to single- versus multi-peril exposed transactions was nearly equal. Single-peril issuances predominantly reflect activity during the first two quarters, as sponsors sought protection from U.S. hurricane risk. Cover for the Northeast U.S., where there are significant exposures, topped the agenda. At the beginning of 2007, Northeast wind pricing was not as high, at least relative to Florida and other states with Gulf exposure. Of the total single-peril issuance, USD1.7 billion was associated with U.S. hurricane risk. U.S. earthquake exposure (nearly all California risk) was the second most frequently securitized peril on a standalone basis, accounting for USD958 million of issuance.

Multi-peril issuance, which generally reflects sponsors' desire to construct more broadly applicable coverage, and to get more value out of a fixed amount of issuance expense, was also up notably from 2006.

TABLE 4: RISK CAPITAL BY NUMBER OF PERILS

	Single Peril	Multiple Peril
1997	603.0	30.0
1998	656.1	190.0
1999	730.0	254.8
2000	656.5	482.5
2001	415.0	551.9
2002	961.5	258.0
2003	1,093.8	636.0
2004	662.0	480.8
2005	922.1	1,069.0
2006	2,334.5	2,358.9
2007	3,337.5	3,658.8
TOTAL	**12,371.9**	**9,970.7**

All figures in USD millions
Totals may not reflect the numbers presented as a result of rounding

- This table summarizes total risk capital by number of perils, by tranche.
- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.

Source: GC Securities

GC SECURITIES

Bond Tenor

In a marked reversal from 2006, the dramatic increase in the number of bonds with four- and five-year terms offered a clear indication of sponsors' views on market conditions. In 2007, eight bonds with a tenor greater than three years were issued, compared to only two in 2006. Sponsors were eager to lock in perceived attractive pricing over a longer period of time. Stretching the transaction term also improves efficiency of transaction costs, as one-time fixed issuance expenses are amortized (in an economic sense) over a longer transaction life.

While there was a noticeable increase in longer-term bonds, the typical bond tenor remained unchanged. A three-year tenor was, by far, the most frequent term and has been the most popular tenor since 2005. However, the distribution of bond tenor continued to broaden, further illustrating the versatility of the cat bond market as a solution for sponsors' immediate and longer-term capacity concerns.

TABLE 5: TRANSACTIONS BY BOND TENOR

	1 Year	2 Year	3 Year	4 Year	5 Year	10 Year
1997	2	1	1	-	-	1
1998	7	-	-	-	1	-
1999	5	-	3	-	2	-
2000	3	1	4	-	1	-
2001	2	1	3	1	-	-
2002	-	1	4	2	-	-
2003	-	1	3	1	2	-
2004	1	2	1	1	2	-
2005	1	2	7	-	1	-
2006	2	4	12	1	1	-
2007	4	5	12	3	5	-
TOTAL	**27**	**18**	**50**	**9**	**15**	**1**

- Pioneer is only counted in 2002 as a four-year deal, as subsequent takedowns in 2003 had the same maturity date.
- Due to different tenors among tranches, Arbor program was included as both a three- and four-year transaction in 2003 and a one- and two-year transaction in 2004; Atlantic & Western Re was included as both a one- and three-year transaction in 2005; Successor II Program ('07 takedowns) was included as both a one- and two-year transaction in 2007; Globecat Ltd. included as both a one- and five-year transaction in 2007.
- Successor Program is considered a two-year transaction in 2006.
- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.

Source: GC Securities

GC SECURITIES

Sponsor Type

Reinsurer-sponsored transactions outpaced insurer-sponsored transactions 16 to 10, as has most commonly been the case throughout cat bond market history. This return to the norm shows that 2006 was something of an aberration.

For the second consecutive year, and for only the second time since 2003, a corporate sponsor brought a cat bond to the market, albeit indirectly. Using Munich Re as a pass-through reinsurer, JR East sponsored Midori Ltd., a USD260 million transaction, which closed in October 2007. In another first for the cat bond market, Nephila Capital, a Bermuda-based asset manager focused on catastrophe risk, sponsored the USD265 million Gamut Re transaction, which uses CDO technology to fund Nephila's ability to provide catastrophe risk protection to cedents through reinsurance policies, ILWs and cat bonds. Though the cat bond market has digested CDO-like transactions in the past (e.g., Fremantle Ltd. and Bay Haven Ltd., as well as other "pure private" transactions), Gamut Re is the first publicly disclosed, actively managed CDO in which the reference pool of assets at the time of funding is not already defined. Nephila's underwriting decisions with respect to risks supported by the CDO collateral are governed only by general guidelines, leaving substantial discretion in the hands of Nephila's management team.

TABLE 6: RISK CAPITAL / TRANSACTIONS BY SPONSOR TYPE

	Insurer		Reinsurer		Corporate	
	Capital	#	Capital	#	Capital	#
1997	521.0	4	112.0	1	-	-
1998	575.0	4	271.1	4	-	-
1999	460.0	4	424.8	5	100.0	1
2000	469.0	4	670.0	5	-	-
2001	150.0	1	816.9	6	-	-
2002	195.0	2	849.5	4	175.0	1
2003	730.0	3	768.0	3	231.8	1
2004	600.0	3	542.8	3	-	-
2005	1,071.0	4	920.1	6	-	-
2006	2,575.3	12	1,908.2	6	210.0	2
2007	3,603.6	10	3,132.7	16	260.0	1
TOTAL	**10,949.9**	**51**	**10,416.0**	**59**	**976.8**	**6**

Capital in USD millions
Totals may not reflect the numbers presented as a result of rounding.

- Within any single year, takedowns from shelf offerings are consolidated and considered as a one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.

Source: GC Securities

GC SECURITIES

Sponsor Experience

The market experienced its second straight year of record first-time cat bond sponsors in 2007. Although the amount of risk capital placed is lower than that of repeat sponsors, it is only a nominal difference. Since the pool of potential first-time sponsors tends to shrink over time (insurer and reinsurer start-ups notwithstanding), this remarkable performance highlights the fact that cat bonds are now considered by many market participants to be a core capacity source.

TABLE 7: RISK CAPITAL / TRANSACTIONS BY SPONSOR TRANSACTION EXPERIENCE

	First-Time		Repeat	
	Capital	#	Capital	#
1997	633.0	5	-	-
1998	297.0	4	549.1	4
1999	629.1	6	355.7	4
2000	785.5	6	353.5	3
2001	-	-	966.9	7
2002	508.0	4	711.5	3
2003	801.8	3	928.0	4
2004	372.5	2	770.3	4
2005	1,373.4	6	617.7	4
2006	1,320.3	7	3,373.2	13
2007	3,491.9	11	3,504.5	16
TOTAL	**10,212.4**	**54**	**12,130.3**	**62**

Capital in USD millions
Totals may not reflect the numbers presented as a result of rounding.

- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.

Source: GC Securities

GC SECURITIES

Bond Rating

The cat bond market continues to be dominated by S&P BB rated (or equivalent) issues. Despite this, the range of transaction ratings continued to expand both upward and downward during 2007, as we predicted last year. Fourteen S&P B rated tranches were issued, up from 13 B rated tranches in 2006. These tranches represented more than USD1.2 billion of risk capital, up nearly 97 percent from the 2006 record of USD623 million. At the other end of the risk spectrum, 2007 saw new annual records set with six tranches and more than USD1.3 billion of risk capital issued with ratings of A or above, including two tranches that received AAA ratings.

TABLE 8: RISK CAPITAL / TRANSACTIONS BY RATING

	B		BB		BBB		A		AA		AAA	
	Capital	#	Capital	#	Capital	#	Capital	#	Capital	#	Capital	#
1997	-	-	468.0	4	37.0	2	-	-	-	-	82.0	1
1998	21.0	1	657.6	5	-	-	-	-	-	-	22.5	3
1999	20.0	1	883.4	10	50.0	1	-	-	-	-	1.4	1
2000	100.0	1	853.0	8	141.0	3	-	-	-	-	-	-
2001	4.9	1	905.4	12	-	-	50.0	1	-	-	-	-
2002	-	-	722.3	11	261.3	2	-	-	-	-	-	-
2003	163.9	1	624.9	12	814.5	6	26.5	1	-	-	-	-
2004	185.8	2	889.5	8	67.5	1	-	-	-	-	-	-
2005	573.0	6	1,194.7	8	-	-	135.0	1	-	-	-	-
2006	623.0	13	3,117.3	27	84.8	2	-	-	133.5	1	-	-
2007	1,225.2	14	3,737.1	28	235.8	4	309.5	3	647.6	1	316.0	2
TOTAL	**2,916.7**	**40**	**14,053.1**	**133**	**1,691.8**	**21**	**521.0**	**6**	**781.1**	**2**	**421.9**	**7**

Capital in USD millions
Totals may not reflect the numbers presented as a result of rounding.

- Accounts separately for each rated tranche of all issues; excludes "unrated" bonds / tranches.
- Within any single year, takedowns from shelf offerings are consolidated and considered as one transaction.
- Takedowns from individual shelf offerings occurring in different years are considered to be separate transactions in the year in which the takedowns are completed.
- Uses S&P ratings if available; otherwise, uses Fitch or Moody's rating converted to S&P as applicable.
- Each category of rating also includes bonds modified with either "-" or "+" (e.g. "B" includes "B-", "B", and "B+").

Source: GC Securities

GC SECURITIES

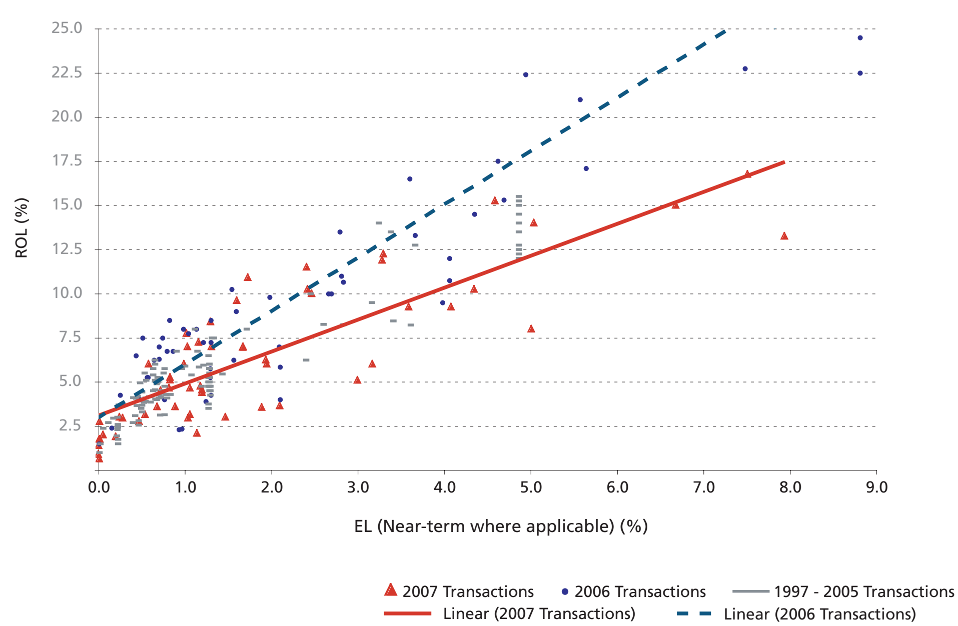
Bond Pricing Trends

The increased ease with which capital could be accessed by sponsors and deployed by investors to the greatest benefit of each party was evident in the 2007 cat bond market. Following two years of high catastrophe losses – and in the context of catastrophe model overhauls across the industry – catastrophe reinsurance pricing and cat bond yields increased substantially. This led to shortages of risk transfer capacity throughout 2006.

In response to the 2006 capacity shortages, hedge funds, banks and other capital providers quickly took advantage of a perceived opportunity for outsized returns, enabled by investment structures such as sidecars, ILWs and cat bonds (in addition to start-up companies and secondary debt and equity offerings). 2006 proved to be relatively free of catastrophe losses, with no named hurricanes making landfall in the United States. Heading into 2007, significant questions remained about the longer-term impact of new capacity sources on reinsurance pricing and availability. As we mentioned in last year's report, it seemed reasonable to expect a reduction in the duration of the insurance pricing cycle (meaning that one could expect prices to more quickly revert to a normal level than had historically been the case), especially if 2007 turned out to be another light year in terms of catastrophe losses.

Figure 6, a comparison of cat bond risk spreads[16] and annual expected loss estimates, provides evidence of how responsive the cat bond market in particular proved to be. Though exact comparisons are difficult due to the relative paucity of data and idiosyncratic features of each issue, it is clear that cat bond yields tightened substantially year-over-year. Pricing swings, predictably, were muted at the far low end of the expected loss spectrum. At this risk level, capacity providers tend to be motivated by minimum return

FIGURE 6: ROL vs. EL
2007 vs. 2006 AND 1997 TO 2005



- Excludes transactions that have a ROL greater than 25% or EL greater than 9%.
- Multiple takedowns of tranches with constant ELs that priced with constant ROLs are represented by a single data point.
Source: GC Securities

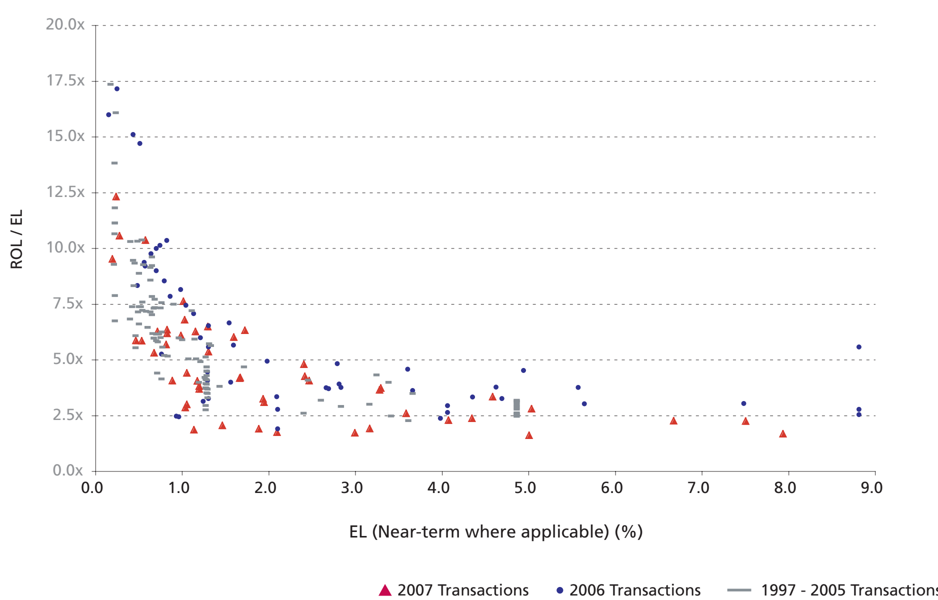
GC SECURITIES

16 The terms "risk spread," "coupon payment" and "ROL" refer to the pricing or risk premium that investors charge to take on the specific risk of the bond in excess of a risk-free rate, typically the three-month London Interbank Offered Rate (LIBOR). These risk premium figures do not reflect the transaction costs associated with issuing the bonds.

requirements, almost without regard for market conditions, while sponsors in difficult markets generally cannot afford to pursue high-priced protection at extremely infrequent return periods. Moving into the more typical cat bond risk transfer range however (with annual expected loss estimates ranging from 1 percent per year to 2.5 percent per year), year-over-year spreads tightened between 20 percent and 30 percent. This tightening is even more noteworthy considering the year-over-year issuance increase of more than 49 percent.

On a risk-adjusted basis, the market's declining risk premium is also evident. With only a few isolated exceptions (again, driven principally by idiosyncratic differences among bonds rather than market dynamics), cat bonds in 2007 traded at a compressed multiple of expected loss relative to those issued during 2006.

FIGURE 7: ROL / EL vs. EL
2007 vs. 2006 AND 1997 TO 2005



- Excludes transactions that have an EL greater than 9% or EL greater than 20x.
- Multiple takedowns of tranches with constant ELs that priced with constant ROLs are represented by a single data point.

Source: GC Securities

GC SECURITIES

A salient change to the cat bond market dynamic has been the continued erosion of any meaningful distinction between the different types of capacity providers. The eventual existence of a seamless risk transfer market has been discussed for years in academic circles, with capital being used for its highest and best use, regardless of form. Empirical pricing evidence in both the traditional reinsurance market and the cat bond market during 2007 offers some validation of this notion.

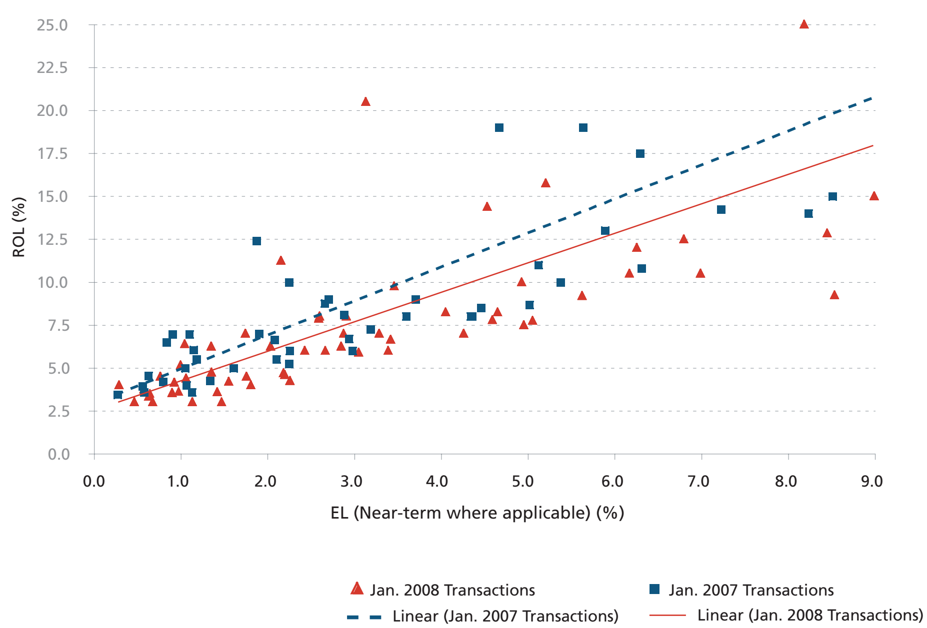
To the extent that barriers between traditional reinsurance and capital markets are in fact eroding, one would expect pricing movements between them to be interrelated, as participants who feel they are able to get a better deal in one market relative to the other will act accordingly. But, the market has not reached that point yet. There remain significant and useful differences between the protection typically provided by cat bonds and that provided by reinsurance contracts.

The three key differences between traditional and capital market solutions are:

- Cat bonds tend to have multi-year terms, while reinsurance contracts are usually for only one year
- As they are collateralized, cat bonds have less counterparty credit risk than many reinsurance transactions
- Cat bonds usually do not include a reinstatement provision, unlike most reinsurance contracts

This last difference subsidizes the initial premium as it typically requires the cedent to immediately pay an additional year's premium in exchange for reinstated coverage in the immediate aftermath of a covered event. In effect, if reinsurers were not able to count on an additional premium inflow in the event of a loss, they would be expected to increase the amount of premium required up front.

FIGURE 8: JANUARY 2008 vs. JANUARY 2007 REGIONAL WRITERS (U.S. PERILS ONLY)



- Excludes transactions that have an EL greater than 9% or EL greater than 20x.
- Sample set includes 64 and 66 layers for Guy Carpenter U.S. regional reinsurance clients in 2007 and 2008 respectively.

Sources: GC Securities, Guy Carpenter & Company LLC

GC SECURITIES

Because of these three factors – and others, including the availability of a secondary market for cat bonds – one would not expect rational market dynamics to eradicate the spread between cat bond pricing and reinsurance pricing. But, the factors alone are not sufficient to immunize the markets from one another. At a minimum, one would expect pricing in both markets to move in the same direction and perhaps in roughly the same magnitudes. Pricing changes for January 1, 2008, renewals relative to January 1, 2007, for a sample of Guy Carpenter U.S. Regional accounts supports this expectation.

Year-over-year renewal pricing for Guy Carpenter-placed U.S. Regional accounts declined by between 5 percent and 15 percent, depending on the expected loss. This is a movement of direction and size that is consistent with cat bond market price changes, if a bit more muted.

6 Cat Bonds in the Context of the 2007 Credit Crisis

Cat bond performance relative to similarly rated corporate debt in 2007 demonstrates the attractiveness of this asset class for portfolio diversification. Theoretically, cat bond returns should be almost entirely insulated from the vagaries of the broader financial markets, as defaults are linked almost exclusively to the occurrence of defined physical events.[17] Thus, proponents have argued that cat bonds have a place in a well-balanced investment portfolio, if only as a diversification tool. Furthermore, relative to similarly rated corporate securities, cat bonds have historically traded at a spread of 100 basis points (bps) to 200 bps, due in part to their potentially binary nature, a novelty premium, relatively lower liquidity and perceived mechanical complexity.

The adoption of cat bonds has grown rapidly, as measured by the number and value of issuances consumed, since they first came to market in 1997. But, in terms of broad investor interest, the growth of this market has been slower. Investors were willing to listen; in fact, they usually agreed with the underlying logic of cat bonds' diversification benefit. But, many still considered the discussion too theoretical to warrant investment. Limited issuance activity from 1997 to 2005 hardly justified the time required to understand cat bond mechanics, further constraining the growth of this market.

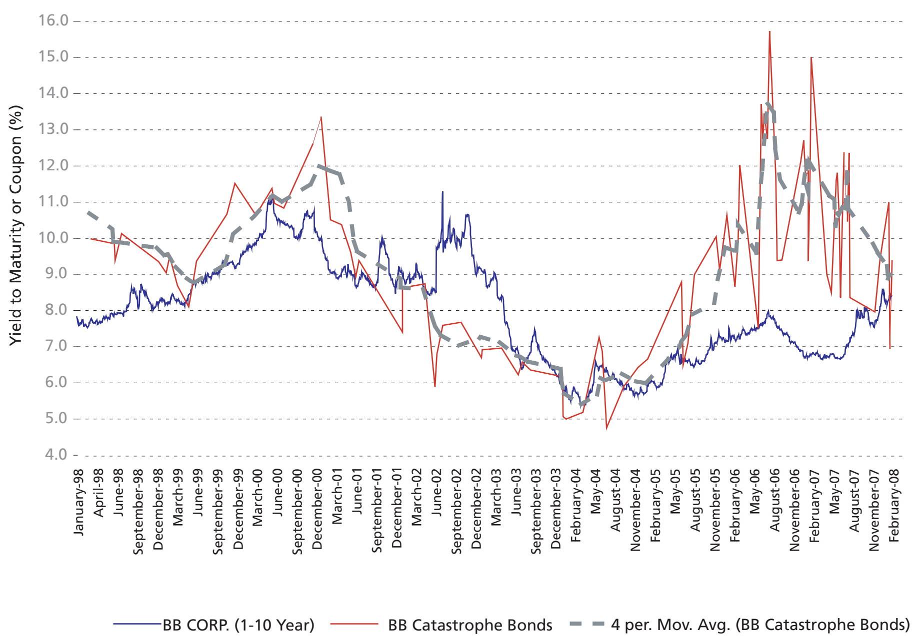
The subprime "meltdown" initially made headlines during the 2007 summer, and its reverberations were felt throughout financial markets for the balance of the year. Though reported write-downs of mortgage-related assets total more than USD107 billion[18] (as of this writing), the credit crisis has offered a practical example of the benefits of cat bonds as a diversifying asset class. Due to the small number of transactions, each of which is unique, cat bond data is "noisier" than BB rated corporate debt. To help reduce this noise and enable a comparison of the two tracks, we have added a moving average to the cat bond data, which helps to smooth cat bond activity. What results is a fairly consistent downward slope over the course of 2007. As the influx of capital into the industry competed for access to risk, risk transfer prices decreased from one year to the next. On the other hand, the corporate debt track, while remaining fairly stable for the first half of the year, shows a clear upward tendency over the second half of 2007, driven by widespread concerns over the integrity of credit-related assets in general.

17 A frequent counterargument is a hypothetical Category 5 hurricane hitting lower Manhattan directly, likely causing tremendous insured damage as well as potentially crippling the financial system. Though this extreme scenario could happen, its mere existence does not invalidate the theory that, from a fundamental risk exposure perspective, cat bond returns and those of financial assets should be unrelated practically all of the time.

18 Craig, Susanne, David Reilly and Randall Smith. "More Zeroes for Investors." *Wall Street Journal,* January 18, 2008, page C1.

GC SECURITIES

FIGURE 9: CATASTROPHE BONDS vs. COMPARABLE CORPORATE BONDS 1997 TO 2007

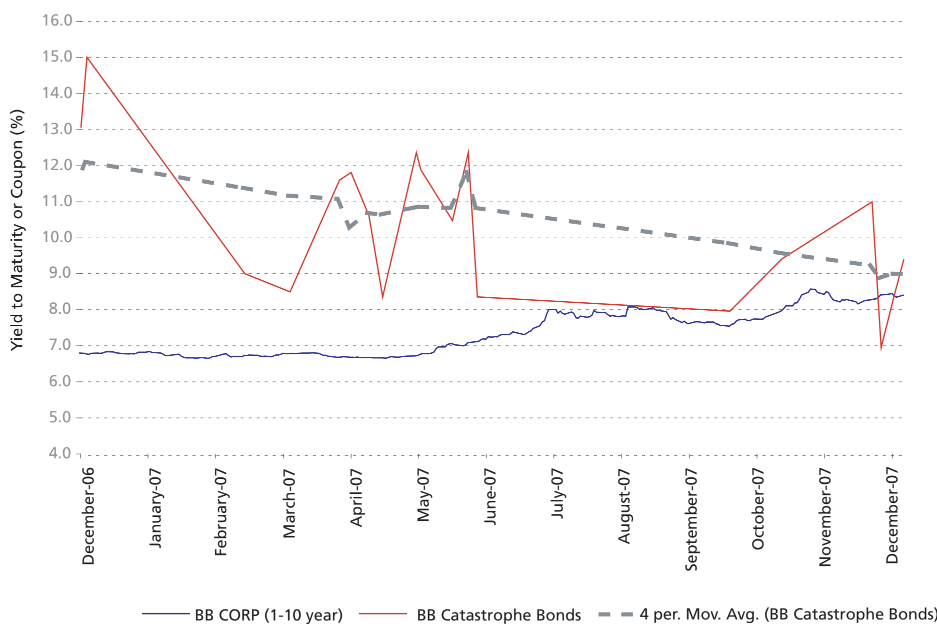


- Cat bond prices are for individual issues (or in the case of multiples issues on a single day, a weighted average ROL based on risk capital) that have distinct characteristics affecting the bond's pricing. As a result, BB rated cat bond pricing appears more volatile when compared to the basket of corporate bonds reflected in the BB corporate index. To ameliorate some of the cat bond pricing volatility (which to a great extent is driven by idiosyncratic features of different issues) we have also taken a four observation moving average, in order to reduce noise and make it easier to recognize underlying pricing movement.
- In this year's report, Figure 9 includes only BB- rated catastrophe bonds and the corresponding corporate index. Of the 207 rated catastrophe bond tranches issued since 1997, 129 have been rated between BB-, BB or BB+. In the last three years, only five tranches have been rated BBB. Accordingly, we felt that data concerning BB securities was sufficiently representative of market dynamics and therefore keeping consistent with last year's report, we elected not to include BBB data in this exhibit.
- With respect to single day, multiple tranche issues, a weighted average ROL (based on risk capital) for the entire issuance was calculated.
- The "Gemini Re" transaction (issued 1/1/99) has been excluded from this exhibit because individual issuance characteristics made the pricing of this issue a non-meaningful data point.
- The "BB CORP. (1-10 Year)" data is taken from the Merrill Lynch BB Index (Corporates) Bloomberg Symbol: H5A1.

Sources: GC Securities, Bloomberg Financial Services, Inc.

The downward tendency of bond pricing remains evident when the focus is on 2007 specifically, and the widening of credit spreads is more easily observable. Through the end of May, as measured by this index, BB rated credit spreads generally remained flat, up no more than 10 bps. Through the rest of the year, by contrast, spreads increased by more than 180 bps at one point, ending the year up 150 bps. In relative terms, corporate bond yields widened 15 times more in the second half of the year as compared to the first. All the while, cat bond spreads, on average, continued downward.

FIGURE 10: CATASTROPHE BONDS vs. COMPARABLE CORPORATE BONDS 2007 ONLY



- Cat bond prices are for individual issues (or in the case of multiples issues on a single day, a weighted average ROL based on risk capital) that have distinct characteristics affecting the bond's pricing. As a result, BB rated cat bond pricing appears more volatile when compared to the basket of corporate bonds reflected in the BB corporate index. To ameliorate some of the cat bond pricing volatility (which to a great extent is driven by idiosyncratic features of different issues) we have also taken a four observation moving average, in order to more reduce noise and make it easier to recognize underlying pricing movement.

- In this year's report, Figure 10 includes only BB- rated catastrophe bonds and the corresponding corporate index. Of the 207 rated catastrophe bond tranches issued since 1997, 129 have been rated between BB-, BB or BB+. In the last three years, only five tranches have been rated BBB. Accordingly, we felt that data concerning BB securities was sufficiently representative of market dynamics and therefore, keeping consistent with last year's report, we elected not to include BBB data in this exhibit.

- With respect to single day, multiple tranche issues, a weighted average ROL (based on risk capital) for the entire issuance was calculated.

- The "Gemini Re" transaction (issued 1/1/99) has been excluded from this exhibit because individual issuance characteristics made the pricing of this issue a non-meaningful data point.

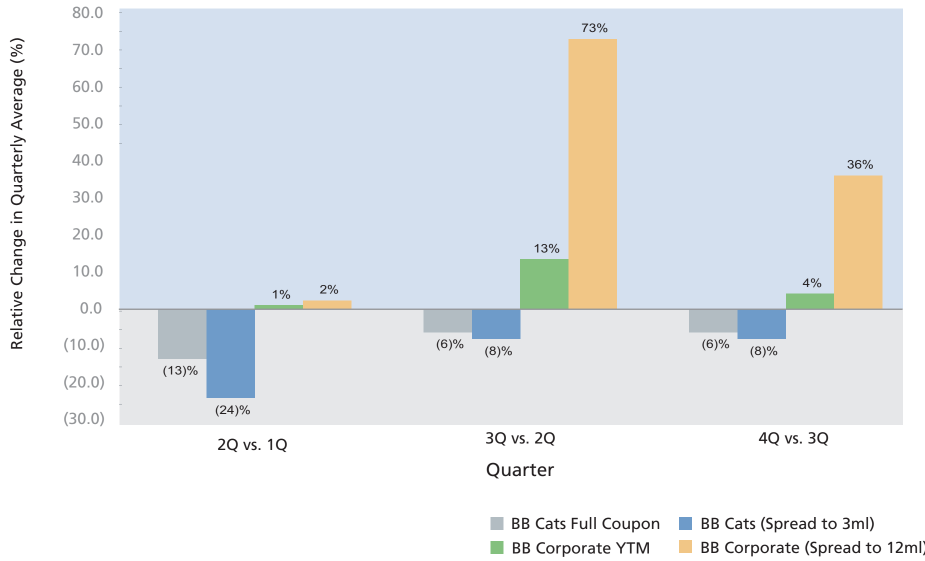
- The "BB CORP (1-10 Year)" data is taken from the Merrill Lynch BB Index (Corporates) Bloomberg Symbol: H5A1.

Sources: GC Securities, Bloomberg Financial Services, Inc

As shown in Figure 10, the insulation of the cat bond asset class from other markets is most evident when changes in the two indices are compared on a relative basis over the course of the year. Though cat bond data paucity issues are a concern with this approach as well, the results are consistent with the economic facts. Figure 11 illustrates an analysis of relative sequential changes in average quarterly values of each index, over the course of 2007.[19] To identify the influence of London Intebank Offered Rate (LIBOR) (which was generally declining over the second half of 2007), we have analyzed changes in yields both inclusive of LIBOR, as well as the changes solely on risk spreads alone. Through 2007, average quarterly BB rated credit spreads increased in each quarter. The largest relative increase, 73 percent, occurred between the second and third quarters, driven by concerns over residential home prices and the integrity of all assets exposed to general economic and financial conditions. In contrast, average quarterly cat bond spreads declined quarter-over-quarter throughout the year.

19 There were no BB, BB- or B rated catastrophe bond issuances during the third quarter of 2007. To facilitate the analysis, the relative change in average cat bond pricing between the second and fourth quarters of the year (13 percent and 18 percent for cat bonds adjusted for 3-month LIBOR and cat bond risk spreads only) has been distributed evenly over the third and fourth quarters.

FIGURE 11: RELATIVE CHANGES OF CAT VS. CORPORATE BOND YIELDS AND SPREADS



- In the third quarter of 2007, there were no BB rated catastrophe bonds issued. To facilitate the analysis, relative change in average cat bond pricing between the second quarter and the fourth quarter of the year (a decline of 13 percent over that period) has been evenly distributed across the third and fourth quarters.

- The "BB CORP (1-10 Year)" data is taken from the Merrill Lynch BB Index (Corporates) Bloomberg Symbol: H5A1.

Sources: GC Securities, Bloomberg Financial Services, Inc.

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The issues that struck the credit market in 2007 do hold a small silver lining, at least for cat bond market participants. The behavior of cat bond market spreads throughout the year provides a concrete example of non-correlation.

Investors have become resensitized to the dangers of holding fundamentally correlated assets, and they are starting to clamor for access to catastrophe risk. This increased interest bodes well for sponsors, who should continue to benefit from an increasing pool of risk transfer capacity, as they did during 2007. The result, ultimately, would be a more efficient risk transfer and risk management system. The longevity of these benefits will depend on the level of commitment this new capacity makes to catastrophe risk as an asset class. While new capacity is always welcome, it will be paramount that deal activity remain sufficiently high to warrant the resource investment by new investors to understand the nature of catastrophe risk. It is the investment in knowledge building that is the chief determinant of whether an investor is a “core” provider or simply a provider of so called “hot money,” which, in the aftermath of the next major event, will likely disappear.

7

Conclusion

A decade of effort has come to fruition. The cat bond market integrated into the financial mainstream in 2007. Record issuances and limits outstanding last year, buttressed by similar records in 2005 and 2006, signaled that cat bonds have become viable risk transfer tools – and investment instruments. The result is a general increase in liquidity that is likely to fuel the continued growth of the cat bond market.

While the volumes associated with the cat bond market point to proliferation, the increasing sophistication of the issuances validates the story. The USD1.1 billion Merna transaction may be nothing more than a 2007 outlier, or it could indicate the direction of the market as a whole, toward larger transactions. Also, the use of shelf offerings to lower the cost of capital and facilitate continued access to capital markets shows a growing commitment not only to the use of capital markets but to the variety of tools available.

The adoption of cat bonds has not been limited to sponsors; investors have shown increased interest as well. During 2006, many cat bond issuances were undersubscribed or not completed at all. Throughout 2007, however, the trend changed substantially. The cat bond records set in 2007's soft reinsurance market conditions demonstrate the continued strength of this market. The growth in 2005 and 2006 may have been supported by the large catastrophe activity in 2004 (in which Hurricanes Charley, Ivan, Frances and Jeanne struck Florida) and 2005 (with Hurricanes Katrina, Rita and Wilma), but the fact that the cat bond market continued to grow through 2007, especially in the face of the subprime mortgage crisis, shows that cat bonds can thrive even when market conditions are not favorable.

Room for growth still remains. As (re)insurers continue to become comfortable with the use of capital markets, and more investors become familiar with catastrophe bonds as an asset class, larger issuances will be possible. In addition, as transaction costs continue to decline, smaller transactions, sponsored by regionally focused insurers will also become more feasible. Even with the considerable progress made over the past decade, work remains. But, the nature of the effort has changed. Cat bonds have moved from the exotic to the expected, from niche to mainstream.

Appendix I:

Summary of Cat Bond Outstanding

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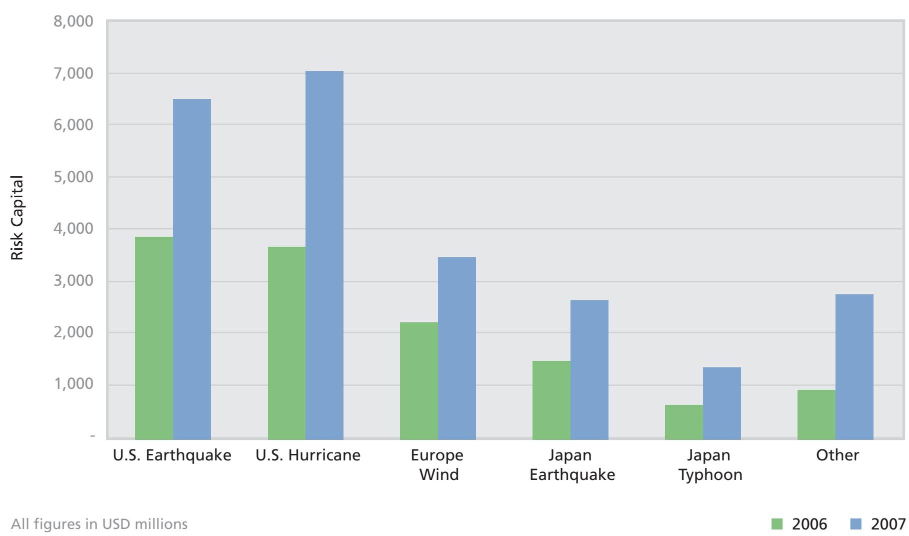
FIGURE 1: OUTSTANDING RISK CAPITAL BY PERIL



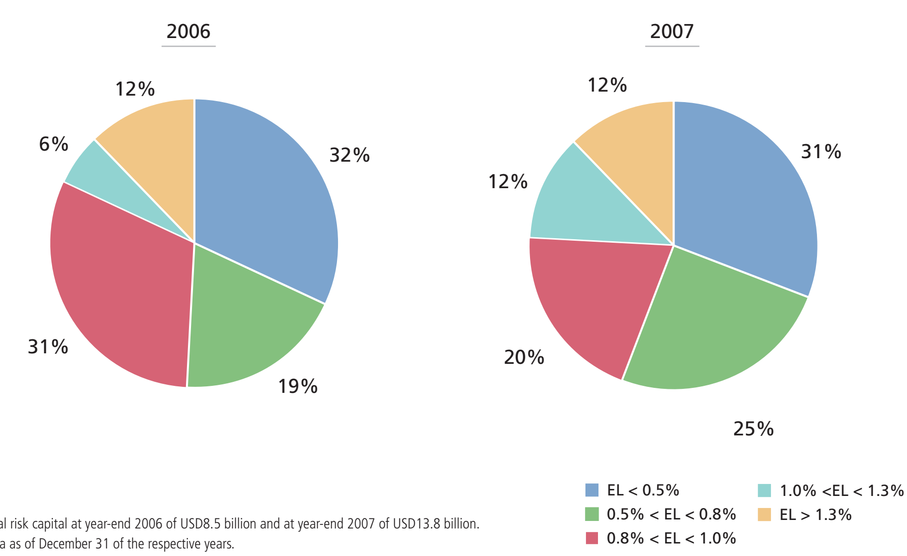
All figures in USD millions

- Total risk capital at year-end 2006 of USD8.5 billion and at year-end 2007 of USD13.8 billion.
- Data as of December 31 of the respective years.
- The total principal amount of bonds covering two or more perils (in which the total principal is exposed) has been included in all the peril categories they cover; therefore, the total figures do not reflect the actual volume of bonds issued.

Source: GC Securities

GC SECURITIES

FIGURE 2: OUTSTANDING RISK CAPITAL BY EXPECTED LOSS (EL)



- Total risk capital at year-end 2006 of USD8.5 billion and at year-end 2007 of USD13.8 billion.
- Data as of December 31 of the respective years.

Source: GC Securities

Appendix II:

Summary of Cat Bond Transactions

YEAR OF ISSUE	SPECIAL PURPOSE VEHICLE	SPONSOR	RISK AMOUNT	TRANCHES	RATING	PERIL	RISK LOCATION
1997	Winterthur	Winterthur	6.0	Notes		Hail	Switzerland
1997	SLF Re I	Reliance National	30.0			Multiple	
1997	Residential Re I - 1997	USAA	82.0	Class A-1 Notes	AAA (SP)	Hurricane	East / Gulf Coast
–	–	–	313.0	Class A-2 Notes	BB (SP)	–	–
1997	SR Earthquake Fund Ltd.	Swiss Re	25.0	Class A-1 Notes	BBB- (F)	Earthquake	California
–	–	–	12.0	Class A-2 Notes	BBB- (F)	–	–
–	–	–	60.0	Class B Notes	BB (F)	–	–
–	–	–	15.0	Class C Notes	BB- (F)	–	–
1997	Parametric Re	Tokyo Marine & Fire *	80.0	Notes	BB (F)	Earthquake	Japan
–	–	–	10.0	Units		–	–
1998	SLF Re II	Reliance National	10.0			Multiple	U.S.
1998	SLF Re III	Reliance National	35.0			Multiple	U.S.
1998	Trinity Re I, Ltd.	Centre Solutions (Zurich Re)	11.0	Class A-1 Notes	AAA (F)	Hurricane	Florida
–	–	–	61.0	Class A-2 Notes	BB (F)	–	–
1998	Residential Re II - 1998	USAA	450.0	Notes	BB (F)	Hurricane	East / Gulf Coast
1998	Pacific Re	Yasuda Fire & Marine *	80.0	Notes	BB- (F)	Typhoon	Japan
1998	Mosaic Re I	F&G Re (St. Paul)	9.0	Certificates	AAA (F)	Multiple	U.S.
–	–	–	15.0	Class A Notes	BB (F)	–	–
–	–	–	21.0	Class B Notes	B (F)	–	–
1998	XL Mid Ocean Swap	Mid Ocean & X.L. Global Re	50.0	Tranche A		Multiple	U.S.
–	–	–	50.0	Tranche B		–	–
1998	Trinity Re II, Ltd.	Centre Solutions (Zurich Re)	2.5	Class A-1 Notes	AAA (F)	Hurricane	Florida
–	–	–	51.6	Class A-2 Notes	BB (F)	–	–
1999	Gemini Re, Ltd.	Allianz Risk Transfer	150.0	Notes	BB (F)	Windstorm	Germany
1999	SLF IV	Reliance National	10.0	–	–	Multiple	–
1999	Mosaic Re II	F&G Re (St. Paul)	1.4	Certificates	AAA (F)	Multiple	U.S.
–	–	–	24.3	Class A Notes	BB (F)	–	–
–	–	–	20.0	Class B Notes	B (F)	–	–
1999	Halyard Re B.V.	Sorema	17.0	Notes	BB- (F)	Multiple	Euro / Japan
1999	Domestic, Inc.	Kemper	80.0	Notes	BB+ (SP)	Earthquake	New Madrid (U.S.)
–	–	–	20.0	Shares		–	–
1999	Concentric, Ltd.	Oriental Land Co., Ltd.	100.0	Notes	BB+ (SP)	Earthquake	Japan
1999	Residential Re III - 1999	USAA	200.0	Notes	BB (SP)	Hurricane	East / Gulf Coast
1999	Juno Re	Gerling Global Re	80.0	Notes	BB (SP)	Hurricane	East / Gulf Coast
1999	Namazu Re, Ltd.	Gerling Global Re	100.0	Notes	BB (SP)	Earthquake	Japan
1999	Gold Eagle Capital Ltd.	American Re	50.0	Class A Notes	BBB- (F)	Multiple	U.S.
–	–	–	126.6	Class B Notes	BB (F)	–	–
–	–	–	5.5	Class B Shares	BB+ (F)	–	–
2000	Atlas Reinsurance p.l.c.	SCOR	70.0	Class A Notes	BBB+ (SP)	Multiple	U.S. / Euro / Japan
–	–	–	30.0	Class B Notes	BBB- (SP)	–	–
–	–	–	100.0	Class C Notes	B (SP)	–	–

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YEAR OF ISSUE	SPECIAL PURPOSE VEHICLE	SPONSOR	RISK AMOUNT	TRANCHES	RATING	PERIL	RISK LOCATION
2000	Seismic Limited	Lehman Re	145.5	Notes	BB+ (SP)	Earthquake	California
–	–	–	4.5	Shares		–	–
2000	Halyard Re - 2000	Sorema	17.0	Notes		Multiple	Euro / Japan
2000	Alpha Wind 2000	Arrow Re/State Farm	37.5	Shares	BB (SP)	Hurricane	Florida
–	–	–	52.5	Notes	BB+ (SP)	–	–
2000	Residential Re IV - 2000	USAA	200.0	Notes	BB+ (SP)	Hurricane	East / Gulf Coast
2000	NeHI	Vesta Insurance	41.5	Notes	BB (F)	Windstorm	Northeast / Hawaii
–	–	–	8.5	Shares		–	–
2000	Mediterranean Re	AGF	41.0	Class A Notes	BBB+ (SP)	Multiple	Euro
–	–	–	88.0	Class B Notes	BB+ (SP)	–	–
2000	Prime Capital I Hurricane Ltd.	Munich Re	159.0	Notes	BB+ (SP)	Hurricane	NY / Miami
–	–	–	6.0	Shares		–	–
–	–	–	1.5	Units		–	–
2000	Prime Capital II Calquake & EuroWind Ltd.	Munich Re	129.0	Notes	BB (SP)	Multiple	California / Euro
–	–	–	6.0	Class B Shares		–	–
–	–	–	1.5	Units		–	–
2001	Western Capital	Swiss Re	97.0	Notes	BB+ (SP)	Earthquake	California
–	–	–	3.0	Shares		–	–
2001	Gold Eagle Capital 2001 Ltd.	American Re	116.4	Notes	BB+ (SP)	Multiple	U.S.
–	–	–	3.6	Class B Shares		–	–
2001	SR Wind Ltd.	Swiss Re	58.2	Class A-1 Notes	BB+ (SP)	Multiple	U.S. / Euro / P.R.
–	–	–	58.2	Class A-2 Notes	BB+ (SP)	–	–
–	–	–	1.8	Class B-1 Shares	BB (SP)	–	–
–	–	–	1.8	Class B-2 Shares	BB (SP)	–	–
2001	Trinom Ltd.	Zurich Re	60.0	Class A-1 Notes	BB (SP)	Multiple	U.S. / Euro
–	–	–	97.0	Class A-2 Notes	BB+ (SP)	–	–
–	–	–	4.9	Shares	B+	–	–
2001	Residential Re V - 2001	USAA	150.0	Notes	BB+ (SP)	Hurricane	East / Gulf Coast
2001	Redwood Capital I	Lehman Re	160.0	Notes	BB+ (SP)	Earthquake	California
–	–	–	5.0	Pref Shares	BB+ (SP)	–	–
2001	Atlas Reinsurance II p.l.c.	SCOR	50.0	Class A Notes	A- (SP)	Multiple	U.S. / Euro / Japan
–	–	–	100.0	Class B Notes	BB+ (SP)	–	–
2002	Redwood Capital II, Ltd.	Swiss Re	194.0	Notes	BBB- (SP)	Earthquake	California
–	–	–	6.0	Preference		–	–
2002	K3	Hannover Re	230.0			Multiple	U.S. / Euro / Japan
2002	St. Agatha Re Ltd.	Syndicate 33 (Lloyd's)	33.0	Notes	BB+ (SP)	Earthquake	Cal. & New Madrid
2002	Fujiyama Ltd.	Nissay Dowa General Ins Co *	67.9	Notes	BB+ (SP)	Earthquake	Japan
–	–	–	2.1	Pref Shares	BB (SP)	–	–
2002	Residential Re VI - 2002	USAA	125.0	Notes	BB+ (SP)	Hurricane	E / Glf Cst / Hawaii
2002	Pioneer 2002 Ltd.	Swiss Re	93.5	Class A Notes	BB+ (SP)	Hurricane	North Atlantic
–	–	–	76.0	Class B Notes	BB+ (SP)	Windstorm	Europe
–	–	–	66.2	Class C Notes	BB+ (SP)	Earthquake	California
–	–	–	67.3	Class D Notes	BBB- (SP)	Earthquake	Central U.S.
–	–	–	55.6	Class E Notes	BB+ (SP)	Earthquake	Japan
–	–	–	28.0	Class F Notes	BB+ (SP)	Multiple	U.S. / Euro / Japan
2002	Studio Re Ltd.	Vivendi Universal	150.0	Notes	BB+ (SP)	Earthquake	Southern Cal.
–	–	–	25.0	Pref Shares	BB (SP)	–	–
2003	Pioneer 2002 Ltd. ('03 tkdwns)	Swiss Re	16.3	Class A Notes	BB+ (SP)	Hurricane	North Atlantic
–	–	–	20.3	Class B Notes	BB+ (SP)	Windstorm	Europe
–	–	–	13.8	Class C Notes	BB+ (SP)	Earthquake	California
–	–	–	59.1	Class D Notes	BBB- (SP)	Earthquake	Central U.S.
–	–	–	8.0	Class E Notes	BB+ (SP)	Earthquake	Japan
–	–	–	8.1	Class F Notes	BB+ (SP)	Multiple	U.S. / Euro / Japan
2003	Residential Re 2003	USAA	160.0	Notes	BB+ (SP)	Multiple	U.S.

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YEAR OF ISSUE	SPECIAL PURPOSE VEHICLE	SPONSOR	RISK AMOUNT	TRANCHES	RATING	PERIL	RISK LOCATION
2003	Phoenix Quake Wind Ltd.	Zenkyoren *	192.5	Notes	BBB+ (SP)	Multiple	Japan
–	Phoenix Quake Ltd.	–	192.5	Notes	BBB+ (SP)	Earthquake	Japan
–	Phoenix Quake Wind II Ltd.	–	85.0	Notes	BBB- (SP)	Multiple	Japan
2003	Palm Capital Ltd.	Swiss Re	41.4	Notes	BB+ (SP)	Hurricane	North Atlantic
–	Oak Capital Ltd.	–	23.6	Notes	BB+ (SP)	Windstorm	Europe
–	Sequoia Capital Ltd.	–	22.5	Notes	BB+ (SP)	Earthquake	California
–	Sakura Ltd.	–	14.7	Notes	BB+ (SP)	Earthquake	Japan
–	Arbor I Ltd.	–	163.9	Notes	B (SP)	Multiple	U.S. / Euro / Japan
–	Arbor II Ltd.	–	26.5	Notes	A+ (SP)	Multiple	U.S. / Euro / Japan
2003	Formosa Re	Central Re (TREIP)	100.0	Notes		Earthquake	Taiwan
2003	Pylon Ltd.	Electricite de France	85.4	Series A Notes	BBB+ (SP)	Windstorm	France
–	–	–	146.4	Series B Notes	BB+ (SP)	–	–
2003	Redwood Capital III	Swiss Re	150.0	Notes	BB+ (SP)	Earthquake	California
	Redwood Capital IV	–	200.0	Notes	BBB- (SP)	–	–
2004	Oak Capital Ltd. ('04 tkdwns)	Swiss Re	34.5	Notes	BB+ (SP)	Windstorm	Europe
	Sequoia Capital Ltd. ('04 tkdwns)	–	22.5	Notes	BB+ (SP)	Earthquake	California
	Arbor I Ltd. ('04 tkdwns)	–	85.8	Notes	B (SP)	Multiple	U.S. / Euro / Japan
2004	Residential Re 2004	USAA	127.5	Class A Notes	BB (SP)	Multiple	U.S.
–	–	–	100.0	Class B Notes	B (SP)	–	–
2004	Helix 04 Limited	Converium Ltd.	100.0	Notes	BB+ (SP)	Multiple	U.S. / Euro / Japan
2004	Gi Capital Ltd.	Unnamed Japanese Insurer *	125.0	Notes	BB+ (SP)	Earthquake	Japan
2004	Foundation Re Ltd.	Hartford Fire Ins. Co.	180.0	Class A Notes	BB+ (SP)	Hurricane	U.S.
–	–	–	67.5	Class B Notes	BBB+ (SP)	Multiple	U.S.
2004	Redwood Capital V	Swiss Re	150.0	Notes	BB+ (SP)	Earthquake	California
	Redwood Capital VI	–	150.0	Notes	BB+ (SP)	–	–
2005	Aura Reinsurance p.l.c.	AXA Cessions.	88.4	Notes		Windstorm	Europe
2005	Arbor I Ltd. ('05 tkdwns)	Swiss Re	63.0	Notes	B (SP)	Multiple	U.S. / Euro / Japan
2005	Residential Re 2005	USAA	91.0	Class A Notes	BB (SP)	Multiple	U.S.
–	–	–	85.0	Class B Notes	B (SP)	–	–
2005	Cascadia Ltd.	FM Global	300.0	Notes	BB+ (SP)	Earthquake	NW U.S.
2005	Avalon Re Ltd.	Oil Casualty Insurance, Ltd.	135.0	Class A Notes	A- (SP)	Liability	Worldwide
–	–	–	135.0	Class B Notes	BB+ (SP)	–	–
–	–	–	135.0	Class C Notes	B (SP)	–	–
2005	Kamp Re 2005 Ltd.	Zurich*	190.0	Notes	BB+	Multiple	U.S.
2005	Atlantic & Western Re Limited	PXRE	100.0	Class A Notes	BB+ (SP)	Multiple	U.S. / Euro
–	–	–	200.0	Class B Notes	B+ (SP)	–	–
2005	Aiolos Ltd.	Munich Re	128.7	Notes	BB+ (SP)	Windstorm	Europe
2005	Atlantic & Western Re II Limited	PXRE	125.0	Class A Notes	BB+ (SP)	Multiple	U.S. / Euro
–	–	–	125.0	Class B Notes	BB+ (SP)	–	–
2005	Champlain Ltd.	Montpelier Re	75.0	Class A Notes	B- (SP)	Multiple	U.S. / Japan
–	–	–	15.0	Class B Notes	B+ (SP)	–	U.S.
2006	Australis Ltd.	Swiss Re	100.0	Class A Notes	BB- (SP)	Multiple	Australia
2006	Redwood Capital VII Ltd.	Swiss Re	160.0	Notes	BB+ (SP)	Earthquake	California
–	Redwood Capital VIII Ltd.	–	65.0	Notes	BB+ (SP)	–	–
2006	Foundation Re Ltd.	Harford Fire Ins. Co.	105.0	Class D Notes	BB (SP)	Multiple	U.S.
2006	CAT-Mex Ltd.	FONDEN	150.0	Class A Notes	BB+ (SP)	Earthquake	Mexico
–	–	–	10.0	Class B Notes	BB+ (SP)	–	–
2006	Calabash Re Ltd.	ACE American Insurance Co.*	100.0	Class A Notes	BB (SP)	Hurricane	U.S.
2006	Residential Reinsurance 2006 Limited	USAA	47.5	Class A Notes	B (SP)	Multiple	U.S.
–	–	–	75.0	Class C Notes	BB+ (SP)	–	–

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YEAR OF ISSUE	SPECIAL PURPOSE VEHICLE	SPONSOR	RISK AMOUNT	TRANCHES	RATING	PERIL	RISK LOCATION
2006	Successor Hurricane Industry Ltd.	Swiss Re	14.0	Class B-I Notes	BB- (SP)	Hurricane	N. Atlantic
–	–	–	7.3	Class C-I Notes	B (SP)	–	
–	–	–	34.3	Class D-I Notes	B (SP)	–	–
–	–	–	5.0	Class E-I Notes		–	–
–	–	–	54.0	Class F-I Notes	B (SP)	–	–
–	–	–	10.3	Class D-II Notes	B (SP)	–	–
–	–	–	35.0	Class E-II Notes		–	–
–	–	–	50.0	Class E-III Notes		–	–
–	–	–	4.0	Class E-IV Notes		–	–
–	–	–	26.0	Class E-V Notes		–	–
2006	Successor Hurricane Modeled Ltd.	Swiss Re	42.3	Class B-I Notes	BB- (SP)	Hurricane	N. Atlantic
2006	Successor Euro Wind Ltd.	Swiss Re	97.1	Class A-I Notes	BB (SP)	Windstorm	Europe
–	–	–	18.5	Class B-I Notes	BB- (SP)	–	–
–	–	–	3.0	Class A-II Notes	BB (SP)	–	–
–	–	–	110.8	Class C-I Notes	B (SP)	–	–
–	–	–	3.0	Class C-II Notes	BB (SP)	–	–
–	–	–	118.0	Class A-III Notes	BB (SP)	–	–
–	–	–	15.0	Class C-III Notes	B (SP)	–	–
2006	Successor Japan Quake Ltd.	Swiss Re	103.5	Class A-I Notes	BB (SP)	Earthquake	Japan
–	–	–	26.3	Class B-I Notes	BB- (SP)	–	–
–	–	–	70.8	Class C-I Notes	B (SP)	–	–
–	–	–	3.0	Class C-II Notes	B (SP)	–	–
2006	Successor Cal Quake Parametric Ltd.	Swiss Re	47.5	Class A-I Notes	BB (SP)	Earthquake	California
2006	Successor I	Swiss Re	4.0	Class B-I Notes		Multiple	U.S. / Europe / Japan
–	–	–	24.5	Class B-II Notes		–	–
2006	Successor II Ltd.	Swiss Re	73.2	Class A-I Notes	B (SP)	Multiple	U.S. / Europe / Japan
–	–	–	154.3	Class E-I Notes		–	–
2006	Successor III Ltd.	Swiss Re	7.2	Class A-I Notes		Multiple	U.S. / Europe / Japan
2006	Successor IV Ltd.	Swiss Re	30.0	Class A-I Notes	B (SP)	Multiple	U.S. / Europe
2006	Carillon Ltd.	Munich Re	51.0	Class A-I Notes	B+ (SP)	Hurricane	U.S.
–	–	–	23.5	Class A-II Notes	B+ (SP)	–	–
–	–	–	10.0	Class B Notes	B (SP)	–	–
2006	Mystic Re Ltd.	Liberty Mutual	200.0	Class A-I Notes	BB+ (SP)	Hurricane	U.S.
–	–	–	200.0	Class A-II Notes	BB+ (SP)	–	–
–	–	–	125.0	Class B-I Notes	BB (SP)	–	–
2006	VASCO Re 2006 Ltd.	Balboa	50.0	Class C Notes	BB+ (SP)	Hurricane	U.S.
2006	DREWCAT Capital, Ltd.	Dominion Resources	50.0	Class A Notes	BB- (SP)	Hurricane	U.S.
2006	Eurus Ltd.	Hannover Re	150.0	Class A Notes	BB (SP)	Windstorm	Europe
2006	Shackleton Re Ltd.	Endurance Specialty	125.0	Class A Notes		Earthquake	U.S.
–	–	–	50.0	Class B Notes**		Hurricane	U.S.
–	–	–	60.0	Class C Notes**		Multiple	U.S.
2006	Fhu-Jin Ltd.	Tokyo Marine & Fire *	200.0	Class B Notes	BB (SP)	Typhoon	Japan
2006	Cascadia II Limited	FM Global	300.0	Class A Notes	BB+ (SP)	Earthquake	U.S.
2006	Foundation Re II Ltd.	Hartford Fire Ins. Co.	180.0	Class A Notes	BB+ (SP)	Hurricane	U.S.
–	–	–	67.5	Class G Notes	B (SP)	Multiple	–
2006	Bay Haven Limited	Catlin Insurance Company	133.5	Class A Notes	AA (SP)	Multiple	U.S. / Europe / Japan
–	–	–	66.8	Class B Notes	BBB- (SP)	–	–
2006	Lakeside Re Ltd.	Zurich***	190.0	Notes	BB+ (SP)	Earthquake	U.S.
2006	Atlas Reinsurance III p.l.c.	SCOR	157.2	Notes	BB+ (SP)	Multiple	Europe / Japan
2006	Redwood Capital IX	Swiss Re	125.0	Class A Notes	BB (Composite)	Earthquake	U.S.
–	–	–	125.0	Class B Notes	BB (Composite)	–	–
–	–	–	18.0	Class C Notes	BBB- (Composite)	–	–
–	–	–	20.0	Class D Notes	BB- (Composite)	–	–
–	–	–	12.0	Class E Notes	B- (Composite)	–	–
2007	Calabash Re II Ltd.	ACE American Insurance Co.*	100.0	Class A Notes	BB (SP)	Hurricane	U.S.
–	–	–	50.0	Class D Notes	B+ (SP)	Earthquake	
–	–	–	100.0	Class E Notes	BB (SP)	Multiple	–
2007	Australis Ltd. ('07 takedowns)	Swiss Re	50.0	Class A-II Notes	BB (SP)	Multiple	Australia

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** Packaged as bank loans
*** Sponsored through Munich Re

YEAR OF ISSUE	SPECIAL PURPOSE VEHICLE	SPONSOR	RISK AMOUNT	TRANCHES	RATING	PERIL	RISK LOCATION
2007	Blue Wings Ltd.	Allianz Global Corporate and Specialty AG	150.0	Class A-I Notes	BB+ (SP)	Multiple	US (excl. CA), Canada, UK
2007	Ajax Re Ltd.	Aspen Insurance	100.0	Class A-I Notes	BB (SP)	Earthquake	California
2007	East Lane Ltd.	Chubb Group	135.0	Class A-I Notes	BB+ (SP)	Hurricane	U.S.
–	–	–	115.0	Class B-I Notes	BB+ (SP)	–	–
2007	Carillon Ltd. ('07 takedowns)	Munich Re	150.0	Class E-I Notes	B (SP)	Hurricane	U.S.
2007	Longpoint Re Ltd.	The Travelers	500.0	Class A-I Notes	BB+ (SP)	Hurricane	U.S.
2007	Successor II Ltd. ('07 takedowns)	Swiss Re	100.0	Class A-II Notes	B (SP)	Multiple	U.S. / Europe / Japan
–	–	–	50.0	Class C-III Notes		–	–
–	–	–	50.0	Class E-III Notes		–	–
2007	Akibare Ltd.	Mitsui Sumitomo	90.0	Class A Notes	BB+ (SP)	Typhoon	Japan
–	–	–	30.0	Class B Notes	BB+ (SP)	–	–
2007	Mystic Re II Ltd.	Liberty Mutual	150.0	Class A Notes	B+ (SP)	Hurricane	U.S.
2007	Gamut Re Ltd.	Nephila Capital Ltd.	60.0	Class A Notes	A- (SP)	Multiple	U.S. / Europe / Japan
				Other			
–	–	–	120.0	Class B Notes	BBB- (SP)	–	–
–	–	–	60.0	Class C Notes	BB-(SP)	–	–
–	–	–	25.0	Class D Notes		–	–
2007	MedQuake Ltd.	Swiss Re	50.0	Class A-I Notes	BB- (SP)	Earthquake	Mediterranean
–	–	–	50.0	Class B-I Notes	B (SP)	–	–
2007	Residential Reinsurance 2007 Limited	USAA	145.0	Class 1 Notes	BB (SP)	Multiple	U.S.
–	–	–	125.0	Class 2 Notes	B (SP)	–	–
–	–	–	75.0	Class 3 Notes	B (SP)	–	–
–	–	–	155.0	Class 4 Notes	BB+ (SP)	–	–
–	–	–	100.0	Class 5 Notes	BB+ (SP)	–	–
2007	Nelson Re Limited	Glacier Re	75.0	Class A 2007-I Notes	B (SP)	Multiple	U.S. / Europe
2007	Willow Re Limited	Allstate Insurance Company	250.0	Class B-I Notes	BB+ (SP)	Hurricane	U.S.
2007	Spinnaker Capital Limited	Swiss Re	200.0	Class 1 Notes		Hurricane	U.S. excluding FL
–	–	–	130.2	Class 2 Notes		–	FL only
–	–	–	50.0	Class 3 Notes		–	U.S. Nationwide
2007	Fremantle Limited	Brit Insurance Holdings	60.0	Class A Notes	AAA (Fitch)	Multiple	U.S. / Europe / Japan
–	–	–	60.0	Class B Notes	BBB+ (Fitch)	–	–
–	–	–	80.0	Class C Notes	BB- (Fitch)	–	–
2007	Fusion Ltd.	Swiss Re / Kyoei Fire and Marine*	30.0	Class A Notes	B (SP)	Multiple	Mexico / Japan
–	–	–	80.0	Class B Notes	B (SP)	–	–
–	–	–	30.0	Class C Notes	BB+ (SP)	Earthquake	Mexico
2007	Merna Reinsurance Ltd.	State Farm	256.0	Class A Notes	AAA (F)	Multiple	U.S. / Canada
–	–	–	647.6	Class B Notes	AA (F)	–	–
–	–	–	155.0	Class C Notes	A- (F)	–	–
2007	Javelin Re Ltd.	Arrow Capital Re	94.5	Class A Notes	A - (SP)	Multiple	U.S. / Europe / Other
–	–	–	30.8	Class B Notes	BBB- (SP)	–	–
2007	Midori Re. Ltd.	East Japan Railway***	260.0	Class A Notes	BB+ (SP)	Earthquake	Japan
2007	Blue Fin Ltd.	Allianz SE	225.7	Class A Notes	BB+ (SP)	Windstorm	Europe
–	–	–	65.0	Class B Notes	BB+ (SP)	–	–
2007	Atlas Reinsurance IV Ltd.	SCOR Global P&C SE	235.0	Class A Notes	B (SP)	Multiple	Europe / Japan
2007	Newton Re Limited	Catlin	87.5	Class A Notes	BB+ (SP)	Earthquake	U.S.
–	–	–	137.5	Class B Notes	BB (SP)	Hurricane	–
2007	Globecat Ltd.	Swiss Re	40.0	Class A Notes	B3 (M)	Hurricane	U.S.
–	–	–	20.0	Class B Notes	B1 (M)	Earthquake	California
–	–	–	25.0	Class C Notes	Ba3 (M)	Earthquake	Latin America
2007	Green Valley Ltd.	Groupama SA	288.0	Class A Notes	BB+ (SP)	Windstorm	France
2007	Redwood Capital X Ltd.	Swiss Re	25.0	Class A Notes	Baa3 (M)	Earthquake	California
–	–	–	227.7	Class B Notes	Ba2 (M)	–	–
–	–	–	50.2	Class C Notes	Ba3 (M)	–	–
–	–	–	130.5	Class D Notes	Ba3 (M)	–	–
–	–	–	45.2	Class E Notes	B2 (M)	–	–
–	–	–	20.0	Class F Notes			

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Appendix III:

Sidecars – "Accordion Capital" Less Active

2007 in Review

Sidecar activity was down dramatically year-over-year, reflecting the impact of rate softening and additional sources of risk transfer capacity. Sidecar structures are often referred to as "accordion capital" for their ability to deliver non-permanent equity and debt capital against which existing insurers and reinsurers can write in times of capacity shortages.[20] Going forward, sidecar activity is expected to continue to be exceptionally responsive to capacity shortages. Perhaps paradoxically, this should serve to limit future post-event capacity and pricing swings.

The table on p.45 provides an overview of sidecar activity during 2007 relative to a time span stretching from just after Hurricanes Katrina, Rita and Wilma in late 2005 through the end of 2006. Though the total activity during 2007 appears down notably, further adjustment is needed to get a more accurate sense of the true reversal in sidecar formation frequency and capital allocations.

Though MaRI Ltd., a Marsh proprietary sidecar formed exclusively for its clients, was technically announced in 2007, its formation in early January reflects the prevailing market dynamics of 2006 rather than the rate environment of 2007. In an economic sense, this transaction could more accurately be classified as part of the "Class of 2006."

Two of the 2007 transactions (Emerson Re and Mont Gele Re), which have generally been depicted as sidecars, actually provide their sponsors with excess of loss coverage. Sidecars, as a general rule, typically provide their sponsors with proportional (quota share) protection.

Adjusting activity totals (re-classifying MaRI as a 2006 transaction as well as removing Emerson and Mont Gele Re completely) implies adjusted figures through 2006 (i.e., post-Katrina/Rita/Wilma) of 18 transactions involving USD5.4 billion of capital, and five transactions at USD947 million of risk capital in 2007. In terms of risk capital, this reduction of 82 percent (on an annualized basis) is even more reflective of the true drop-off in sidecar activity during 2007.

20 For a complete description and analysis of the mechanics and key economic variables of sidecar transactions, please see Appendix IV of our 2006 year-end report: *Ripples into Waves*, which is available at www.guycarp.com.

POST-KATRINA / RITA / WILMA (KRW) THROUGH YEAR-END 2006

VEHICLE NAME	SPONSOR	CAPITALIZATION (USD MILLIONS) COMMON EQUITY	DEBT/NON EQUITY	TOTAL	COMMENTARY
Bay Point Re	Harborpoint	75.0	75.0	150.0	U.S. property catastrophe business
Blue Ocean Re	Montpelier Re	-	-	335.0	Focused on property cat retro
Concord Re	Lexington Insurance	375.0	375.0	750.0	Primary insurer sponsored transaction
Cyrus Re	XL Re	365.0	160.0	525.0	Backed by Highfields Capital
Flatiron Re	Arch Re	420.0	420.0	840.0	
Helicon Re	White Mountains	145.0	185.0	330.0	Capacity for Folksamerica short-tail business
Monte Fort Re	Flagstone Re	60.0	-	60.0	ILWs and peak zone exposures
New Point Re	Harborpoint	125.0	125.0	250.0	ILWs and collateralized retro
Norton Re	Brit Insurnace	107.7	-	107.7	Focused on property cat retro
Panther Re	Hiscox	144.0	216.0	360.0	40% quota share of synd. 33 property cat business
Petrel Re	Validus Re	200.0	-	200.0	Marine / Offshore energy business
Rockridge Re	Montpelier Re	-	-	91.0	Focused on short-tail property business
Sirocco Re	Lancashire Re	95.0	-	95.0	Gulf of Mexico offshore energy business
Starbound Re	Rennaissance Re	127.0	184.0	311.0	Florida property catastrophe business
Stoneheath Re	XL Re	300.0	-	300.0	Offers "contingent capital" to XL companies
Timicuan Re	Rennaissance Re	50.0	20.0	70.0	
Triomphe Re	Paris Re	121.0	64.0	185.0	24% share of Paris Re 2007 property cat business
POST KRW THROUGH YEAR-END 2006 TOTALS		**COMMON EQUITY**	**DEBT/NON EQUITY**	**TOTAL**	
Capital raised		2,709.7	1,824.0	4,959.7	
Aggregate debt to equity ratio				0.67x	
Transaction count				17	
Adjusted Totals*					
Transaction count				18	
Adjusted capital raised				5,359.7	

- 2007 Adjusted totals exclude Emerson Re and Mont Gele Re due to their excess of loss structure and MaRI Ltd. due to its formation in early January 2007
- Although sometimes classified as a Sidecar, Norton Re II has been excluded from 2007 activity due to its structuring characteristics of not being a quota share of another market participant's book, but writing a diversified portfolio of open market placements.
- Broken out by equity and non-equity when data is available
- Sources: Bear Stearns Equity Research, A.M. Best Company, Inc., The Insurance Insider, Guy Carpenter & Company, LLC, IBNR Weekly, Company Press Releases

2007

VEHICLE NAME	SPONSOR	CAPITALIZATION (USD MILLIONS) COMMON EQUITY	DEBT/NON EQUITY	TOTAL	COMMENTARY
Cyrus Re II	XL Re	35.0	101.0	136.0	Renewal. 10% of property cat business
Emerson Re	Cig / New Castle Re	-	500.0	500.0	Excess of loss structure
Kepler Re	Hannover Re	-	200.0	200.0	Worldwide natural perils coverage
MaRI Ltd	Ace	400.0	-	400.0	Marsh's proprietary sidecar (formed 01/07)
Mont Gele Re	Flagstone Re	60.0	-	60.0	Excess of loss structure
Puma Re	Bridge Re	-	-	182.5	Worldwide property retrocession business
SPS 6103	MAP Ltd	-	-	87.0	33% of MAP 2791's U.S. cat reinsurance business
Starbound II	Rennaissance Re	102.5	239.0	341.5	Renewal. Property cat business
2007 TOTALS		**COMMON EQUITY**	**DEBT/NON EQUITY**	**TOTAL**	
Capital raised		597.5	1,040.0	1,907.0	
Aggregate debt to equity ratio				1.74x	
Transaction count				8	
Adjusted Totals*					
Transaction count				5	
Adjusted capital raised				947.0	

* "Adjusted Totals" excludes Emerson Re and Mont Gele Re due to their excess of loss structure and MaRI Ltd due to its timing of January 2007 to allow a "like for like" comparison versus 2006.
- Post Katrina / Rita / Wilma through year-end 2006 adjusted totals reflect the inclusion of MaRI Ltd., due to its formation in early January 2007
- Broken out by equity and non-equity when data is available
- Sources: Bear Stearns Equity Research, A.M. Best Company, Inc., The Insurance Insider, Guy Carpenter & Company, LLC, IBNR Weekly, Company Press Releases

Appendix IV:

Extreme Mortality Activity Is Light

2007 in Review

Extreme mortality bond issuance during 2007 was almost non-existent. The year's sole issuer was Swiss Re, which, in early January sponsored the USD700 million Vita Capital III offering. Though bond issuance activity was down year-over-year, continued work and research into applying capital markets solutions and technology to mortality risk is ongoing. During the year, for example, several announcements were made concerning more advanced approaches to developing exchange traded indices of mortality risk. Accordingly, future capital markets activity in this area is expected to be high.

For a more complete description and analysis of extreme mortality bond transaction mechanics, please refer to Appendix V of our year-end 2006 report: *Ripples into Waves* which is available at www.guycarp.com.

YEAR	SPECIAL PURPOSE VEHICLE	SPONSOR NAME	RISK AMOUNT (USD MILLIONS)	TRANCHE	RATING	PERIL	RISK LOCATION
2003	Vital Capital Ltd.	Swiss Re	400.0	Notes	A+ (S&P)	Extreme Mortality	US / UK / France / Italy / Switzerland
2005	Vital Capital II Ltd.	Swiss Re	62.0	Class B Notes	A (S&P)	Extreme Mortality	US / UK / France / Italy / Switzerland
–	–	–	200.0	Class C Notes	A- (S&P)	–	–
–	–	–	100.0	Class D Notes	BBB (S&P)	–	–
2006	Tartan Capital Ltd.	Scottish Re	75.0	Class A Notes	AAA (S&P)	Extreme Mortality	U.S.
–	–	–	80.0	Class B Notes	BB (S&P)	–	–
2006	Osiris Capital p.l.c.	AXA	129.0	Class B-1 Notes	AAA (S&P)	Extreme Mortality	U.S. / France / Japan
–	–	–	64.5	Class B-2 Notes	A- (S&P)	–	–
–	–	–	150.0	Class C Notes	BBB (S&P)	–	–
–	–	–	100.0	Class D Notes	BB+ (S&P)	–	–
2007	Vital Capital III Ltd.	Swiss Re	100.0	Class A-IV	AAA (S&P)	Extreme Mortality	US / UK / Germany / Japan / Canada
–	–	–	100.0	Class A-V	AAA (S&P)	–	–
–	–	–	71.0	Class A-VI	AAA (S&P)	–	–
–	–	–	129.0	Class A-VII	AA- (S&P)	–	–
–	–	–	90.0	Class B-I	A (S&P)	–	–
–	–	–	50.0	Class B-II	A (S&P)	–	–
–	–	–	39.4	Class B-III	A (S&P)	–	–
–	–	–	50.0	Class B-V	AAA (S&P)	–	–
–	–	–	71.0	Class B-VI	AAA (S&P)	–	–

Appendix V:
Research Methodology

The cat bond market is tested constantly with new transaction structures and mechanics. This near-constant stream of innovation presents challenges when tracking cat bond market activity. Consistent with our previous reports, our methodology addresses the following challenges:

The total risk capital of tranches (whole bonds) that provide coverage for multiple perils (in which the total principal is exposed) is included in each of the peril categories it covers. Therefore, figures in these by-peril exhibits do not total the actual volume of bonds issued in certain years.

With respect to shelf offerings, all takedowns of tranches in a given year are summed and considered a single issuance for that tranche during the year. If additional takedowns occur in a subsequent year, the volume of those subsequent-year takedowns is allocated only to the year in which the takedown occurred and is counted as a new transaction in that year.

For all other exhibits (total volume and number by year, issuances by size, trigger, bond tenor, sponsor type and sponsor experience) all tranches of a specific transaction are combined and considered a single cat bond issuance, except as otherwise footnoted.

The catastrophe activity of 2004 and 2005 prompted the leading modeling agencies to consider whether current environmental conditions are causing a period of increased storm frequency or severity (relative to long-term historical averages) in the Atlantic Basin. While no clear consensus has been achieved, an industry standard has emerged. As part of the risk analysis component of the documentation for a catastrophe bond with U.S. wind peril exposure, modeling firms will typically provide estimates of expected loss under the assumption that this period of increased storm frequency or severity is actually occurring. Generally, a second estimate of expected loss, exclusive of the possible influence of increased hurricane frequency and severity, is also included. These estimates, provided under different sets of assumptions, have been well-received by investors, who tend to benchmark pricing based on the most conservative set of assumptions. Catastrophe bonds with no exposure to U.S. hurricane peril are not affected by these considerations.

In keeping with industry terminology and practice, we refer to the estimate of expected loss as if the period of increased frequency or severity is occurring as the near-term estimate, while referring to the estimate of expected loss as if the period of increased frequency and severity is not occurring as the long-term estimate. Where applicable, unless otherwise indicated, all exhibits and commentary making reference to expected loss refer to the near-term expected loss, as this estimate has become the primary figure used by cat bond investors when making pricing/trading decisions.

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Questions or comments regarding this report should be addressed to the authors – Christopher McGhee, Ryan Clarke, John Fugit and Jeffrey Hathaway. Please direct correspondence to john.fugitjr@guycarp.com.

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