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T W O T H O U S A N D

World Catastrophe Reinsurance Market 2008



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Executive Summary

Catastrophe reinsurance rates declined for the second year in a row. Price competition intensified as a result of abundant capital, lower than average catastrophe losses, and strong overall profitability. But, reinsurance rates are projected to decrease at a slower pace in 2009 than in 2008, as reinsurers face earnings pressure from a number of sources.

According to the Guy Carpenter & Company, LLC (“Guy Carpenter”) World Rate on Line (ROL) Index, rates declined by 10 percent on average in 2008. This compares to a 6 percent drop in property-catastrophe ROL for the same period in 2007.

The reinsurance environment has been affected by several factors this year. Events such as the meltdown of the subprime mortgage market and the subsequent credit crunch have had a profound impact on the industry. Insurers and reinsurers have suffered few direct hits from the mortgage crisis; however, the subsequent fall in stock markets has put pressure on reinsurers to offset investment losses by maintaining solid underwriting results.

Contagion effects from the subprime fiasco have seeped into the regulatory environment and may lead to calls for increased capital. This may have an adverse impact on property-catastrophe markets.

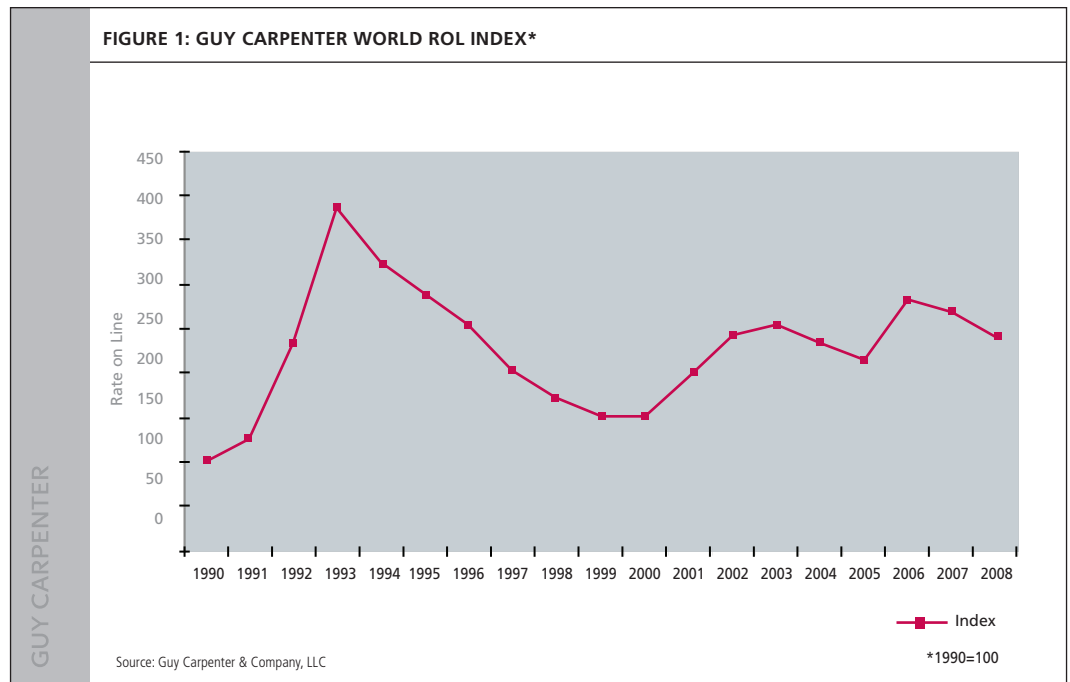
The convergence of capital and reinsurance markets continues. The reinsurance industry can no longer be viewed as a closed-loop system. The elasticity of capital supply has increased, and rapid inflows in response to mega-catastrophes may tame the excesses of hard markets and reduce market price swings.

Other developments could lead to substantial opportunities for primary carriers and reinsurers. Climate change may enable insurers to expand cover for “green” exposures on both the property and liability fronts. The development of models for the flood peril may widen the opportunities for insurers and reinsurers to cover more natural peril risks.

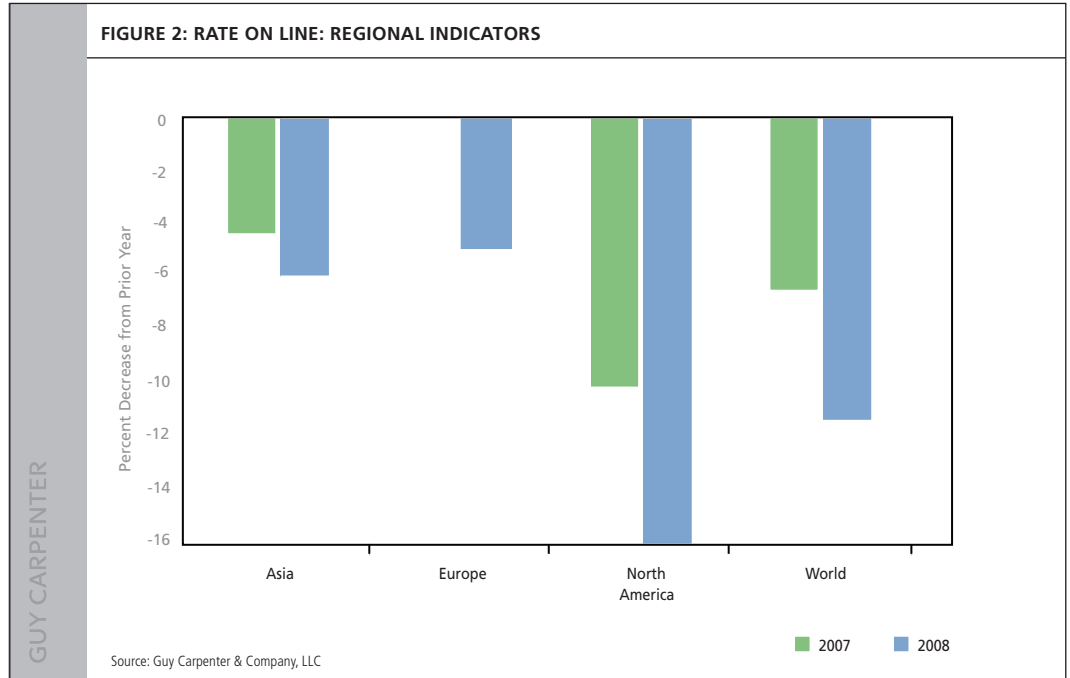
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Reinsurance Rates

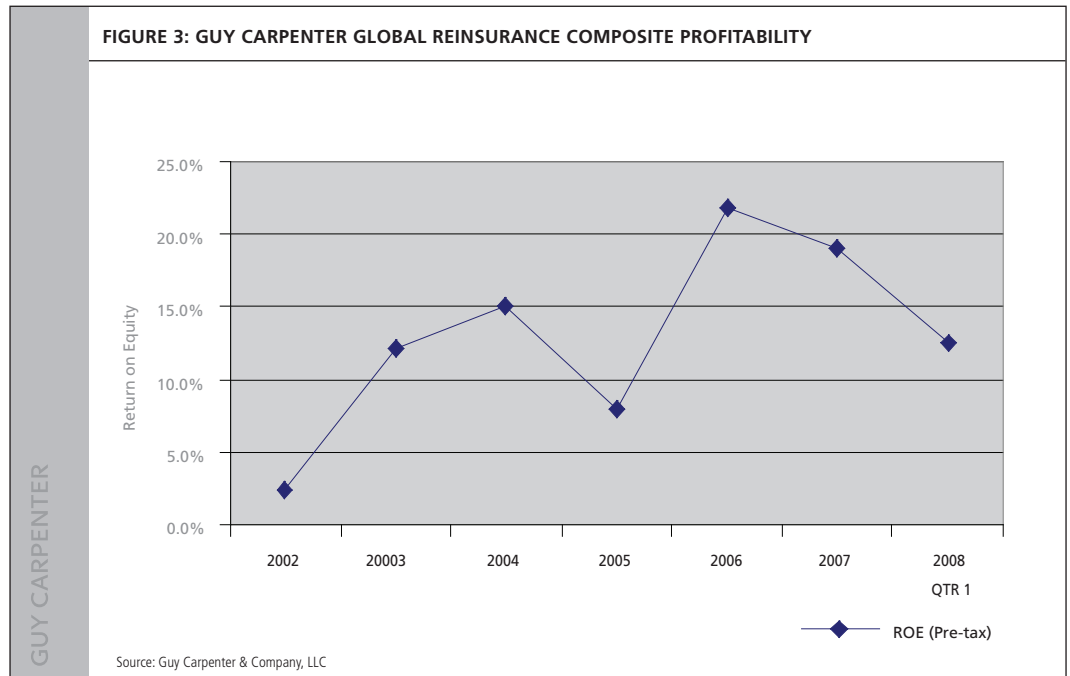
The Guy Carpenter World ROL Index declined by 10 percent on average at the July 1, 2008 renewal. This compares to a 6 percent drop in property-catastrophe ROL for the same period in 2007.



North America experienced the most substantial ROL drop, declining by 9 percent in 2007 and 16 percent in 2008. ROL in the Asia/Pacific and European regions declined at a slower pace than in North America. ROL dropped by 5 percent in 2008 in Europe and 6 percent in the Asia/Pacific region.

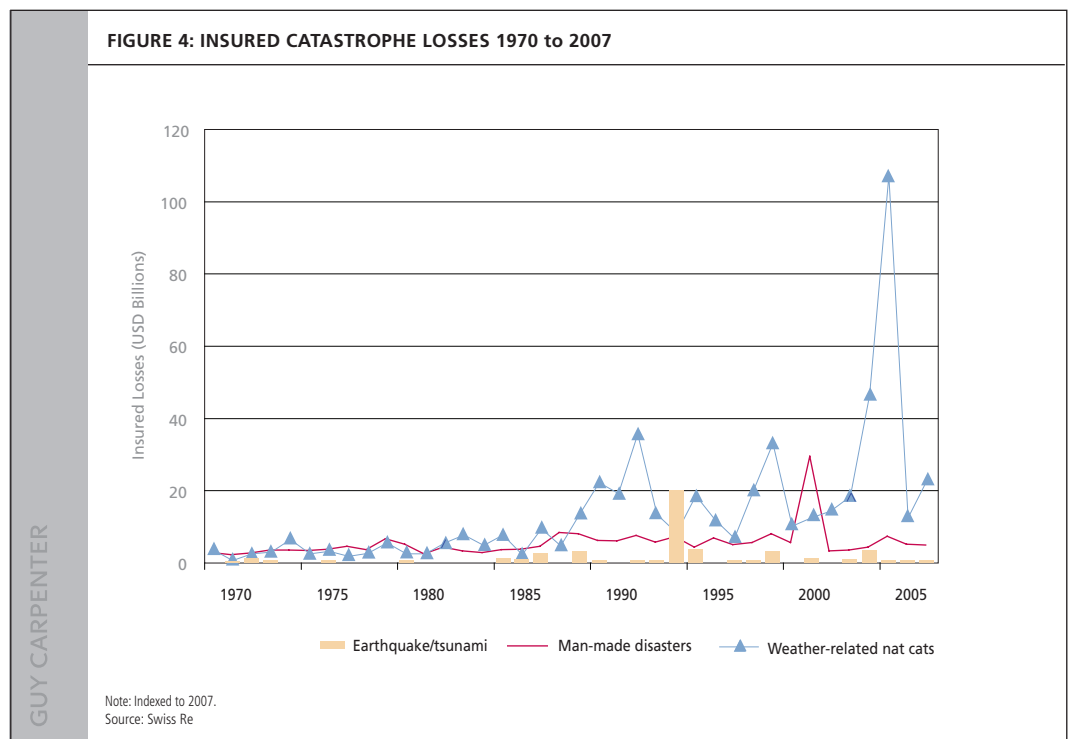


The decline in rates reflected the overall strong profitability of the reinsurance industry and the absence of a mega-catastrophe.



Reinsurer profitability, as measured by the pre-tax ROE for the Guy Carpenter Global Reinsurance Composite, peaked at 21.9 percent in 2006 and declined slightly to 19 percent in 2007. In the first quarter of 2008, the Guy Carpenter Global Reinsurance Composite ROE dropped to 12.5 percent. The industry is still in a strong profit position, though, as the combined ratio in the first quarter was still below 100.

As reported by Swiss Re, insured catastrophe losses for 2006 were USD16.8 billion and reached USD27.6 billion in 2007. While these figures are high compared to the past thirty years, they are significantly below the average of USD37 billion for the past ten years.



2009 Outlook

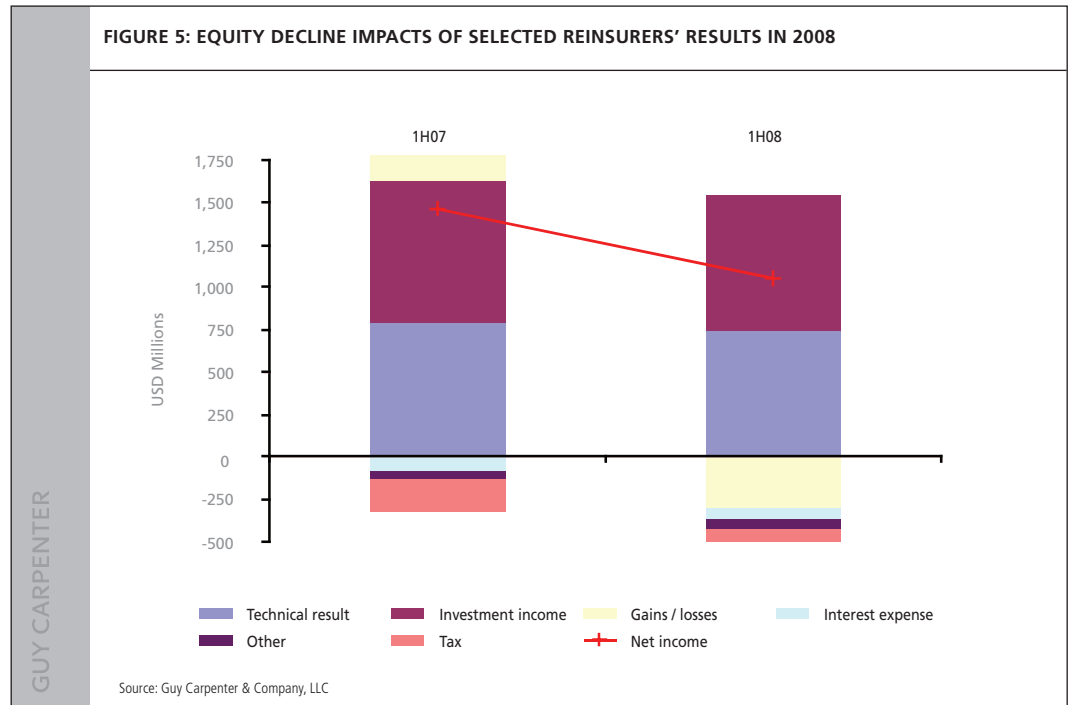
Rates are projected to be down for January 1, 2009 renewals, but the pace of decline will probably be slower than that of 2008.

While we have had no market-changing catastrophic events so far this year,¹ reinsurer nervousness has grown. They believe that the odds of a large loss have increased. Following the magnitude 5.4 earthquake in southern California, for example, there was increased interest in industry loss warranties (ILW), normally with trigger points of about USD20 billion.

¹ As of August 1, 2008.

Evidence of reinsurer discipline has been accumulating. The lower sign-down rate in Japan at April 1, 2008 renewals exemplifies this trend. Reinsurers withdrew capacity because they thought technical pricing was at or near the margin of profitability.

Stock valuations and investment earnings were off heavily, which implies greater pressure on reinsurers to maximize earnings from underwriting.



A recent study of 2008 first-half results shows that investment gains are down across much of the insurance and reinsurance industry. Investment gains for this group reached an aggregate USD98 million for the first half of 2007. For the same period in 2008, though, the group showed an aggregate investment loss of USD566.2 million. Net income is down 34 percent year-over-year. Underwriting results were supported by reserve releases in 2007, but these are a finite resource. Underwriters will not want to risk capital with under-priced business, as the credit crisis makes the availability of liquid capital less certain in a post-loss situation.

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The Reinsurance Environment

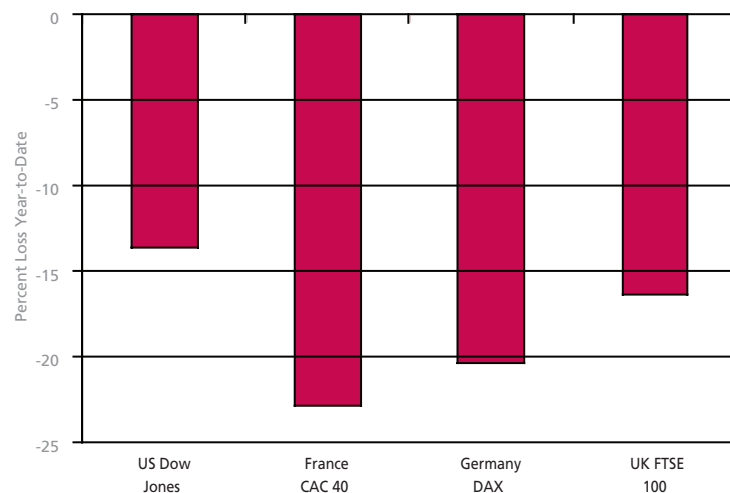
Several factors are influencing the direction of the catastrophe reinsurance market, including the ongoing global financial crisis, climate change, the evolution of the flood peril, and convergence in the financial services industry.

Contagion from the Global Financial Crisis

While economic swings tend to impact the insurance industry less than most others, insurers and reinsurers have still felt pain from the subprime meltdown, the subsequent credit crunch, and the global economic slowdown.

The impacts so far have been uneven. On the asset front, the majority of insurers and reinsurers have reported minimal direct exposure to mortgage-backed securities, while a few large global players have reported losses in the USD billions. Indirectly, the weak economy, compounded by fears of global financial collapse, is leading to a bear market in equities. This is putting pressure on reinsurer finances. Given the standard definition of a bear market as a 20 percent decline in price, both France and Germany are experiencing bear market conditions, which are also reflected in the UK FTSE 1000.

FIGURE 6: GLOBAL STOCK MARKETS UNDER PRESSURE (PERCENT LOSS YEAR-TO-DATE)



Credit enhancement policies, covering mortgages, and other forms of debt (such as municipal bonds and credit receivables) have been hit most severely in terms of credit exposure.

In the liability segment, directors and officers (D&O) covers have been triggered. Given the exclusions in D&O policies for fraudulent acts – as well as the general tenor of the courts towards the business judgment of senior management – losses to primary insurers are likely to be contained. Since primary carriers purchase a minimal amount of reinsurance cover for D&O, the impact on reinsurance markets is likely to be minor.

Errors and omissions (E&O) suits are of greater concern, particularly in the broader context of a global economic recession. With wider areas of financial loss, there probably will be more aggressive searches for offsets by alleging wrongdoing on the part of a growing list of potential defendants, including real estate agents, appraisers, builders, rating agencies, lawyers, and accountants.

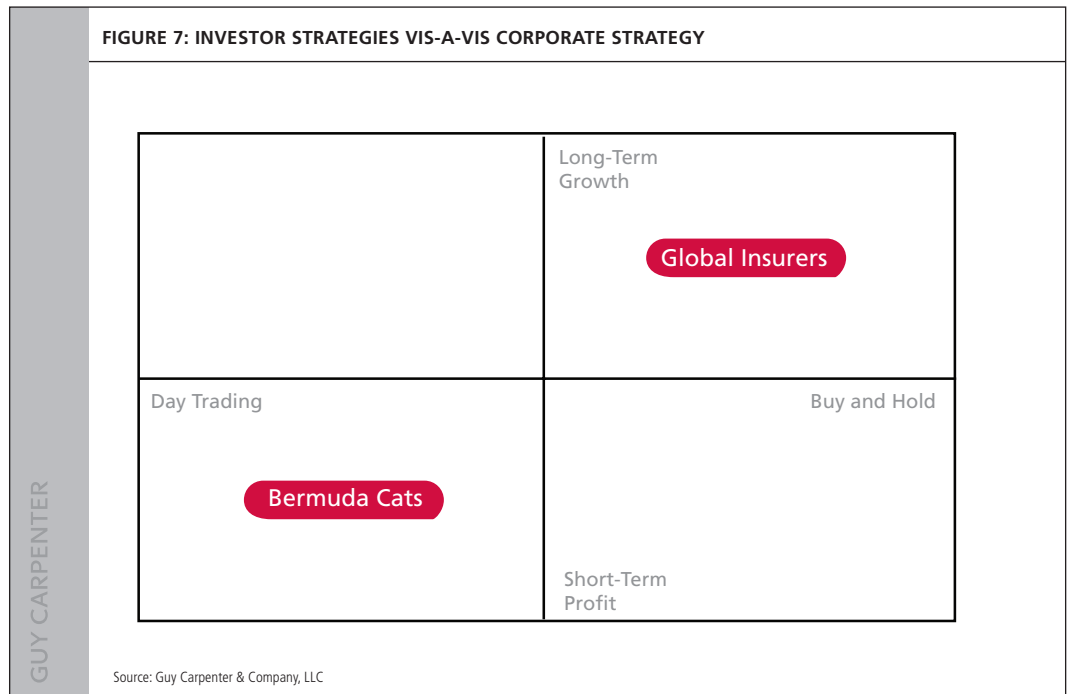
Plaintiff attorneys are likely to go where the money is, leading in many cases to an increased focus on defendants with significant insurance cover. While such activity is likely to trigger a substantial increase in E&O claims frequency, severity is anticipated to be low, as suits are more likely to be brought by individual homeowners rather than major corporations. Consequently, reinsurers are likely to face disproportionately lower losses than primary insurers.

The Regulatory Fallout

With the exception of the mono-line credit enhancement insurers, the insurance industry has fared well through the global credit crisis. But, it may still be subject to increased forms of scrutiny for capital adequacy. Regulators and legislators want to show the public that they have learned from the mistakes of the credit crisis and will not let another financial services industry sector fail as a result of lax regulatory oversight. The eventual fallout from such increased regulatory scrutiny is likely to be an increased cost of property-catastrophe reinsurance.

“You can’t have too much capital” is one of the lessons regulators will learn from the current financial crisis. As the debacle unfolded and major financial institutions failed, the clear differentiator between those who fell versus those who survived was the level of capital held by each institution relative to the risks faced.

Regulatory calls for increased levels of capital in the insurance and reinsurance industries are likely to have a differential impact on insurers and reinsurers, depending on their fundamental corporate goals. Like other industries, the corporate strategies of insurers and reinsurers span a spectrum from securing short-term, opportunistic profits to supporting long-term growth in value.



We expect that global insurers generally will find themselves in the upper right quadrant, emphasizing long-term growth through “buy and hold” investment approaches. They are in business for the long run, seeking to build value for shareholders through the prudent investment of capital. Their shareholders tend to have value-oriented investment philosophies. They are less interested in quarter-to-quarter movements in stock price, preferring that the company build a sustainable and profitable franchise. Consequently, global insurers tend to have more excess capital (capital above regulatory yardsticks) relative to the overall market.

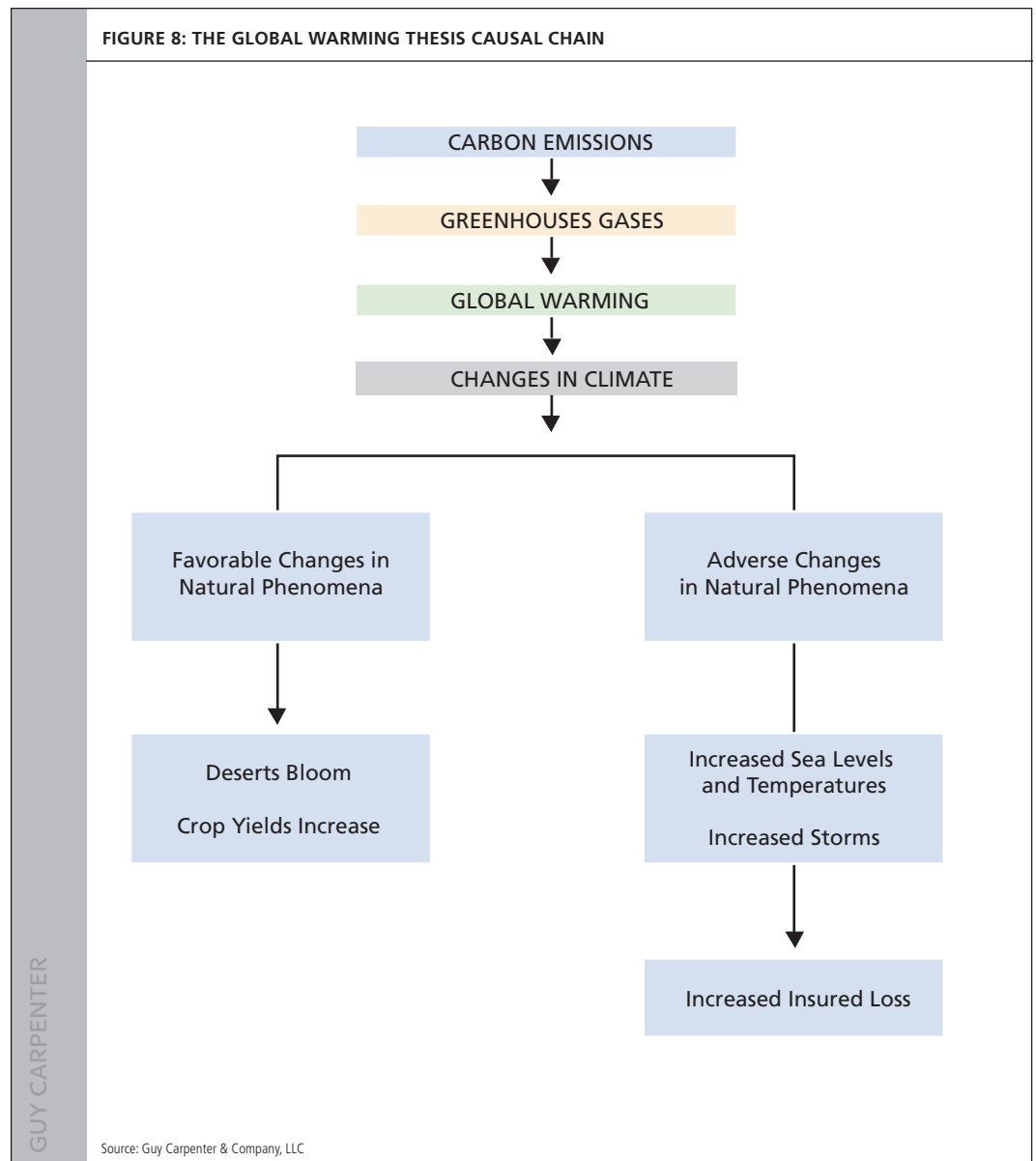
Bermuda-based catastrophe carriers usually fall into the lower left quadrant. Their management teams usually have a shorter-term, opportunistic focus. They return capital regularly when they do not see any profitable opportunities. While their investors are not necessarily “day traders,” a higher proportion of them are more likely to be interested in short-term returns than long-term growth in value. The remaining quadrants tend to represent unstable situations.

Since the insurance regulators’ response to the credit crisis likely will be to call for increased capital adequacy ratios, this stricture probably will fall more heavily on the leaner specialty catastrophe companies.

Climate Change

The debate over climate change has far-reaching implications for many industries, including insurance. Most fundamentally, it is argued that climate change will lead to more severe storms, which would result in higher costs of insurance and reinsurance in areas heavily exposed to tropical and winter storms.

The insurance mechanism, in general, is reactive to changes in the natural and societal worlds. As a trend toward higher or lower claims costs emerges, insurers incorporate the information into their underwriting and pricing models and policies. Society is thus alerted to the changes through these economic signals and can react accordingly. The role of insurance in the context of climate change is greatly reduced by the uncertainty and length of the causal chain.



From an insurance perspective, global warming starts with higher carbon emissions and leads to changes in climate, more adverse natural phenomena, and ultimately to insured losses. However, the links in the chain continue to be debated. Even with an assumed 80 percent chance for each link in the chain from carbon emissions through more insured losses, the final probability of increased storm activity drops below 20 percent.

Another issue is that property insurance policies are short-term, typically for one year, while global warming effects are long-term. For example, the Intergovernmental Panel on Climate Change (IPCC) reports that sea level is rising by 1.8 mm per year.² Even if there were perfect causation and definitive statistics on relevant insurance losses, there would be minute changes on a year-to-year basis in insured losses, thus implying minimum changes in insurance rates on an annual basis. It is perhaps worth noting that sea levels have risen at this pace since 1860, without the feared apocalyptic impact.³

Not everyone is waiting until the climate change debate is settled before making their moves. Some insurers and reinsurers are convinced that the causal chain is tight and hence believe that they should be charging far higher rates for property insurance in coastal areas now. This has led to some conflicts with insurance regulators, who are charged with ensuring that insurance rates are not excessive.

Others see climate change as a profit opportunity. Some insurers are marketing “green” policies, which would allow homeowners that lose their properties to rebuild in compliance with standards that promote environmentally friendly buildings. Lighting fixtures and electronics will be replaced by models that use energy more efficiently. The carbon footprint of a house can be reduced by the use of new types of heating and air conditioning systems, and updated plumbing fixtures can reduce water consumption.

According to a report by Guy Carpenter’s sister company Marsh, demand for green buildings is rising, replacing traditional construction. Corporations are increasingly aware of the financial and environmental advantages of sustainable building development. But, as with many emerging trends, the greening of corporate America poses both risks and rewards. For example, environmentally friendly roofs may keep buildings cooler, as well as reduce energy costs and carbon dioxide emissions, but they may also pose water damage and structural challenges. And who would want their sewer systems to be biodegradable!

The continued development of environmentally-sensitive construction is likely to lead to increased opportunities for insurers offering cover ranging from Builder’s Risk to Surety.

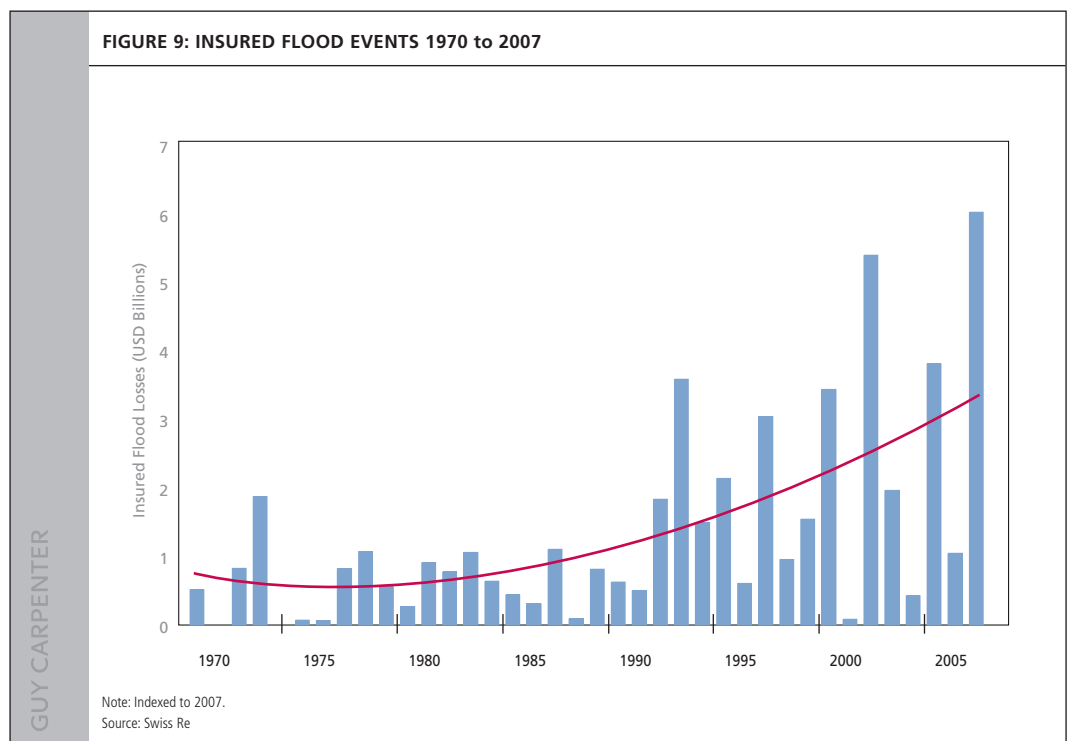
² IPCC, 2007. Climate Change 2007. Impacts, Adaptation and Vulnerability. See also: *Nature* 391, 474-476 (29 January 1998). J. M. Gregory & J. Oerlemans. Simulated future sea-level rise due to glacier melt based on regionally and seasonally resolved temperature changes.

³ CALIFORNIA COASTAL COMMISSION. *Overview of Sea Level Rise and Some Implications for Coastal California*. June 1, 2001.

Flood

The flood peril has a long and pedigreed history of risk management, yet there is disagreement on what constitutes a “flood,” whether it can be covered by insurance, and if so, whether it should be covered by the government, the private sector, or with a mix of private and public resources.

Record-breaking floods around the world – in countries as scattered as the UK, Myanmar, Australia, and the United States – have focused considerable attention on this peril. Insured flood losses have increased dramatically over the past few years.



In terms of the definition of a flood, much progress has been made in the United States on this issue following Hurricane Katrina in 2006. Court rulings at both the state and federal levels have clarified policy language on the flood peril. In general, the U.S. courts have supported the flood exclusion common to most U.S. property insurance policies.

The next issue concerns whether the peril is “insurable.” The most common argument against providing flood cover in the private sector is that there is adverse selection. This argument is most relevant in regard to river flooding. Only property owners on the banks of rivers will need this cover, and the limited distribution of risk will result in high premiums. Also, historically flood-prone regions tend to have above-average levels of low-income residents, further reducing the pool of potential participants. In this environment, the insurance mechanism breaks down.

Unlike river flooding, the frequency and severity of coastal flooding is similar to the frequency and severity of the wind peril. Coastal flooding affects a wider base of residents, many of whom have higher incomes. Thus, coastal flooding fits more closely than river flooding with the definition of an insurable risk. Since many countries have systems for covering flood risk, the debate over whether the risk is insurable is somewhat moot. Flood is covered under private sector policies in many countries, including the UK, Belgium, India, and Portugal. In some countries, such as France, Spain, and the United States, the peril is covered by government catastrophe pools.

The adverse selection argument is most frequently cited in the United States. Yet, the facts do not fully support the thesis. For example, the private sector has provided flood cover for commercial properties for many years. Furthermore, private insurance has been available to high-income residents that need cover beyond the limits provided by the National Flood Insurance Program (NFIP).

A major insurer in the United States is proposing a combined wind/flood policy. The new policy would fold flood coverage into a new augmented homeowners policy that would be available from private sector insurers. The flood part of the policy would match the NFIP on price, although the wind, theft, and fire portions of the property cover would not be subject to governmental price controls. The wind/flood policy would make claims much easier to adjust following a major storm. Further, it would avoid any of the legal arguments that followed Hurricane Katrina over whether damage to property was primarily caused by wind or flood.

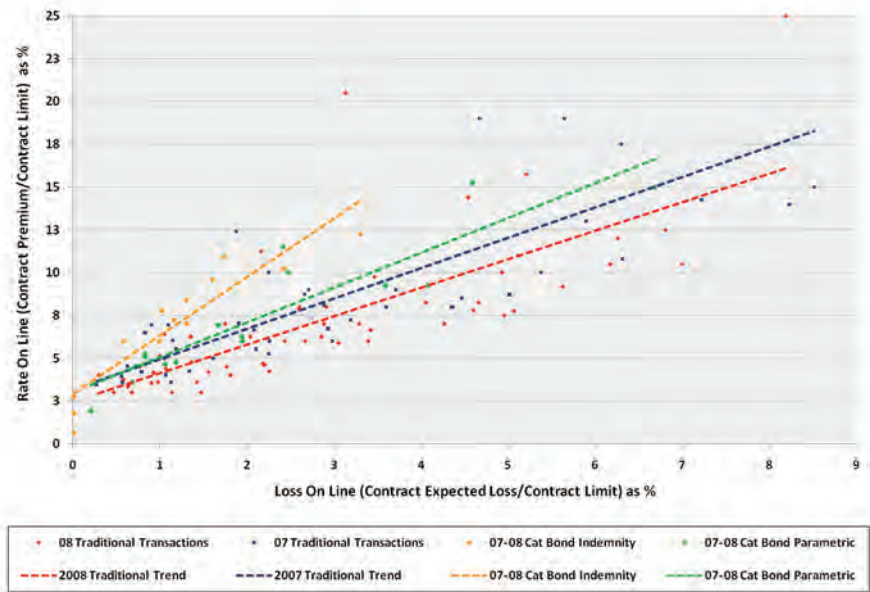
The creation of models to assist in assessing the risk profile of the flood peril will be critical to the development of flood programs around the world. Insofar as the flood risk can be modeled and reliable probabilistic loss curves created, insurers will be able to pool risks of similar profile and thus render the peril for the most part as an insurable risk.

Guy Carpenter has been quite active in this area and has created flood models for a number of countries, including Australia, Austria (i.e., the HORA initiative), the Czech Republic, Poland, and Slovakia. In 2008, Guy Carpenter created a flood model in conjunction with Lloyd’s to assess insurance exposure in the London area. The model provides potential flood extents for sea surge and river flooding for a series of 1-in-250 year scenarios, with and without the effects of breached flood defenses and Thames flood barrier failure.

Convergence of Financial Services

The direct participation of investors in insurance risks has evolved since the first catastrophe bond was issued in 1997. The chart shows model-based expected Loss on Line (LOL) and ROL for a large selection of catastrophe bonds and reinsurance programs. For a given LOL, indemnity bonds have been priced above non-indemnity bonds,⁴ which in turn are priced above traditional reinsurance. Recently, there has been more evidence of convergence.

FIGURE 10: PRICE COMPARISON: TRADITIONAL U.S. REGIONAL PLACEMENTS VS. CATASTROPHE BONDS (U.S. PERILS ONLY)



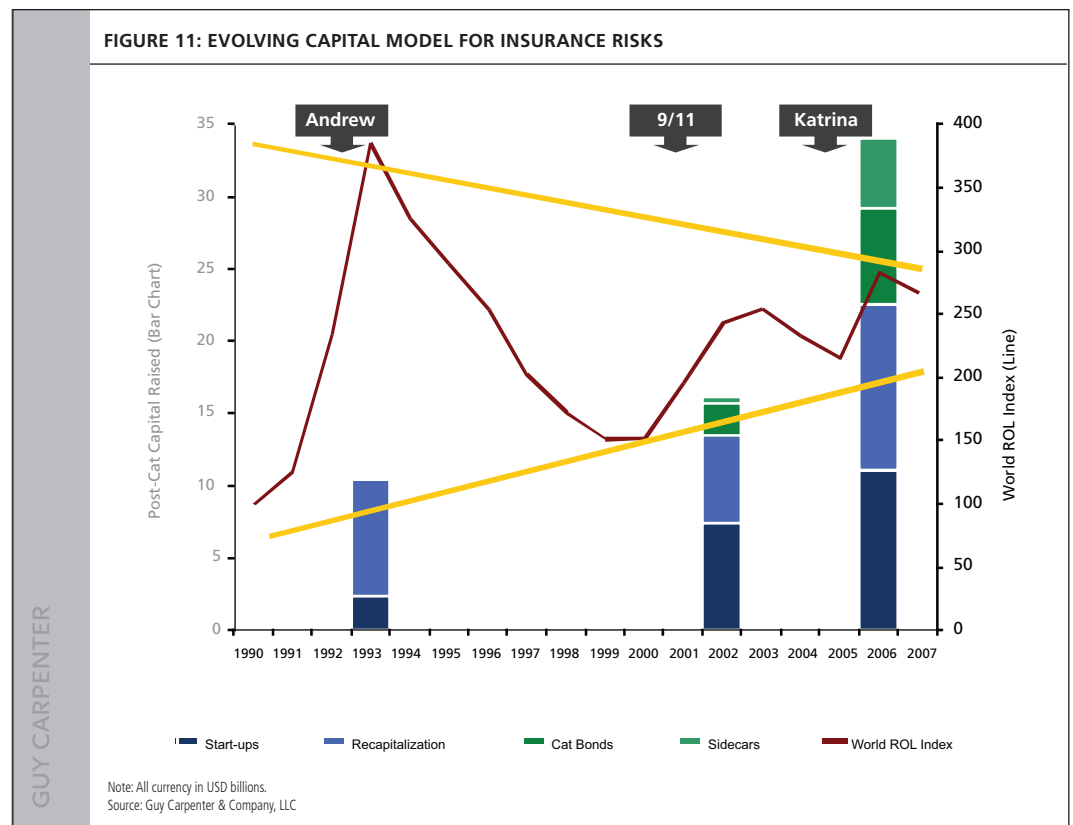
GUY CARPENTER

Source: Guy Carpenter & Co., LLC

4 Non-indemnity bonds rely on parametric-type triggers.

For placement where the expected LOL is less than 1 percent, capital market solutions are most attractive, as most reinsurers will charge minimum ROLs while capital markets can diversify. LOLs between 1 percent and 7 percent suggest convergence. The diagram shows a number of instances where catastrophe bonds are priced below traditional reinsurance. For LOLs higher than 7 percent, traditional markets dominate, due to the higher underwriting sophistication and knowledge required.

In addition to convergence of catastrophe bonds and reinsurance cover, the role played by capital markets in the reinsurance sector has evolved over the past 15 years.



Following the mega-catastrophes of Hurricane Andrew (1992), the September 11, 2001 terrorist attacks, and Hurricane Katrina (2006), reinsurance rates soared. In response to the higher prices, capital has flowed into the industry.

The amount coming into the market has increased after each mega-catastrophe. This probably reflects the increased knowledge of insurance markets by the investment community, the increased liquidity and depth of capital markets overall, and the growing size of the losses and concomitant opportunity.

The capital instruments of choice for entry into the reinsurance market have changed over the years. Following Hurricane Andrew, funding start-ups and recapitalizing existing players were common. After the events of September 11, 2001, catastrophe bonds played a major role. Finally, after Hurricane Katrina (as well as Hurricane Rita and Hurricane Wilma in the same year), sidecars became more prominent. Given that sidecars offer the most flexible manner for opportunistic capital to participate in hard markets, we can anticipate a wider role for such instruments following the next megacatastrophe.

It would appear that the speed and size of capital inflows have tempered the cyclical swings in the industry. While many have wished for a gentler cycle, the potential down-side for traditional “buy and hold” reinsurers is the curtailment of the post-loss payback period.

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