Alternative Capital: The Next Evolution

In recent years, alternative reinsurance capital has become more issuer-friendly with a series of innovations that have reduced costs, broadened coverage and introduced more efficient and flexible products. Niraj Patel, ILS Portfolio Manager, sets out the ways in which alternative capital is adapting to meet the ever-evolving needs of the insurance industry. In this paper he illustrates how alternative capital has become an integral part of many insurers' risk-transfer strategy.

Until recently, the market for reinsurance resembled a closed eco-system; participation was limited to a well-defined group of buyers and sellers. Rated reinsurance companies, capitalized with private and public equity provided the capacity, and price fluctuations were based on the availability of capital from these reinsurers.

Since the turn of the century, new participants – collectively referred to as "alternative capital" – have entered the eco-system generating innovations and permanently altering the structure of the reinsurance market.

An early form of alternative capital was the catastrophe bond[1], a 144a private placement, structured to provide reinsurance protection. Although these early catastrophe bonds were innovative, they were also complicated and expensive to issue. While they had their merits, the cost of this untested product was prohibitive for all but the largest insurers. Early investors appreciated the merits of uncorrelated bonds, but the scale of the market was too small to consider it an asset class so catastrophe bonds were relegated to the periphery of the eco-system – present, but not causing too much of a disruption.

Things changed after hurricane Katrina in 2005. The loss resulted in a dearth of traditional reinsurance capacity and a sharp increase in price. Some buyers – particularly Florida insurers – were unable to secure sufficient reinsurance at any price. This created a void which catastrophe bonds quickly filled. Sidecars and other types of insurance securitizations also emerged during this period.

National and global insurers, recognizing the merits of diversifying sources of capacity, began allocating a portion of their reinsurance budget to catastrophe bonds and other forms of alternative capital. Alternative capital continued to steadily penetrate the market even as pricing for reinsurance dropped. Today, it accounts for over 20% of the property catastrophe market and is expected to continue to gain market share.

Alternative capital growing at a faster rate than traditional reinsurance capital

Total global reinsurance capital currently stands at $565 billion as of 2Q 2015, up from $455 billion in 2011[2] (**Exhibit 1**). This growth has persisted despite capital management actions such as

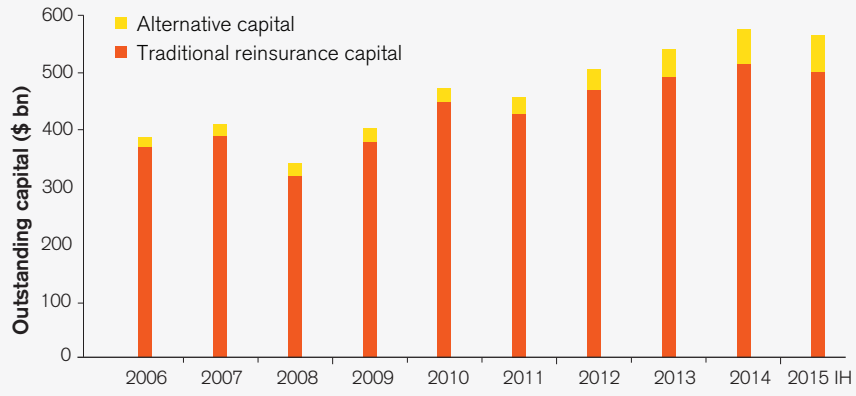

Exhibit 1: Traditional and alternative reinsurance capital. Source: Aon Benfield

[1] For background on catastrophe bonds, reader can refer to a number of available primers. One such primer can be accessed at www.air-worldwide.com/Publications/AIR-Currents/So-You-Want-to-Issue-a-Cat-Bond/. Rule 144A is a safe harbor exemption from the registration requirements of Section 5 of the Securities Act of 1933 for certain offers and sales of qualifying securities by qualified institutional buyers (QIBs).

[2] Source: The Aon Benfield Aggregate Results for the six months ended June 30, 2015.

share buybacks and dividends. The determining factor has been the low level of catastrophe losses since 2011. Reinsurance prices have dropped as reinsurance capital has grown.

Alternative capital has also grown during this period. As of 2Q 2015, it is estimated to be $68 billion, providing 22% of the property catastrophe capacity in the market[3]. The most commonly recognized form of alternative capital – catastrophe bonds issued as 144a private placements – have grown at a 20% rate since 2002 (**Exhibit 2**).

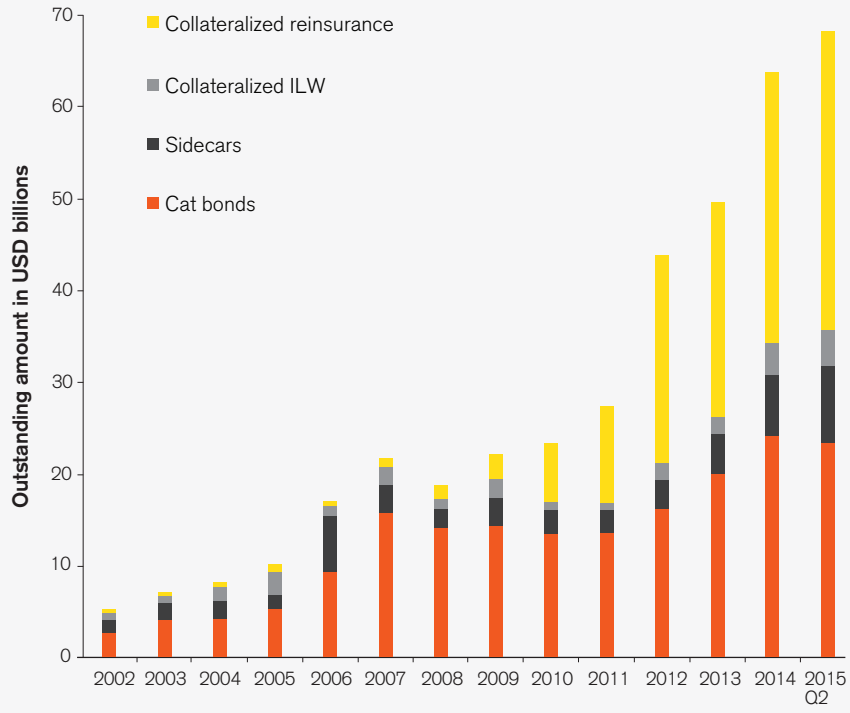

Exhibit 2: Growth of alternative reinsurance capital. Source: Aon Benfield

Buyer's perspective

Catastrophe bonds have always had traits that made them a viable complement to traditional reinsurance (see box below). The cost and complexity associated with issuance, however, initially limited their usage to certain large insurers. As these hurdles have come down, growth has been achieved due to increased utilization by repeat issuers and new issuers accessing capital markets for the first time.

As the efficiency, effectiveness, and flexibility of accessing alternative capital has improved, many insurers have started thinking of alternative capital as an integral, if not a dominant, part of their overall reinsurance strategy.

Every component of the cost has been driven down

In a typical catastrophe bond, the ceding company bears expenses associated with the issuance. Catastrophe bond spread is generally quoted net of these frictional expenses. This is similar to other fixed income securities, in that the quoted spread is the spread investors earn, assuming that security is purchased at par. This differs from traditional reinsurance, where it is common practice to quote a rate gross of brokerage and other expenses. This gross rate needs to be adjusted down by brokerage, taxes and other expenses to arrive at a net premium the reinsurer would achieve.

A sponsor of a catastrophe bond (ceding company) typically bears the following costs:

1. **The spread over risk-free rate paid to the investors.**
   This is the premium the ceding company pays for its reinsurance protection.

2. **Frictional costs, including:**
   a. The marketing and placement agent fees, which can be thought of as equivalent to reinsurance brokerage.

   b. The costs of establishing a special purpose vehicle, including:
   - legal fees
   - indenture and other documents
   - trustee

   c. The cost of additional service providers, including:
   - independent, third-party modeling agent that performs risk characterization of the security
   - calculation agent
   - rating agency

Benefits of catastrophe bonds to sponsors

Insurance companies have been attracted to catastrophe bonds for their risk-transfer needs due to the following advantages they offer:

a. **Diversification of sources of risk capital:** Catastrophe bonds expand the source of capacity available to the insurer; mitigating the reliance on traditional reinsurance products;
b. **Reduced counterparty risk:** Catastrophe bonds are fully collateralized, which provides robust protection, even in extreme loss scenarios that could impair the financial viability of professional reinsurers; and
c. **Multi-year coverage:** Whereas reinsurance is typically offered on an annual basis, catastrophe bonds often provide protection for a multi-year period.

[3] Based on estimated property catastrophe reinsurance capacity of $310 billion.

The spread, or risk premium, demanded by investors has dropped over the last few years

Since the early days in mid-1990s when insurance risk was first securitized, catastrophe bonds have gone through multiple market and reinsurance cycles and are now an accepted asset class. Whereas in the past, there was a "novelty premium" charged, this has been eliminated through competition. The investor base has broadened and many investors have increased their allocation as they have recognized the attractiveness of catastrophe bonds relative to other asset classes, such as high-yield corporate bonds. Finally, as a truly diversifying asset class in a multi-asset portfolio, investors probably have tolerance for even lower risk premiums.

From a reinsurer's perspective, this pricing trend may appear aggressive, but it is important to recognize that catastrophe bonds are typically a small percentage (less than1%, often less than 0.5%) of an investor's portfolio[4]. As such, peak peril catastrophe risks (e.g. U.S. hurricane) don't pose the same concentration challenge for capital market investors as they do for reinsurers[5].

These factors have resulted in lowering of risk premium. In fact since 2012, catastrophe bonds (and broader alternative capital) have started to significantly influence pricing dynamics in the reinsurance market.

Frictional costs have also come down

New financial market technology and modeling tools, as well as increased competition among various service providers, have resulted in reduced frictional expenses associated with issuing a catastrophe bond.

Placement fees have come down significantly over the years, as a result of competition among broker-dealers.

Use of **shelf offerings**, a concept borrowed from the medium term note program for corporate debt issuers in the capital markets, has reduced cost and increased flexibility. Shelf offering involves creating a platform for multiple note issuances, thereby amortizing fixed costs over many issuances. Moreover, a shelf program offers a ceding company the ability to opportunistically purchase additional reinsurance cover as pricing changes over time. Finally, it encourages ongoing dialogue between the ceding company and investors, which increases familiarity and can result in improved pricing and terms for repeat issuances.

A significant number of catastrophe bonds are now issued without a rating due to the comfort level investors have developed, hiring of high-quality underwriting talent, and availability and affordability of risk modeling platforms.

The net result is that in recent years, the price differential ceding companies have to pay for reinsurance protection through catastrophe bonds versus traditional reinsurance cover, has come down. In fact, in some cases the price of coverage is lower in securities form than it is in reinsurance form, further incentivizing issuers to access the capital markets for their risk management needs.

Effectiveness and flexibility: product innovations broaden the appeal of catastrophe bonds

Early catastrophe bonds covered simple risks with simpler structures. Due to the novelty of the product, investors insisted upon tightly engineered offerings in 144a form, placing a heavy burden on issuers. In recent years, experienced investors and portfolio managers have become sophisticated in analyzing risks and accordingly, catastrophe bonds have evolved to offer flexibility and more effective cover to ceding companies, thereby lowering the friction costs.

Coverage broadening

The clearest and earliest sign that catastrophe bonds are becoming issuer friendly has been the shift from parametric or index based triggers to indemnity trigger. Catastrophe bonds have also started including new, often unmodeled, perils (e.g. inclusion of volcanic eruption and meteorite impact in USAA's Residential Re transactions issued in 2014-2015). These "non-modeled" or less "well-modeled" perils require traditional reinsurance underwriting practices such as actuarial analysis to characterize risks. Finally, there has been a continued broadening of terms and conditions (such as "hours clause," definition of perils, covered territory and subject business). These changes have brought the coverage provided by catastrophe bonds closer to traditional reinsurance.

While indemnity triggers are considered more "issuer friendly", due to the elimination of basis risk, it is interesting to note that parametric triggers have recently made a comeback – but this time due to ceding company, rather than investor preference. Examples include three parametric catastrophe bonds issued in 2015 (AIG's U.S. wind-exposed

Hours clause

Excess of loss property reinsurance policies typically provide per occurrence deductibles. These treaties allow aggregation of individual losses arising out of a covered event. However, in an effort to limit this aggregation, these treaties also stipulate that individual losses must occur within a specified time period. This is referred to as an "hours clause". An hours clause will typically allow the reinsured to choose the date and time when any such period of consecutive hours commences and if the event is of duration greater than this period, it is divided into two or more loss occurrences. Thus, if there is one occurrence there is one deductible and one per occurrence limit. However, losses falling outside this defined period are counted towards a separate occurrence deductible and a separate limit.

[4] As of 2Q 2015, the size of alternative reinsurance capital is $68 billion, of which catastrophe bonds represent $24 billion. For comparison, outstating U.S. debt market is $39 trillion, including $8 trillion of corporate debt (source: SIFMA).

[5] Aggregation of peak peril risks in large reinsurers has posed key counterparty credit risk in the reinsurance industry. Given these concentrations, peak peril risks (especially U.S. windstorms and specifically Florida windstorms) have commanded higher margin than non-peak perils driven by higher required capital.

Compass Re II, Hannover Re/Kaiser Permanente's U.S. earthquake-exposed Acorn Re and Turkish Catastrophe Insurance Pool's Turkish earthquake-exposed Bosporus Re 2015-1).

Parametric catastrophe bonds have the advantage of minimizing the loss development period, thereby allowing the sponsor to receive payment quickly upon a qualifying loss event. Moreover, by eliminating the variability associated with the ceding company's realized losses, a sponsor can get better pricing (at least theoretically).

While they introduce basis risk, the above advantages appear to make parametric products compelling to at least some issuers. One example of how this strategy is being implemented is with AIG. It has established parametric (Compass Re II) and indemnity (Tradewynd) bond programs in parallel to each other. Government and semi-government entities are also likely sponsors of parametric transactions, which owing to their quick payout, allow these entities to distribute funds to affected populations rapidly after a catastrophe event.

Historically, ceding companies placed remote layers of risks in catastrophe bond market. While this is still the case to some extent, investors have been willing to take on more risks (higher risk layers of reinsurance i.e. layers with higher modeled expected loss) as long as they are compensated for it. In fact, in 2015 ceding companies have found it relatively easier to place catastrophe bonds with higher spreads (say > 5%). A good example of placement of a riskier layer was Catlin's $300mm Galileo Re 2015 catastrophe bond in 2015, which had a risk profile closer to a quota-share side car than a typical 144a catastrophe bond. USAA, Argo and Swiss Re have also sponsored such high coupon, higher risk catastrophe bonds.

The catastrophe bond market continues to be receptive to placement of new risks and new territories. For example, an Italian insurer, UnipolSai, issued a Europe earthquake-exposed catastrophe bond, Azzurro Re, in 2015 that utilized an indemnity trigger – the first issuance of its kind.

Structural feature flexibility

Catastrophe bonds have historically incorporated a "reset" feature given the multi-year nature of the risk transfer. This provides for the annual remodeling of the bond based on the most current exposure and adjusting the trigger (attachment and exhaustion points) so that the risk profile remains similar to that at inception. This protects both investors and ceding company against changes in risk profile of the cover from year to year.

In recent years, catastrophe bonds have started incorporating additional flexibility in the form of a variable reset feature. Variable reset allows the ceding company to change attachment and exhaustion points on reset dates to better fit their needs. This results in a change in risk profile relative to that at inception, and the bond coupon is reset so as to be commensurate with the new risk profile. The variable reset feature has allowed ceding companies to better manage their reinsurance coverage as their risk-transfer needs and other reinsurance covers often change over time.

Another recent trend observed in the market is a feature that allows "pre-funding" to secure capacity and pricing. For example, in 2015 the Massachusetts Property Insurance Underwriting Association (MPIUA) successfully obtained reinsurance protection through its Cranberry Re catastrophe bond, in which the risk period and interest accrual started approximately two months after the settlement. The investors were not subject to risk for a two-month period between bond settlement when the collateral trust was funded and the start of risk period.

During this "risk-free" period, investors were paid only collateral return (collateral was invested in treasury money market fund). Upon the start of the risk period, investors started receiving a risk spread in addition to the collateral return. Another such notable example was Texas Wind Storm Association's (TWIA) Alamo Re 2015 catastrophe bond, for which risk period and interest accrual started approximately two weeks after settlement. These transactions probably could have priced at a slightly lower spread in absence of this pre-funding feature. However, the flexibility of securing capacity in advance of the start of the risk period is certainly a development that is favorable to ceding companies and has been possible due to the soft market phase of the reinsurance cycle.

Still room for improvement

It should be pointed out that while the flexibility offered by catastrophe bonds has been improving and coverage terms and conditions are moving towards those in traditional reinsurance, there is a still a difference in most cases[6].

Catastrophe bonds cover certain named perils (specified upfront in the offering document), whereas traditional reinsurance treaties often cover all natural perils. They have a defined maximum loss development period after which losses are commuted. A traditional reinsurance treaty follows, "the fortunes of the ceding company." Terms and conditions in the traditional reinsurance market have also been loosening lately, with extension of hours clauses and sometimes with inclusion of cyber risks at no extra cost. Catastrophe losses due to terrorism are also sometimes covered in traditional reinsurance.

In general, relatively well defined risks are the easiest to securitize. Traditional reinsurers are in a better position to offer more complex coverage and have been focusing on providing holistic re/insurance solutions to their clients. Nevertheless, many ceding companies consider the benefits of catastrophe bonds compelling enough to counter some of the shortcomings and view continued development of

[6] This comment refers to the 144a catastrophe bond market. Private transactions, such as catastrophe bond-lite and collaterized reinsurance are often similar to traditional reinsurance.

the catastrophe bond market as strategically beneficial.

Catastrophe bond-lite and other private transactions: a big leap forward in both coverage and structural innovation

Discussion so far has focused on 144a catastrophe bonds. Over the last few years there has been a rapid growth in private transactions. These include private placements of securitized risks, sometime referred to as "catastrophe bond-lite" and collateralized reinsurance. These have further increased efficiency, effectiveness, flexibility and ease of transacting with alternative capital providers.

Issuance activity for catastrophe bond-lite has grown from almost zero in 2011 to more than $750 million in the first eight months of 2015. These transactions allow smaller issuers to access capital markets by streamlining the documentation required, thereby reducing costs associated with issuing a catastrophe bond. Moreover, in these private transactions, modeling and risk analysis results are not included as part of the offering – investors are expected to formulate their own independent view of risk. This is a profound shift in responsibility from the issuer to the investor, made possible due to the availability and affordability of risk modeling tools, and the investor's willingness to hire underwriting talent capable of conducting such analyses.

A number of service providers and brokers has established issuance platforms to facilitate these private transactions[7]. These include:

- The Kane SAC Ltd. platform: This was launched in August 2013 and is operated by Kane. Examples of usage include Dodeka private catastrophe bonds for ILS manager, Twelve Capital and Tralee bonds.
- The Market Re platform: Launched in May 2014 and operated by Jardine Lloyd Thompson Capital Markets (JLT). This has been used to issue Market Re catastrophe bonds, for example Florida Named Storm-exposed Market Re 2015-3 bonds.
- The Kaith Re platform: Operated by Hannover Re and used to issue Li Re bonds.
- The Tokio Tensai platform (Shima Re): Launched in June 2013 and operated by Tokio Solutions Management Ltd. (Tokio Millenium Re). This was used to issue Hotaru bonds for Tokio Millennium Re.
- Separate SPI's set-up by sponsors for specific issuance: Examples of issuance include China Re's Chinese earthquake-exposed Panda Re, and Southern Oak Insurance Co.'s Oak Leaf Re 2015-1.
- CATstream and Resilience Re platforms: CATstream was launched by Aon Benfield in June 2014 and Resilence Re was launched by Willis Capital Markets and Advisory in October 2014. As of the publication of this article, these platforms have not yet been used to structure and issue any transactions.

An interesting development in this area has been the emergence of syndicated collateralized reinsurance notes. For example, in August 2015, Ace issued collateralized reinsurance notes as a part of its global property catastrophe excess of loss program for North American and international operations. These notes replicated Ace's June 2015 traditional reinsurance program from the perspective of pricing, terms, conditions and coverage. In a typical collateralized reinsurance program, investors work with service providers to set up appropriate collateral trusts and often negotiate reinsurance contracts individually with the ceding companies. A unique aspect of this note issuance was that the notes were syndicated. Thus, all investors purchased notes issued by one segregate account cell. By streamlining documentation, Ace was able to make the process more efficient. Earlier in 2015, an Australian insurer, Youi, utilized a similar structure for part of their reinsurance cover. This was Youi's first experience with tapping capital markets for its risk-transfer needs.

Alternative capital providers continue to show pricing discipline

Alternative capital is often identified as a cause of continued reinsurance market softening. In a general sense, this is true – additional capacity results in lower price. Further, some of the pricing advantages highlighted earlier have allowed investors to compete effectively relative to traditional reinsurance pricing.

Segregated account company as a reinsurance transformer

A reinsurance transformer is a platform to convert reinsurance contract to a security. They are often set up as segregated account companies, where each segregated account (also referred to as a "cell") is authorized to enter into a reinsurance agreement. Each cell's maximum liability is fully collateralized by investors who purchase notes issued for this purpose.

The assets and liabilities of each segregated account are legally segregated from the transformer's general account and any other segregated accounts. They are held exclusively for the benefit of the segregated account owners and any counterparties to transactions linked to that account. This statutory segregation is less expensive and quicker to establish than a separate reinsurance company and doesn't need to be separately licensed.

A number of providers have created issuance platforms utilizing this structure. They typically use template documentation that has already been reviewed and approved by various service providers and regulators; this further lowers the associated frictional costs. These efficiencies have facilitated the securitization of smaller transactions.

[7] Due to the private nature of these transactions, typically only a limited amount of information is available. These platforms are sometimes used to transform a reinsurance contract into a security format.

However, there is evidence that alternative capital providers have shown pricing discipline. Investors have demanded a minimum coupon, irrespective of the remoteness of risk, to clear the market for a primary issuance of a catastrophe bond offering. In the secondary market, spreads for lower yielding U.S. wind-exposed bonds have shifted upwards in 2015. This "floor" is different for different types of risk, with diversifying risks commanding lower spreads than the peak zone risks.

There are also structural changes accepted by reinsurers that are still rejected by alternative capital. An excellent example occurred in 2015 when Allstate was unable to place a seven-year catastrophe bond, Sanders Re, within a desired pricing guidance. Investors viewed the incremental price concession for this long tenor bond to be inadequate. Moreover, the structure provided Allstate with a unilateral option to redeem the transaction early, thereby allowing the company to replace the coverage if it found better pricing elsewhere. The indication was that investors were prepared to accept these terms, but at a higher price than offered, indicating that it was a pricing issue, not a reluctance to assume the risk. The company chose to withdraw its offering and was able to obtain the coverage in the traditional reinsurance market.

In general, the pricing trend observed in alternative capital has been consistent with what has been observed in the traditional market – namely, a slow-down of the market softening, as prices approach a floor. It is interesting to note that with catastrophe bonds, there is a continuous re-pricing of risk, so one does not have to wait for renewals to observe the price changes – they happen continuously through secondary trading.

The slowdown in further softening of reinsurance pricing has been attributed to increased demand for catastrophe reinsurance, particularly for Florida wind, at a time when the ILS funds have not been accepting large additional capital from investors, and pushing back on further tightening of spreads. While further tightening of spreads in the future cannot be ruled out, the rate of decrease has tapered off as investors evaluate relative attractiveness of insurance risk versus other asset classes.

Alternative capital: an integral part of many insurer's risk transfer strategy

The continued evolution in alternative capital is a key driver for its future growth, particularly at a time when insurers and reinsurers are under pressure to reduce their costs of capital. Alternative capital is now an integral component of most ceding companies' overall risk transfer strategy. It appears that the conversation is moving from the permanence and impact of alternative capital on the re/insurance market to how best to utilize this flexible source of capital. Consider the following examples:

- USAA has consistently accessed the capital markets since 1997 and has issued 53 tranches in 24 separate issuances. Other repeat and large issuers include AIG, Citizens Property Insurance (FL Citizens), Allstate, State Farm, Chubb, Texas Windstrom Insurance Association (TWIA), Everest and Zenkyoren.
- TWIA and Florida Citizens now obtain more than 50% of their risk transfer cover through capital market transactions. AIG has stated that approximately 30% of their reinsurance cover is obtained through catastrophe bonds. Over 20% of Ace's reinsurance coverage is now placed in fully collateralized format.
- Florida insurance companies have used alternative capital to depopulate from FL Citizens. Heritage Property & Casualty Insurance was the first sponsor to utilize a 144a catastrophe bond to replace part of their FHCF (Florida Hurricane Catastrophe Fund) coverage. In 2015, it increased its reinsurance purchase and achieved diversification across sources of capital (approximately one third each through traditional reinsurance, catastrophe bonds and the FHCF).
- FHCF itself purchased private reinsurance coverage for the first time in its history in 2015. Alternative capital/collateralized players collectively provided approximately 24% of the cover.
- Zenkyoren has successfully obtained reinsurance capacity through catastrophe bonds and collateralized markets. This despite a total loss on the Zenkyoren-sponsored Muteki catastrophe bond as a result of the Tohoku earthquake in 2011.
- In 2013 New York's Metropolitan Transportation Authority (MTA) sponsored MetroCat Re catastrophe bond to obtain coverage against U.S. storm surge risk directly from the capital markets, thereby disintermediating the re/insurance industry. Électricité de France S.A. (EDF) sponsored the Pylon II Capital Ltd. catastrophe bonds in 2011 to obtain coverage against wind storms in France. A key feature of these corporate-sponsored catastrophe bonds was the use of a parametric trigger.
- In addition to repeat sponsors, the catastrophe bond market continues to attract new sponsors/ceding companies. For example, Florida domiciled insurer, Safepoint, obtained U.S. wind cover by sponsoring a catastrophe bond in 2015 for the first time.

In conclusion, alternative capital continues to adapt to meet the changing industry landscape and meet insurers' evolving needs. Low correlation of insurance risk with the broader financial markets has been demonstrated over the last few years as catastrophe bonds delivered good risk-adjusted returns to investors. The year 2012 was a pivotal point in the development of catastrophe bonds, when capital market investors started co-leading the pricing trends, rather than following the traditional reinsurance market. As the market has continued to grow at a fast clip, many re/insurers have started making alternative capital a core and integral part of their risk transfer strategy.

At the time of this article, the alternative capital (and traditional reinsurance) market has been trying to find a bottom in pricing. However, even if pricing stabilizes at current levels, the expected future returns are likely to be lower compared to its historical performance over the last few years. Moreover, in the absence of any large catastrophe losses, it is likely that pricing will soften further. Some

re/insurance experts have expressed concern that a large and unexpected catastrophe loss may spook investors, leading them to withdraw from the market. However, based on the history of catastrophe bonds and investors' behavior with other asset classes, this seems unlikely. As institutional investors, such as pension funds, endowments and foundations, continue to allocate to the asset class, its influence in driving trends in the reinsurance market is bound to increase.

Helping you to make more informed capital allocation decisions

The changes in the ILS market highlighted above introduce complexity to both coverage and structure. By leveraging PartnerRe's industry leading modeling, research and underwriting resources and by applying a disciplined pricing and underwriting process consistently across all products, PartnerRe is uniquely positioned to provide our clients with a balanced view of the best solution for them.

PartnerRe's experience in underwriting property catastrophe dates back to 1993. Combined with expertise in alternative capital, including ILS fund management since 2006 and sponsorship of a series of sidecars via our Lorenz Re vehicle, we can work with ceding companies and brokers to develop customized solutions.

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