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# Global Reinsurance Highlights

2011 Edition



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different



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AN INVITATION TO  
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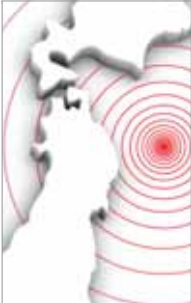
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# Global Reinsurance Highlights

## 2011 Edition



**5 Foreword**  
All Eyes On The Hurricane Season

**6 Soundbites**

**8 Outlook**  
Outlook On Global Reinsurance Industry Remains Stable As Multiple Catastrophes Fail To Erode Capital Surplus

**17 Life**  
As The Market Shrinks, Life Reinsurers Look To New Products For Growth

**23 Japan Earthquake**  
Re/Insurers Continue To Tally The Claims Stemming From The Japanese Earthquake And Tsunami

**30 Catastrophe Models**  
S&P Assessment Of Reinsurers' ERM Places High Importance on Understanding Of Catastrophe Models

**33 Reinsurance Peer Analysis:**  
Shift To Short-tailed Lines Contributes To Peak Capital Levels And Strong Operating Performance In Recent Years

**40 Return On Equity**  
For Some Reinsurers, Returns May Not Be Enough To Cover Their Cost Of Equity

**46 Top 40 Global Reinsurance Groups**

**48 Global Reinsurers By Country**

**66 ERM**  
Consistent Application Of ERM Helps Global Reinsurers Maintain Their Financial Strength Under Adverse Conditions

**73 Regulatory Update**  
Rating Implications For G-SIFI-Designated Insurers

**77 ILS**  
Insurance-Linked Securitization: Navigating Through A Turbulent Start To 2011

**80 European Insurance Outlook:**  
European Insurance Credit Trends: Despite Strong Balance Sheets, Insurers Are Uneasy About The Future

**84 Asia Pacific**  
Asia-Pacific Reinsurers Start To Push Through Higher Prices In Wake Of Regional Catastrophes

**90 Insurance Ratings Definitions**

**92 Contacts**

# All Eyes On The Hurricane Season

By Rob Jones

As we go to press this year, all eyes are on Hurricane Irene as she heads towards the north Atlantic coastline. Recent hurricane seasons have brought misery to millions but have been relatively 'kind' to the reinsurance industry. Partly as a result, the market has been on a softening path for half a decade. However, the first half of 2011 has heaped record-breaking losses for the industry on top of human tragedy. Although such was the strength of opening balance sheets, the overall softening trajectory has merely plateaued. The aftermath of Irene and her successors this year will set the scene for 2012 renewals, with the potential for a broad-based hardening market if the season wreaks havoc in the way 2005 did.

Our lead article "Outlook On Global Reinsurance Industry Remains Stable As Multiple Catastrophes Fail To Erode Capital Surplus" explains our stable ratings outlook in the face of the above issues. Life reinsurance provides valuable diversification benefits to global reinsurers but the sub-sector faces very different challenges from its property casualty counterpart. "As The Market Shrinks, Life Reinsurers Look To New Products For Growth" tells us why.

Global reinsurers continue to lead the way in terms of ERM capabilities and we believe that our assessments have been broadly borne out in the first half of 2011. "Consistent Application Of ERM Helps Global Reinsurers Maintain Their Financial Strength Under Adverse Conditions" provides an update on reinsurers' progress.

As the claims estimates continue to escalate from the earthquake centered on Tohoku, "Re/Insurers Continue To Tally The Claims Stemming From The Japanese Earthquake And Tsunami" assesses the impact on insurers and reinsurers. Partly as a result of events this year, catastrophe modeling has been in the limelight and also because of key vendor catastrophe model updates. "Insurers Catastrophe Risk Management Gains Strength From Clear Understanding Of Catastrophe Models" looks at the role models play and how we evaluate them. This year's events and model updates have also had a significant impact on our ratings of securitizations. "Insurance-Linked Securitization: Navigating Through A Turbulent Start To 2011" describes that impact.

This year we provide a sector peer analysis which highlights some of the trends we have observed: "Reinsurer Peer Analysis: Shift To Short-tailed Lines Contributes To Peak Capital Levels And Strong Operating Performance In Recent Years". We also consider how the sector has performed in terms of shareholder returns in "For Some Reinsurers, Returns May Not Be Enough To Cover Their Cost Of Equity"

Management teams from the world's largest reinsurance groups have expressed concerns about the FSB's potential designation of certain reinsurers as G-SIFIs. "Rating Implications For G-SIFI-Designated Insurers" describes why we believe that insurers and reinsurers pose limited systemic risk, but explains the potential ratings impact on such insurers.

Our regional articles this year focus on Europe and Asia-Pacific. The aftermath of the financial crisis, culminating most recently in heightened sovereign risk, together with the specter of Solvency II, IFRS Phase II and G-SIFI designation are playing on the minds of Europe's insurers. "European Insurance Credit Trends: Despite Strong Balance Sheets Insurers Are Uneasy About The Future" explains why. "Asia-Pacific Reinsurers Start To Push Through Higher Prices In Wake Of Regional Catastrophes" looks at the primary markets and reinsurance markets in Asia-Pacific after this year's events.

We think that Global Reinsurance Highlights captures the key issues facing reinsurer management. We hope that you enjoy the 2011 edition and would welcome your feedback on possible enhancements for future years. ■

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## Soundbites

### Outlook On Global Reinsurance Industry Remains Stable As Multiple Catastrophes Fail To Erode Capital Surplus

Dennis Sugrue, Laline Carvalho and Mark Coleman



- *Standard & Poor's is maintaining its stable outlook on the sector.*
- *The sector produced a return on revenue of 10% and a combined ratio of 95.4% in 2010. This compares to 15% and 89.9%, respectively, in 2009, and was similar to the seven-year averages of 12% and 96%.*
- *We continue to view capitalization as a strength for the industry, which still has an excess relative to ratings despite the first-half losses.*
- *We estimate that the same peer group still has a capital redundancy of around \$35 billion to \$40 billion.*
- *Substantial reserve releases benefited average combined ratios by about 6% since 2006.*
- *We expect earnings to be weak in 2011.*

### As The Market Shrinks, Life Reinsurers Look To New Products For Growth

Robert A Hafner and Simon Ashworth



- *The uncertain implications of emerging accounting and solvency standards around the globe... are keeping the industry from venturing too far from familiar, traditional risks.*
- *The continuing contraction of traditional cession rates and volumes in the U.S. and the emergence of Solvency II in Europe, which could be a watershed for the European life reinsurance market, are limiting the long-term growth prospects of the life reinsurance sector.*

### Re/Insurers Continue To Tally The Claims Stemming From The Japanese Earthquake And Tsunami

Taufik Gharib and Reina Tanaka



- *Reinsurers ... will likely generate little more than break-even results for the full year.*
- *Such a dramatic rise in reinsurance costs will hurt Japanese insurers' earnings.*
- *Japanese insurers are taking a very controlled stance toward underwriting earthquake extended coverage.*

### Insurer Catastrophe Risk Management Gains Strength From Clear Understanding Of Catastrophe Models

Miroslav Petkov, Dennis Sugrue and Mark Coleman



- *A slavish adherence to catastrophe models exemplifies poor management of catastrophe risk.*
- *The recent update to RMS v.11 has caused some consternation in the market.*
- *In our analysis, we take particular note of how insurers allow for model, parameter, and data uncertainty. If an insurer relies fully on the modeled results without making explicit or implicit allowances for imperfections in the model, it may understate or overstate its exposure to catastrophe risk.*

### Reinsurance Peer Analysis: Shift to Short-tailed Lines Contributes to Peak Capital Levels and Strong Operating Performance in Recent Years

Dennis Sugrue and Trupti Kulkarni (not pictured)



- *Since 2007, the non-life sector has gradually shifted towards underwriting more short-tail lines.*
- *As exposure to short-tail lines of business has increased, companies have increased capital levels to support the potentially more volatile business.*
- *Shift to shorter-tailed lines has helped companies to extract more profit than they would have achieved under their old business mixes.*



## For Some Reinsurers, Returns May Not Be Enough To Cover Their Cost Of Equity

Laline Carvalho and Jason S Porter



- We believe that the lack of differentiation between the class of 2001 and the longer-standing reinsurers' valuations could indicate that investors are skeptical about whether the class of 2001 reinsurers will be able to sustain their relatively stronger operating performance.
- Reinsurers, ultimately, are at risk of losing support from the capital markets.
- The average ROE for these companies...was a modest 9.9%...about equal to these companies' estimated cost of equity capital.
- The sector reported an average ROE of 12.2% and a modest estimated average return in excess of the cost of equity capital of about 1.6%.

## Consistent Application Of ERM Helps Global Reinsurers Maintain Their Financial Strength Under Adverse Conditions

Miroslav Petkov and Laura Santori



- Approval of their own internal capital models should allow reinsurers to adopt more efficient capital management relative to their specific risk profiles.
- We view management's ongoing commitment to ERM as fundamental to keeping potential losses within a reinsurer's defined risk tolerance, while at the same time maximizing the returns from risk.

## Rating Implications For G-SIFI-Designated Insurers

Rob Jones and Rodney A Clark



- We don't expect to see many insurers designated as G-SIFIs. Few lines of business in insurance produce amplification of risk because most insurance products are only loosely correlated with economic volatility, or not correlated at all.
- We currently recognize the likelihood of the provision of sufficient and timely extraordinary governmental support to enhance our insurer ratings only in exceptional cases.

## Insurance-Linked Securitization: Navigating Through A Turbulent Start To 2011

Maren Josefs, Gary Martucci and Cameron Heath



- New ILS issuance slowed considerably in second-quarter (Q2) 2011 compared with previous years.
- We expect natural catastrophe bonds to regain their attraction for issuers.
- There is likely to be a need for more protection around the time of the Jan. 1, 2012 renewals.

## European Insurance Credit Trends: Despite Strong Balance Sheets, Insurers Are Uneasy About The Future

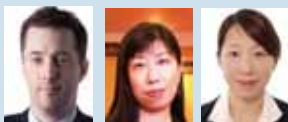
Rob Jones and Karin Clemens



- In our view, price adequacy in most lines of business is still softening or flat in most European markets.
- We believe insurers are concerned about the amount of time they will have to execute Solvency II's still-uncertain requirements.

## Asia-Pacific Reinsurers Start To Push Through Higher Prices In Wake Of Regional Catastrophes

Mark Legge (pictured), Paul Clarkson, Andy Chang, Reina Tanaka (pictured), Ayako Nakajima, Michael Vine and Connie Wong (pictured)



- The extent of the earthquake damage has caused a reap-praisal of earthquake risk pricing.



# Outlook On Global Reinsurance Industry Remains Stable As Multiple Catastrophes Fail To Erode Capital Surplus

By Dennis Sugrue, Laline Carvalho and Mark Coleman

The first half of 2011, like the same period in 2010, saw large catastrophe losses across the reinsurance industry. Losses from earthquakes, tornadoes, and a tropical cyclone amounted to more than \$60 billion in insured losses. Although this is well above the historical mean for the first half of the year, extremely strong capitalization and strong enterprise risk management (ERM) capabilities enabled the industry as a whole to withstand the losses.

Standard & Poor's is maintaining its stable outlook on the sector. However, as in 2010, our view of reinsurers' earnings prospects is diverse. We expect to see clear winners and losers toward the end of the year and anticipate that most, if not all, reinsurers could earn less than we had originally forecast for 2011.

Price rises have been uneven, affecting only some business lines and regions. The increases that we have seen have not been enough to turn the whole market and in some cases have been inadequate for the risks assumed. In our opinion, returns on some longer-tailed lines of business remain uneconomic, and an upward shock to inflation or interest rates could put companies' balance sheets at risk.

### Factors Affecting The Outlook

We continue to view capitalization as a strength for the industry, which still has an excess relative to ratings despite the first-half losses. In addition, 80% of rated reinsurance groups included in our GRH survey continue to enjoy a stable outlook. Indeed, we have a nega-

tive outlook of only 14% of ratings, even in the current operating environment. Although we acknowledge that financial strength may come under downward pressure, our stable outlook on the sector reflects our assessment of the following positive factors:

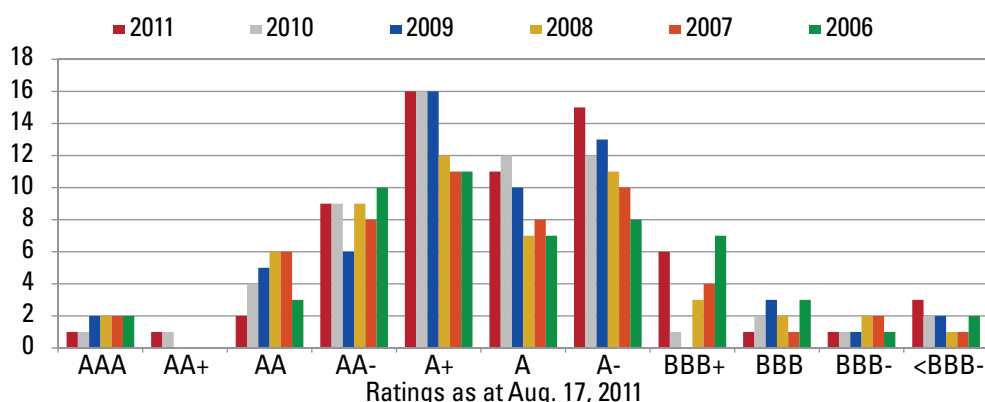
- Capitalization is typically a ratings strength. Our analysis indicates that industrywide capital was at peak levels entering 2011, and experienced only limited deterioration following the first-half losses.
- Enterprise risk management capabilities are high; reinsurers remain among the leading practitioners in the industry, in our view.
- Underwriting performance has been strong over the five years from 2006 to 2010.
- Profits continue to emerge on prior underwriting years.
- Reinsurance premium rates have shown some signs of increasing following the Q1 2011 losses, although the full effect on pricing has yet to emerge
- Investments are typically focused on high-quality, short-duration, liquid assets.

**Table 1: Large Catastrophe Insured Losses In The First Half of 2011**

| Date   | Event                       | Location    | Estimated insured loss (mil. \$) |
|--------|-----------------------------|-------------|----------------------------------|
| Mar-11 | Great East Japan earthquake | Japan       | c.30,000                         |
| Feb-11 | Christchurch earthquake     | New Zealand | >10,000                          |
| Apr-11 | Tuscaloosa tornadoes        | U.S.        | 5,050                            |
| May-11 | Joplin tornadoes            | U.S.        | 4,900                            |
| Jan-11 | Australia floods            | Australia   | 2,550                            |
| Feb-11 | Cyclone Yasi                | Australia   | 1,000                            |

Source: Munich Reinsurance Co. Natural Catastrophe Service.

**Chart 1: Reinsurer Ratings For The Past Five Years**



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# Outlook

These strengths are partially offset by our assessment of the following weaknesses:

- Recent catastrophe events will significantly reduce earnings for the sector in 2011.
- Price rises for the remainder of 2011 are likely to be uneven across lines of business and geographic regions.
- Interest rates remain low and macroeconomic factors could continue to put pressure on overall earnings adequacy.

***The sector produced a return on revenue of 10% and a combined ratio of 95.4% in 2010. This compares to 15% and 89.9%, respectively, in 2009, and was similar to the seven-year averages of 12% and 96%.***

- Reserve releases have supported reinsurers' results for the past five years, a trend we view as unsustainable and diminishing.
- Excess capital positions continue to put pressure on return on equity performance metrics.
- The industry faces a range of challenges, in particular the increasing frequency and severity of catastrophe events. Given that reinsurers' valuations are below historical averages, we consider that some risk is associated with investors' willingness to recapitalize reinsurers in the wake of another major event.

### **Early 2010 Saw High Losses, But A Benign Wind Season Proved Fears That Capacity Was Exceeded Unfounded**

The sector entered 2010 with aggregate capital at near-peak levels. Concerns about pricing and profit-

ability were mounting. It suffered several large losses during the first half of the year; there were nine catastrophe events, including large earthquakes in Haiti and Chile.

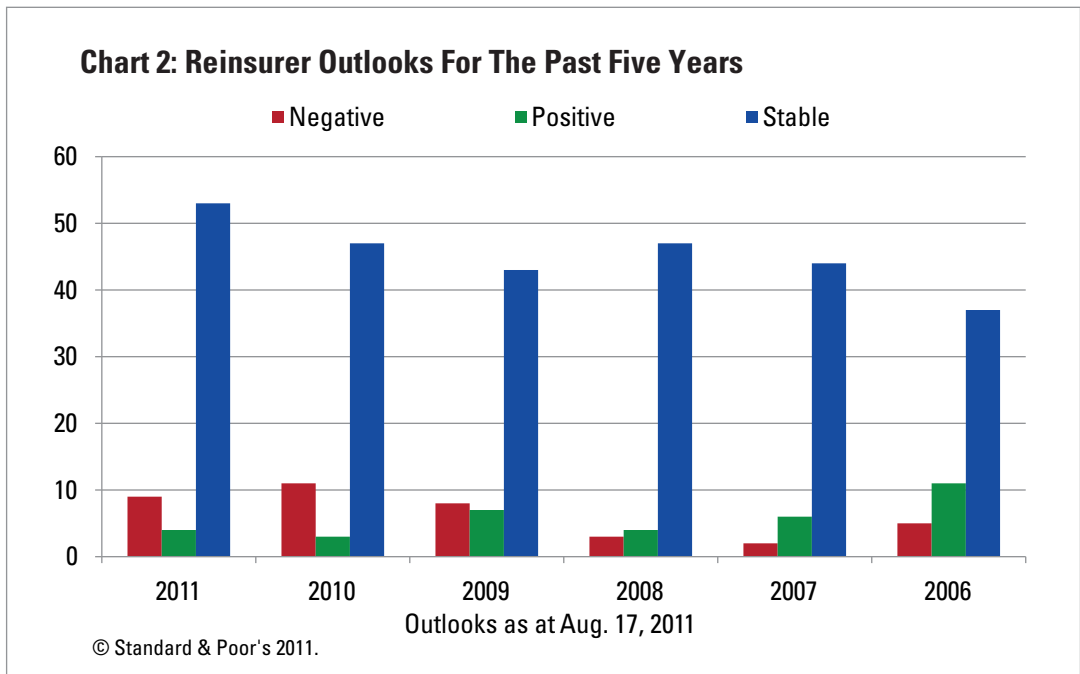
As a result, the industry incurred around \$20 billion in insured losses. Midway through the year, earnings prospects for the full year seemed uninspiring. While the market was well-positioned from a capital standpoint, and stood ready to capitalize on any hardening of rates, experts were predicting that the 2010 wind season would see above-average activity.

Ultimately, while the North Atlantic hurricane season was an active one—there were 19 named storms—the insurance industry avoided major losses because none of the storms made landfall in heavily insured areas. While there were large losses stemming from floods in Australia and a large earthquake in New Zealand in the second half of 2010, the industry reported strong results, despite the inauspicious start to the year.

We estimate that the top 40 reinsurance groups account for more than 90% of global reinsurance premiums between them. Our analysis of their results shows that the sector produced a return on revenue of 10% and a combined ratio of 95.4% in 2010. This compares to 15% and 89.9%, respectively, in 2009, and was similar to the seven-year averages of 12% and 96%.

### **A Twice-Told Tale: Early 2011 Mirrors The Events Of 2010**

Entering 2011, reinsurers found themselves in a very similar position to that they had faced 12 months before. Pricing in catastrophe-affected lines was up following the losses in 2010, but not by enough to turn the entire market. The industry still had excess capital; the aggregate amount reached a new peak level of \$321



billion. The top 40 global reinsurers' shareholders' equity base increased by \$28 billion, or 10% compared to 2009 (note that the 2009 shareholders' equity figure includes a simple combination of shareholders' equity for NIPPONKOA Insurance Co. Ltd. and Mitsui Sumitomo Insurance Co. Ltd.; these entities merged in 2010).

We have analyzed data from our risk-based capital model on a peer group of 26 of the largest non-life reinsurers, primarily from the U.K., Europe, and North America (including the U.S. and Bermuda). Based on our results, we estimate that this group had an excess capital position, relative to their respective ratings, of \$40 billion-\$45 billion entering 2011. This fundamental balance-sheet strength is supported by the highly liquid and high investment-grade fixed-income strategies that dominate asset allocations in the sector. It underpins most of our ratings in the sector and our stable outlook. However, having a large capital base when many lines are suffering from soft pricing and interest rates remain low puts pressure on a firm's underlying profitability.

The ground shook again in the first quarter of 2011, this time in New Zealand and Japan. These earthquakes were two of the three most costly insured losses ever experienced. Munich Reinsurance Co. has estimated that the \$60 billion in insured loss from 355 events made the first half of the year one of the most costly on record. We estimate that in the first quarter, the peer group incurred a net loss of about \$5.6 billion. However, such was the strength of the industry's excess capital position that this loss only modestly diluted it. In fact, the second quarter saw positive net income, in aggregate, for this group, and thus we estimate that the same peer group still has a capital

redundancy of between \$35 billion and \$40 billion.

Following Japan's Great East Earthquake, we saw speculation in the industry that the event would be large enough to turn pricing in the market, across all lines and geographies. However, the only material rate increases we have seen were in loss-affected areas and lines. Pricing in U.S. property lines rose modestly as a result of the release of updated versions of the vendor catastrophe models. In most other lines, the effect has been limited to halting the decrease in pricing that has been typical for the last few years.

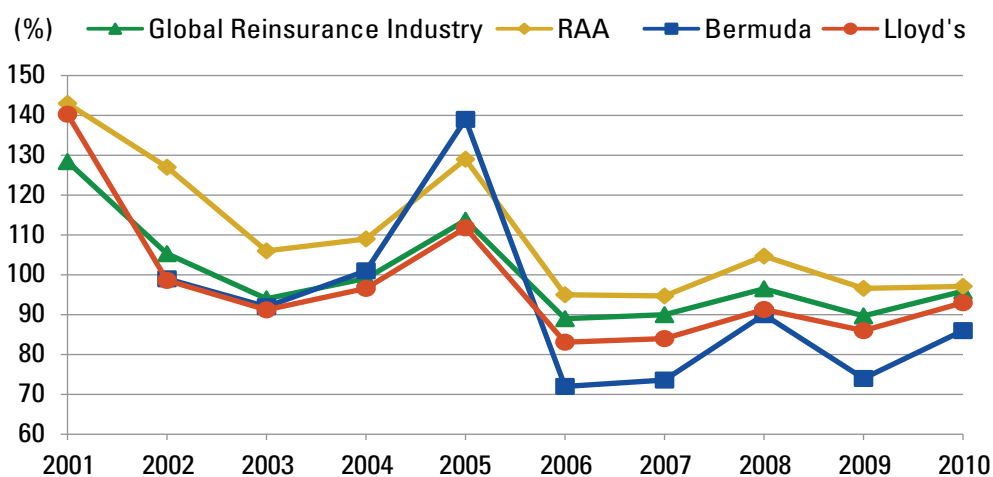
In our opinion, because the event had limited impact on the sector's capital base, it has caused only muted price increases, or none at all, in many other lines. Unless the market experiences a major capital-depleting event, either through a very large catastrophe loss or widespread reserve strengthening in the long-tailed lines of business, prices could resume their decline in the future, further constraining earnings potential.

### Operating Performance Is Still Strong, But Increased Cost Of Capital Could Put Margins Under Pressure

The reinsurance sector has exhibited strong returns over the past cycle. Bermudian reinsurers have outperformed the market in terms of combined ratio and return on revenue (ROR). The Bermudian industry's seven-year average combined ratio stands at 91% and its ROR at 23%, compared to global industry figures of 96% and 12%, respectively. However, Bermuda's results have been more volatile over this time period (see charts 3 and 4).

The Lloyd's market has shown strong and stable results across the cycle, generating an average com-

**Chart 3: Industry Trends – Non-Life Combined Ratio**



Source--Company filings and surveys. RAA--Reinsurance Association of America.

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## Outlook

bined ratio of 92%. Results for purely U.S. reinsurers, as listed by the Reinsurance Association of America, are weaker over the period—their combined ratio is 104% and their ROR is 12%. That said, many of these companies are subsidiaries of larger groups, and cede much of their business back to the parent.

Returns on equity (ROE) have also been strong for the sector. Our analysis of large global reinsurers shows that this group generated an average return on equity of 15.2% over the past five years. Reinsurers have on average covered their cost of equity capital over the last 10 years; again, Bermuda's results are the strongest. However, we have cautioned that return adequacy is coming under increased pressure, and with cost of capital increasing over time, reinsurer's margins are eroding (see "For Some Reinsurers, Returns May Not Be Enough To Cover Their Cost Of Equity").

### Reserve Releases Have Been Boosting Results For Five Years

Our analysis shows that substantial reserve releases benefited average combined ratios by about 6% since 2006. In 2010, reserve releases made an overall, average positive contribution to companies' combined ratios of 9%, with a range of 1%-33%.

We therefore take this into account when considering their strong operating results. The trend for reserve releases continued through the first quarter of 2011, and we would expect to see further releases this year as reinsurers seek to mitigate the impact of catastrophe losses on results.

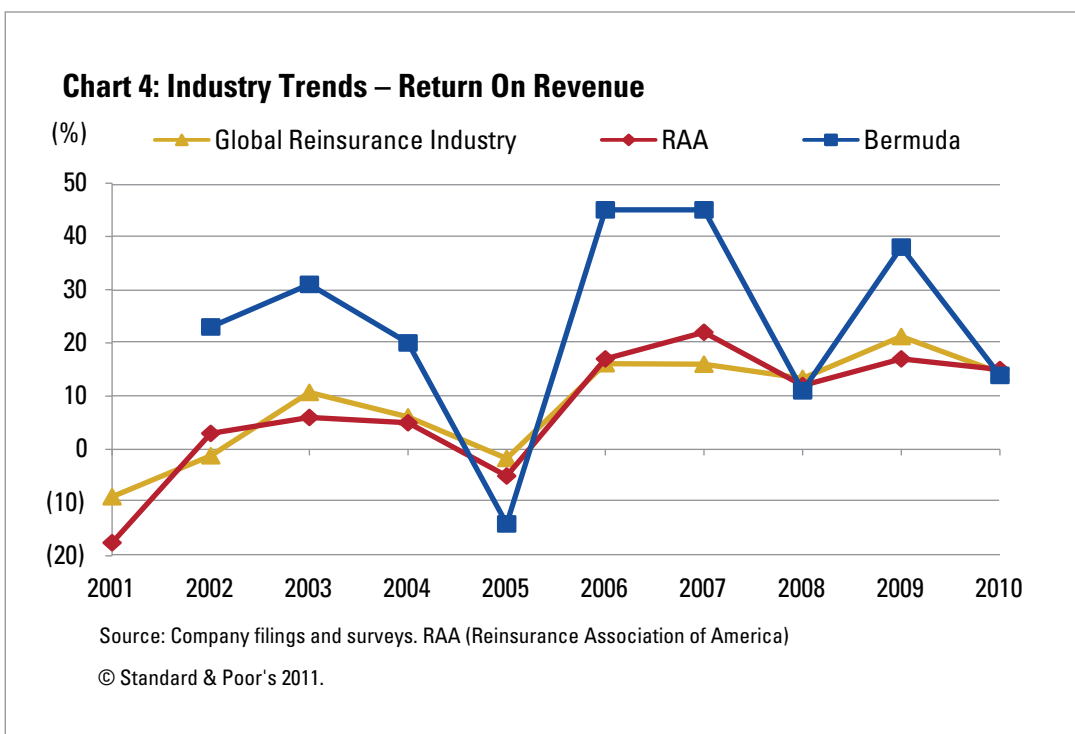
The U.S. non-life primary sector is a major source of business for reinsurers and has also seen reserve

releases boost reported results in recent years. In the U.S., as in other regions, pricing has been declining for years and loss costs are on the rise. In our view, this may cause companies to strengthen their reserves in coming years. We have already seen evidence of this in respect of the 2008 and 2009 years.

Primary insurers have been steadily releasing reserves since 2006 (see "Reserve Adequacy For The Long-Tail Commercial Lines Insurance Sector Will Continue To Deteriorate," published on June 7, 2011). During 2009, excluding mortgage and financial guaranty insurance, the U.S. industry released \$12 billion from prior-year reserves, which is at least less than the \$15 billion it released in 2008.

The pattern of releases seen in the U.S. in recent years is strikingly similar to the one experienced in the late 1990s. Massive releases supported earnings during that period. However, this ushered in a seven-year period of significant reserve strengthening across many lines, which coincided with a turn for the better in pricing in the early 2000s. We expect that reserve margins from older business will decline substantially, and that the 2007 to 2009 accident years will need to be strengthened in the coming years. We anticipate that loss costs will continue to climb. If reinsurance pricing stays flat, or resumes its decline, and we see a step change in inflation then reinsurers' balance sheets could be at risk.

Long-tailed lines have performed worse than short-tailed lines over time; 2008 provided the only year of releases since 2000. These lines are especially vulnerable to interest rate and inflation shocks. Last year, we cautioned that the global recession had not removed



the risk of inflation to reinsurers' balance sheets, merely deferred it. Today, despite dampened GDP expectations for most economies, the threat of a step change in inflation remains a concern for the wider economy, and thus the insurance market. Benchmark inflation in the U.K., Europe, the U.S., China and other emerging markets is exceeding the inflation targets set by banks such as the Bank of England, European Central Bank, U.S. Federal Reserve, and Bank of China.

Many companies are using their investment portfolios to protect their balance sheets from inflation through various investment strategies, including variable yield securities, inflation-linked securities, and real assets. Companies are also using duration as a hedge for inflation. They take an asset duration position that is materially shorter than the duration of their liabilities. If interest rates rise, they can reinvest the shorter-duration assets as they mature and lock in higher rates. This helps to mitigate the impact of any increase in loss costs or claims.

Our study indicates that the average asset duration for this peer group is 3.2 years; average liability duration is 3.6 years. This indicates that most players are not prepared to take duration risk and expose themselves further to the risk of inflation shock. However, some companies have elected to take some duration mismatch, or have maintained longer-duration asset portfolios.

The sector's asset portfolios can typically be characterized as highly liquid and of very strong credit quality. We estimate that at the end of 2010, around 85% of reinsurers' portfolios consisted of bonds and cash and cash equivalents; these asset classes are typically highly liquid. The proportion has increased slightly since 2007, when it was 80%. We also estimate

that the average credit rating on the assets in those portfolios is in the 'AA' range.

### Catastrophes Are Becoming More Common And More Costly

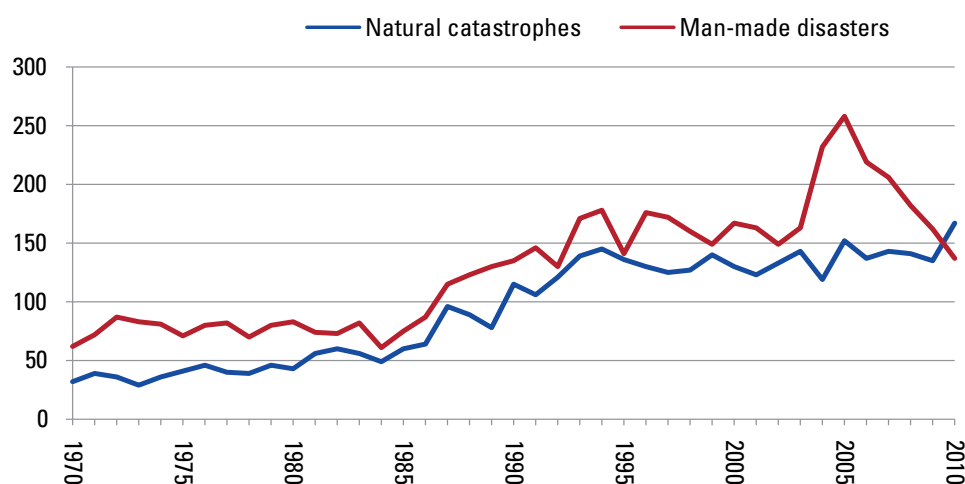
Many experts expect 2011 to be another active hurricane season; the number of named storms is predicted to be above average. Natural catastrophic activity has been on the rise for the past 30 years. According to Swiss Re, there were 167 natural catastrophes in 2010, well above the historical average of 94. Worldwide insurance penetration has increased since 1970, and insured values have also been rising. Therefore, the losses insurers experience following these events have steadily climbed. Of the 20 largest natural catastrophe events since 1970, 12 occurred within the past 10 years. This includes eight of the 10 most costly events (see charts 5 and 6).

### Reinsurers May Have To Work To Attract Investors

Reinsurers' prospects for strong earnings in 2011 experienced a material setback during the first half of the year. Given that experts predict an active U.S. wind season, if another major event makes a substantial dent in industry capital, will investors be there to replenish any lost capacity?

Reinsurers' valuations are currently below historical norms. According to Guy Carpenter, the sector average price-to-book ratio is around 0.9x, well below the historical mean of 1.3x. In a snapshot of current pricing, it is apparent that many publicly traded reinsurers have price-to-book ratios below this average. There is a cluster at around 0.75x–0.8x. The discounted valuations of these stocks raise questions about the

**Chart 5: Natural Catastrophes And Man-Made Disasters, 1970-2010**



Source: Swiss Re Sigma No. 1/2011.

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## Outlook

level of investor interest in reinsurers. In our view, they suggest that investors may be reluctant to reinvest in reinsurers should the need arise.

Reinsurers can use alternate routes to access capital if a major loss occurs, for example, insurance-linked securities (ILS), sidecars, catastrophe bonds (cat bonds), or industry-loss warranties (ILWs) (see “Insurance-Linked Securitization: Navigating Through A Turbulent Start to 2011”). Sidecars

*The reinsurance industry has navigated a difficult few years remarkably well, in our view.*

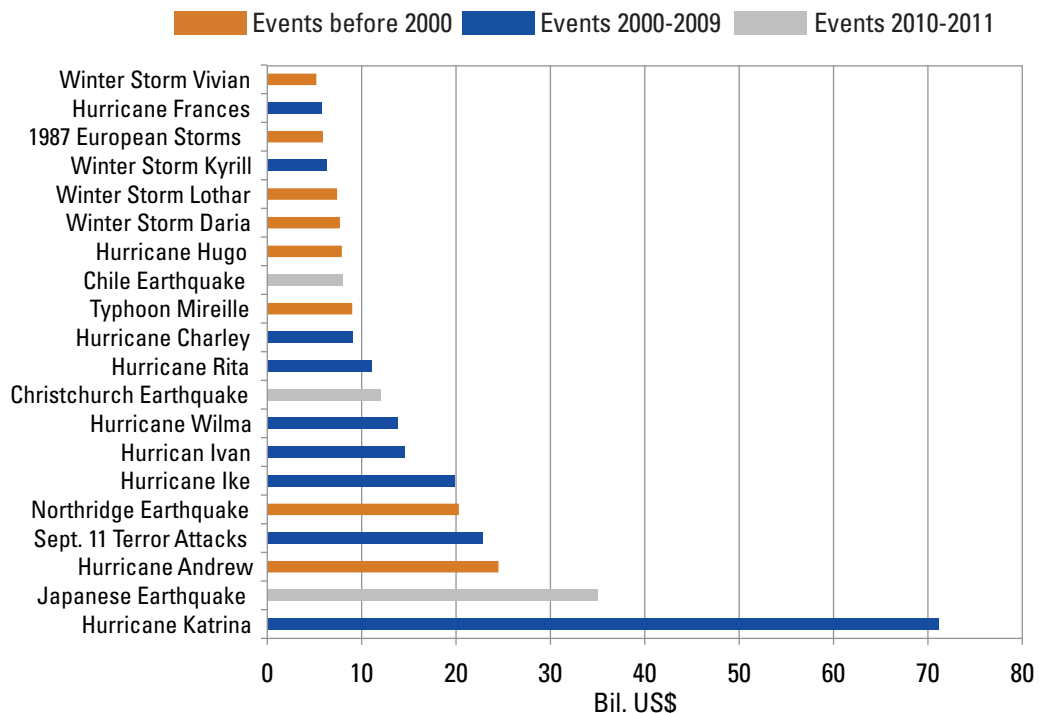
are special-purpose reinsurers established to provide underwriting capacity to a specific reinsurer. They offer insurers access to capacity, and are very quick and easy to set up and exit for investors and issuers. Investors benefit from these arrangements as the lock-up period is pre-defined, and usually ranges from one to three years. In the wake of the earthquake in Japan in March, three sidecars were established, and many companies and investors are discussing whether to arrange others.

Interest in ILW has also increased as companies scramble for protection in the second half of the year. Pricing on ILW has increased by as much as 25% in some areas.

We have seen relatively little cat bond issuance in 2011. Risk Management Solutions Inc. released its new Version 11.0 Atlantic Hurricane Model (RMS v.11) recently and most issuers are still assessing the impact of the new model on exposure, attachment points, and cat bond pricing. However, in the wake of another large event in 2011, we would expect to see a spike in cat bond issuance, similar to that witnessed in 2006 following Hurricane Katrina. Like sidecars, cat bonds are relatively quick to put in place, offer investors a quick turnaround on their funds, and do not lock them in for indefinite periods.

We have long argued that these alternative products are complementary to traditional reinsurance, and do not currently pose a material threat to the reinsurance business model. However, we recognize that these more-flexible forms of capital and investment could draw investment that might otherwise go to traditional reinsurance. Most offer investors an investment that is more predictable and easier to exit than starting a new entity from scratch or reinvesting in a company which has been impaired by catastrophe losses.

**Chart 6: Largest Insured Losses Since 1970**



\* All estimates by Swiss Re. All data, except for the Japanese, Chilean, and Christchurch earthquakes, is indexed to 2009 U.S. dollars.

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### Reinsurers' Credit Quality Remains Strong, But Vulnerable To Shocks

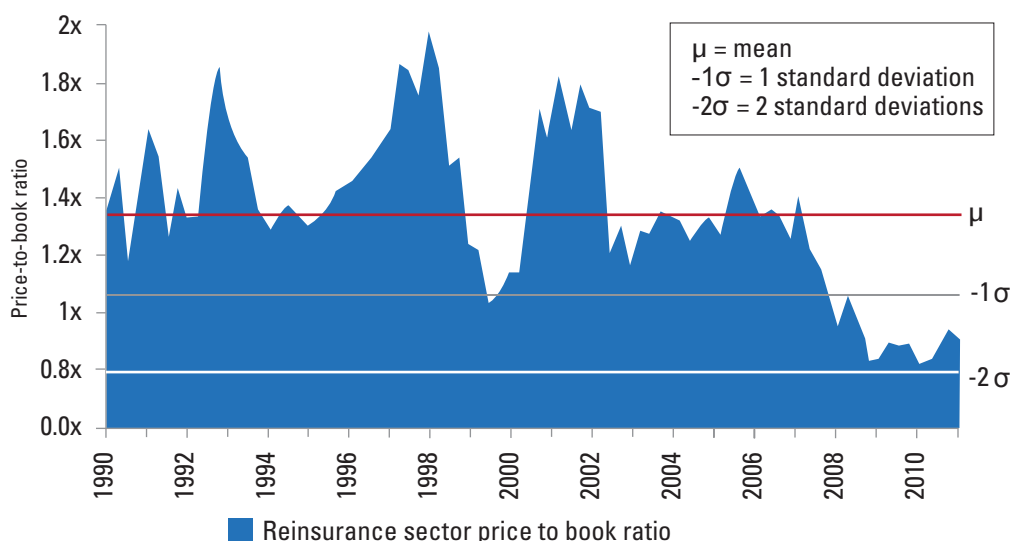
The reinsurance industry has navigated a difficult few years remarkably well, in our view. Many companies emerged from the financial crisis in a position of relative strength and many generated strong operating returns in 2010, an active year for catastrophes. After one of the most costly first halves in memory, the sector appears to be well positioned to weather further storms or earthquakes in the second half of 2011. However there may

be some outliers where we could take negative rating actions if we see a material capital depletion below rating levels, or deficiencies in risk management.

The industry still finds itself with excess capital and its risk management systems have proved resilient in the face of economic asset and liability stresses. Strong asset portfolios could mitigate the effect of the risk of inflation shock, and are positioned to generate income for the sector if and when interest rates begin to rise.

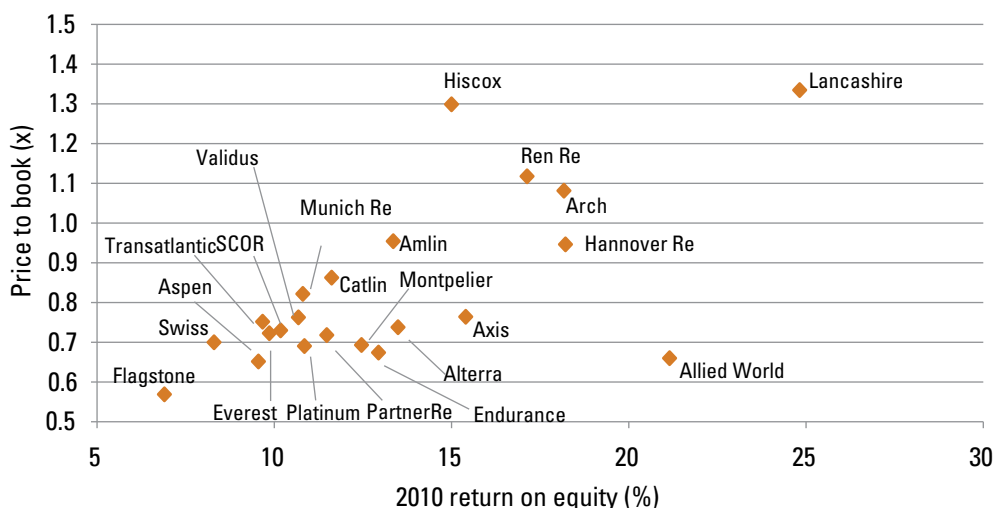
However, the market faces many familiar problems.

**Chart 7: Global Reinsurance Sector Valuation Chart**



Source date: Bloomberg © Guy Carpenter 2011.

**Chart 8: Reinsurers' Price-To-Book Snapshot As Of July 31, 2011**



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## Outlook

Pricing has stopped declining in most lines of business, but rates have not turned sufficiently to enable pricing to harden across the entire market. We do not anticipate a market-turning increase in rates over the next 12 months, unless a catastrophe occurs that has a significant impact on industry capital, or we see widespread reserve strengthening actions across a wide portion of the market.

***We expect earnings to be weak in 2011. Catastrophe activity in the first half will likely push combined ratios to about 105%-110% and returns on equity to around 5%.***

We expect earnings to be weak in 2011. Catastrophe activity in the first half will likely push combined ratios to about 105%-110% and returns on equity to around 5%. In the longer term, the sector's earnings adequacy remains under pressure: rates remain soft and firms are not generating much investment income because of low interest rates. The threat of inflation continues to loom. If there is a widespread increase in loss costs increase in all lines of business, it will put reserve adequacy at risk, particularly for companies with a longer-tailed focus.

Most players in the market have very strong balance sheets, and adequate levels of reinsurance or retrocessional protection for the remainder of the year. Were it not for this, combined with our view of the strength of reinsurers' enterprise risk management capabilities and systems, we would most likely be revising our outlook on the sector to negative.

In our view, another major catastrophe or significant, widespread reserve strengthening could eventually turn the pricing environment. Should either or both of these events occur, we would review the sector for outliers, and could revise our outlook on the sector to negative. We could also revise the sector outlook to negative if prices, which had stopped declining, start to fall again, causing earnings for the sector suffer. ■

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# As The Market Shrinks, Life Reinsurers Look To New Products For Growth

By Robert A Hafner and Simon Ashworth

The life reinsurance market isn't what it used to be. The size of the market has been shrinking since 2003, and we don't expect it to bounce back anytime soon, primarily because of increasing risk retention by direct insurers and evolving regulations. As life reinsurers vie for a larger piece of a shrinking pie, we expect most to increasingly turn to less well-understood and riskier, nontraditional products to sustain long-term growth.



The shrinking traditional life reinsurance market—particularly in the U.S., which is the largest mortality insurance market globally—contributed to three significant acquisitions in the past year:

- SCOR SE (SCOR; A/Positive/--) purchased AEGON N.V.'s (AEGON; A-/Negative/A2) Transamerica Re unit. This acquisition materially expands SCOR's global footprint and reduces the number of major competitors in the U.S.
- The two largest North American based retrocessionaires—Sun Life Financial Inc. (A/Stable/A-1) and Manulife Financial Corp. (A-/Stable/--)—decided to sell their life retrocession operations. A significant factor in these two transactions was the increasingly limited market growth opportunity in traditional mortality risks because cedants and reinsurers are retaining more of the risk.

Standard & Poor's Ratings Services' opinion is that these three transactions are a clear signal that long-term growth prospects for life reinsurers will likely depend increasingly on two factors:

- Developing opportunities in less well-understood, nontraditional risks, such as longevity and long-term care.
- Expansion globally in less-developed insurance markets or by further consolidation in the sector. Among life reinsurers in the U.S. and Europe, further consolidation seems less likely. This is because additional consolidation would open the door wider for aspiring and new entrants seeking

# Life Re

to satisfy cedants' need for a diversified panel of reinsurers to avoid excessively concentrated exposure to any single life reinsurer.

We continue to believe that life reinsurers weathered the global economic downturn relatively well. In fact, in our opinion, most of these companies emerged from the recession with strong balance sheets, strong operating performance, and capital that supports their risk profiles and the ratings. We remain keenly interested in how effectively life reinsurers will deploy their capital resources, as the robustness of the economic recovery in some of their key markets remains uncertain. Life reinsurers' success will hinge on their ability to manage the risk/reward tradeoffs of emerging opportunities strategically and employ effective risk management as they take on less-familiar risks. For the moment, the uncertain implications of emerging accounting and solvency standards around the globe for both direct companies and life reinsurers are keeping the industry from venturing too far from familiar, traditional risks.

## Relative Strengths Of Leading Global Life Reinsurers

There continues to be only a handful of distinctly global life reinsurers, namely Hannover Rueckversicherung AG (Hannover Re; AA-/Stable/-), Munich Reinsurance Co. (Munich Re; AA-/Stable/-), RGA Reinsurance Co. (RGA; AA/Stable/-), SCOR, and Swiss Reinsurance Co. Ltd. (Swiss Re; A+/Positive/A-1). SCOR's acquisition of AEGON's Transamerica Re operations solidifies its standing within this group by giving it a material presence in the largest mortality reinsurance market globally—the U.S.—where SCOR had only a modest presence. This transaction vaults SCOR past Hannover Re in the

U.S. market, where Hannover Re is gradually capturing new business market share organically by building on the infrastructure it obtained with its acquisition of most of Scottish Re Group Ltd.'s (Scottish Re; not rated) ING-related life reinsurance business.

Except for RGA, these global life reinsurers are composite life/non-life organizations. RGA remains the only noncomposite, life-only reinsurance group with a meaningful and expanding international footprint. Because many property/casualty focused groups crave greater diversification, market participants have often cited RGA as an attractive possible acquisition target.

We believe that life reinsurance continues to provide more stable earnings streams over the long term than nonlife reinsurance. Primarily because of this and the largely uncorrelated relationship between life and non-life earnings, we also generally believe that life reinsurance operations contribute favorably to the financial strength of composite reinsurance groups.

Here, we briefly discuss how we believe these five global life reinsurers compare based on several aspects of two of the major rating factors we use to assess their contribution to financial strength:

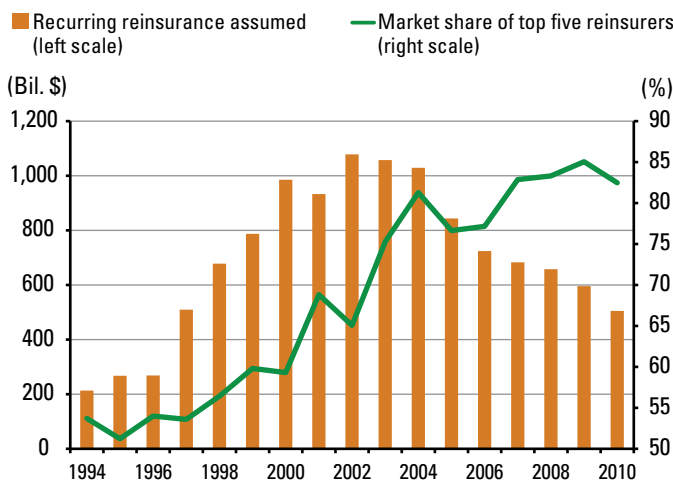
- Competitive position.
- Operating performance.

Within the remainder of this section, when we refer to composite groups by name, we are referring only to their life reinsurance operations. The tier categories used below represent our view of the relative status of each company based only on competitive position and operating performance and without reference to any particular measure of separation. In addition, our ratings on each composite group reflect our analysis of all of our eight major ratings factors considering the consolidated life and nonlife operations collectively.

We rank Swiss Re in the highest tier because it has the most favorable overall combined competitive position and operating performance among these global life reinsurers. This is because of its efficiencies of scale and extensive global footprint with a material presence in multiple global markets, including the U.S. and the U.K. In addition, Swiss Re has diversified exposures and sources of earnings including a strong foundation of mortality risks that add stability, innovation leadership in various insurance-linked securities, and market-leading new business margins.

Munich Re and RGA rank closely together in the second tier and somewhat less favorably than Swiss Re. Within this tier, we view Munich Re's competitive position more favorably than RGA's. Munich Re has considerably greater scale than RGA, with a broader and more balanced geographic diversification, including the strongest foothold into Asia. Munich Re is also the global market leader in terms of written premiums. However, Munich Re does not have the same prominence in certain key markets—such as the U.S.—as do RGA and Swiss Re or in the U.K. compared with

**Chart 1: U.S. Ordinary Recurring Reinsurance Assumed**



© Standard & Poor's 2011.

Swiss Re. On the other hand, we view more favorably RGA's very consistent and very strong operating performance, which stems primarily from its focus on mortality risks.

RGA's competitive advantages are nonetheless substantial and very favorable. In both the U.S. (the largest life reinsurance market globally) and in Canada, RGA has the top market share of new recurring life reinsurance, positions Swiss Re and Munich Re formerly held. RGA achieved these positions with steady disciplined performance through sector repricing in the early part of the last decade and market-leading facultative underwriting capabilities. An extensive facultative underwriting capability has proven to be a critical competitive advantage for the established market leaders. The strength of its value proposition is reflected in the fact that in the last two Flaspöhler Research Group surveys of North American life reinsurance cedants conducted in 2009 and 2011, RGA was recognized as the best overall reinsurer. RGA also has material and expanding operations in select Asia-Pacific countries, the U.K., and elsewhere. However, RGA derives about 60% of its earnings from the U.S. market and 20% from Canada, so it is distinctly less globally diversified than both Swiss Re and Munich Re.

We view Hannover Re as ranking in the third tier, reflecting a well-diversified book across geographies and risk types. We believe that Hannover Re's acquisition of the ING-related life reinsurance business from Scottish Re in 2009 offers significant growth and diversification potential in the U.S. Their successful exploitation of the know-how and customer base in the U.S. to increase market share to 10%-15% nevertheless remains challenging. As of year-end 2010 its share of new recurring reinsurance was less than 5%. However, we view the composite group as maintaining a highly disciplined approach to all of its markets, including life reinsurance, to ensure the

quality of its book and to maintain appropriate margins. Hannover Re broke into the top five in the 2011 North American Flaspöhler survey, indicating that it is building good relationships with cedants and has favorable prospects for increasing its market share. In the 2010 Asia-Pacific Flaspöhler survey, Hannover Re ranked fifth-best overall.

Prior to completion of the Transamerica Re acquisition, we view SCOR as ranking in the fourth tier, reflecting its much more limited global footprint, with earnings concentrated in the EU market approaching 75% of global life reinsurance results. SCOR's U.S. recurring premium market share has hovered at about 3% for the last decade. Its acquisition of Transamerica Re will materially expand SCOR's presence in this key market provided it can retain to most of Transamerica Re's market share by executing adroitly on the transaction and improving client perceptions of the combined organization under its leadership. Transamerica Re's U.S. recurring premium market share exceeded 20% from 2006-2008 compared with just 12% in 2004. We believe this growth was partially achieved through price competition. In 2009 and 2010, Transamerica Re's U.S. market share declined to 15%, primarily reflecting uncertainty around its ownership and future strategy. We view SCOR's and Transamerica Re's operating performance as strong but not quite of the same level as peers in higher tiers. The combination of SCOR and Transamerica Re does, however, have the potential to eventually join Hannover Re in the third tier if the combination proves to be greater than the sum of its parts.

### Solvency II Transitional Measures Could Delay Its Full Impact

The planned implementation of Solvency II—the new regulatory framework in Europe that is based on economic principles—is contributing to the acceleration

**Table 1: Flaspöhler Research Group Life Reinsurance Effectiveness Survey Results\***

—Life reinsurer voted Best Overall by regional survey\*—

| 2011 North American Survey                         | 2010 Europe Survey              | 2010 Asia/Pacific Survey                     |
|--|---------------------------------|--|
| RGA  | Munich Re                       | Gen Re                                       |
| —Others in the top five—                           |                                 |  |
| 2011 North American Survey<br>(alphabetical order) | 2010 Europe Survey (rank order) | 2010 Asia/<br>Pacific Survey<br>(rank order) |
| Generali USA                                       | Gen Re                          | Munich Re                                    |
| Hannover Life Re                                   | Swiss Re                        | Swiss Re                                     |
| Munich American                                    | Scor Global Life                | RGA  |
| Swiss Re America                                   | Hannover Life Re                | Hannover Life Re                             |

\*From the Flaspöhler Research Group biennial studies of perceptions about life reinsurers and related issues within these regional markets.

of insurers' and reinsurers' efforts to better optimize their risk/return profiles based primarily on economic principles. We believe that the economic impact will increasingly become the dominant consideration driving insurers' decisions to purchase reinsurance compared with historical transactions that were frequently motivated by the need to obtain regulatory (in Europe, Solvency I) capital relief. We believe that a greater emphasis on pure economic considerations will likely lead direct insurers to retain more of their mortality risk exposure to diversify their risk profile and optimize their risk-adjusted earnings. As a consequence, this will add to the increasing pressure globally for life reinsurers to develop new profitable solutions for non-traditional risks.

***We believe that these low life cession rates and volumes in the U.S. are a more or less permanent paradigm change and will likely trend even lower during the next two years.***

However, the proposed transitional arrangements for implementing Solvency II that were announced in January 2011, if adopted, might mean a deferral of the full impact of Solvency II on both the insurance and the reinsurance industry. (See "Solvency II: Omnibus II Appears To Mitigate Potential Disruption Of The European Insurance Market," Jan. 31, 2011, Ratings-Direct.) The full impact of Solvency II will depend on the final details and timeframes of the rules adopted, including any transitional arrangements.

We believe the introduction of Solvency II could result in consolidation in the European primary insurance market. This would affect the dynamics of the life reinsurance market, as the larger insurers will have more capacity and willingness to retain risks, depending on the capital charges and diversification benefits available. This potential consolidation and the generation of greater scale advantages could reduce the overall reinsurance demand in the medium to long term and put pressure on life reinsurance margins. Specifically, the economic principles underlying Solvency II could encourage greater mortality risk retention by direct writers than currently exists, but this could depend on how aggressively or conservatively reinsurers compete for business based on price. Overly aggressive competition by life reinsurers for a piece of a shrinking pie would adversely affect their financial strength.

In the short term there could be increased demand for reinsurance as it is likely to be one of the main options available to insurers that need to improve capital positions under Solvency II. This would likely boost life reinsurance business opportunities, and many reinsurers have already set up special teams to exploit these opportunities.

The timing and magnitude of how Solvency II will affect the insurance markets is uncertain and depends on several key factors including: the final calibration of the Solvency II regulations; approval of internal models by

national regulators; the role of the standard model; and the adoption of final transitional arrangements; which could result in Solvency II being fully implemented over an extended period of as much as 10 years as suggested by recent proposals.

### **Will Declining Recurring Life Reinsurance Volumes In The U.S. Market Finally Stabilize?**

The decline in life reinsurance cession volumes in the U.S. continued in 2010 for the eighth consecutive year. According to the most recent Society of Actuaries study, new recurring ordinary reinsurance assumed declined 15.3% in 2010. New recurring sums assured \$505 billion in 2010 stood at 53% below the peak of \$1.08 trillion in 2002. Initially, the decline occurred primarily because reinsurers raised their prices from very low levels in the early part of the decade, and primary insurers' improved capitalization enabled them to increase retention levels. The lower direct sales levels of primary insurers during the recent economic downturn and sluggish economic recovery accelerated the trend of lower new recurring reinsurance volumes in 2009. This is reflected in the lowest cession rate in the U.S. during the past decade: a mere 30% for new direct life insurance business.

We believe that these low life cession rates and volumes in the U.S. are a more or less permanent paradigm change and will likely trend even lower during the next two years. Contributing to this trend during the first half of 2011 was the decision by at least one major direct writer to increase its retention levels. A return to the peak cession levels of 2002 is not foreseeable, in part because the funding of XXX redundant reserves, which was a major contributor to the peak cession volumes in 2002, is increasingly being accomplished by direct writers using captive arrangements. Another reason is that the less-liquid capital markets and resultant high cost of financing XXX and AXXX redundant reserves motivated direct insurers to increasingly revise products to require lower levels of redundant reserves. This continues to moderate the need for capital funding through reinsurance.

We believe the scarcity of capital for cedants and reinsurers could help maintain the pricing power of reinsurers for both recurring business and one-off portfolio transactions. The lower cession volumes have resulted in more competition among reinsurers for available business and softer pricing in some cases. On the whole, life reinsurers appear to be maintaining their pricing discipline. Pricing discipline in the face of a shrinking market has been facilitated by the increasing consolidation in the U.S. life reinsurance sector where, in 2010, just six reinsurers controlled 91% of new recurring ordinary life reinsurance business. These six insurers are the five global life reinsurers discussed above (treating SCOR and Transamerica Re on a combined basis given the recent acquisition) and Generali USA Life Reassurance Co. (A+/Sta-

ble/--). But the potential for underpricing in the sector, which led to the need to harden life reinsurance prices significantly in 2004, remains a key ratings factor for life reinsurers if competition for scarce business causes pricing to deteriorate broadly.

### Pressure To Expand Beyond Traditional Markets Is Increasing

We expect that the low mortality reinsurance cession rates in the U.S., the potential contraction of the European life reinsurance market under Solvency II, and the continued slow long-term growth of the dominant but mature mortality markets (primarily the U.S. and U.K.) are significantly increasing the pressure on life reinsurers to seek out nontraditional risks and expand into less-saturated markets to sustain growth.

We continue to expect that during the next two to three years, life reinsurers will increasingly expand into nontraditional risks and new markets globally to maintain growth opportunities as the world economy stabilizes. We believe that life reinsurers' cautious approach to the management and deployment of capital means that large-scale expansion will likely occur only when they understand nontraditional risks and are confident that prices are appropriate.

In 2010, life reinsurers did not significantly change their mix of business or dramatically expand geographically. Nonetheless, life reinsurers continued to build a broader

foundation by incrementally developing market presence in nontraditional areas and driving expansion in less-saturated markets, particularly in the Asia-Pacific region. Life reinsurers continue to make progress understanding nontraditional risks such as longevity and long-term care and developing related risk-transfer solutions, though the pace of development is still moderate. We believe that the combination of demographic changes and diversification incentives under emerging regulatory frameworks could lead to significant growth for life reinsurers that can set appropriate prices and effectively manage longevity risks.

### Longevity Market Capabilities Advance

Standard & Poor's believes that recent developments in the longevity markets are a significant enhancement to market capabilities and could signal accelerated demand for longevity risk solutions and increased risk-transfer activity. These advances greatly enhance life reinsurers' opportunity to capitalize on the development of this market. We believe that strategic positioning in the longevity risk space will be vital to support the life reinsurance sector's long-term growth prospects.

An important development is the longevity swap between JP Morgan and Pall UK Pension Fund in February 2011. It is the first hedge to cover the risk exposure to members that are actively working as opposed to retirees. Solutions that provide for longevity risk transfer on



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active employees could facilitate much wider application and higher demand. In addition, there has been sustained activity in the pensions buy-ins, buy-outs, and longevity swaps markets totaling £8.3 billion in the past year, according to Lane Clark and Peacock.

Another important development is Swiss Re's December 2010 issuance of the first longevity trend risk bond. This bond transferred US\$50 million of longevity-related risk into the capital markets and provides Swiss Re with protection against divergence between the mortality of its U.S. life insurance portfolio and its U.K. annuitants.

We believe life reinsurers are well placed to leverage developments in the longevity market and could benefit from the inverse relationship between mortality and longevity risk exposures that produces a natural hedge. The potential diversification benefits of adding longevity exposures to life reinsurers' mortality exposures depend on the degree of similarity between the mortality and longevity of the insured populations.

Pivotal factors for life reinsurers' success in the longevity market and our assessment of their financial strength include their skill in pricing and underwriting of biometric risks, aggregate market exposures, the strength of their risk-management frameworks, and their relative capitalization.

### **The Future Of Life Reinsurers Will Likely Necessitate Assuming Riskier Products**

The continuing contraction of traditional cession rates and volumes in the U.S. and the emergence of Solvency II in Europe, which could be a watershed for the European life reinsurance market, are limiting the long-term growth prospects of the life reinsurance sector within their most well developed markets where the competitive advantages and market status of most players are generally well established.

The industry's experience with variable annuity equity-linked minimum guarantees continues to serve as a cautionary tale life reinsurers would do well to remember as they expand their operations geographically and beyond traditional mortality risks and pursue newer, less well understood, and potentially more volatile products to sustain long-term growth and profitability. The key to success on this expansionary path will be appropriate pricing and disciplined enterprise risk management practices to monitor and control their risks. Social, regulatory, demographic, and environmental trends will continue to drive meaningful developments in other areas that remain important to the future of life reinsurers including older age mortality, periodic pandemic threats, redundant reserve financing, and insurance-linked securitization (ILS). We believe life ILS transactions continue to have a wide potential scope, particularly within the longevity and mortality catastrophe realms. Life reinsurers will continue to have an important role in ILS markets because of their specialized and broad knowledge of mortality and longevity risks. ■

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# Re/Insurers Continue To Tally The Claims Stemming From The Japanese Earthquake And Tsunami

By Taoufik Gharib and Reina Tanaka

**In terms of natural disasters, 2011 is shaping up as a year for the record books. Through the first six months of the year, major catastrophes hit many parts of the world, with earthquakes in Japan and New Zealand, floods and a cyclone in Australia, and winter storms and tornadoes in the U.S.**

According to a report by Munich Re, the catastrophes—all of which occurred in the first half of the year—collectively resulted in about \$265 billion in economic losses. Previously, 2005 had been the costliest year ever, with \$220 billion in economic losses for the full year.

The majority of these losses were from the Tohoku 9.0 magnitude earthquake and the following tsunami that hit northeast Japan on March 11. This earthquake was the most powerful ever registered in Japan and caused an overall estimated economic loss of \$210 billion. This was even more costly than Hurricane Katrina in 2005, which caused an economic loss of \$125 billion. However, the current estimate of insured losses stemming from the Tohoku earthquake is about \$30 billion, which is less than the \$47 billion (2011 dol-

lars) from Hurricane Katrina. The insured loss is relatively low compared with the economic loss, mainly because of the low take-up rates for earthquake insurance in Japan, which is estimated to be about 20%.

Most of Standard & Poor's Ratings Services' associated negative rating actions affected domestic Japanese life and non-life insurance companies. We have taken only one negative rating action on a Bermudian reinsurer so far this year.

### **The Japanese Primary Insurance Market**

The Japanese insurance industry has suffered from the Tohoku Japan earthquake and tsunami, largely in three areas: earthquake extended coverage provided to commercial risks, residential earthquake insurance, and life insurance. The impact on insurers' capital var-

## Japanese Earthquake

ies, depending on each company's insured loss, but the disaster stressed non-life insurers' financial bases more than those of life insurers. We believe that downward pressure on non-life insurers' credit quality will increase if another large natural disaster strikes before they are able to restore their capital strength.

**According to Standard & Poor's calculations, the direct gross insurance claims those companies incurred from commercial and industrial risks amounted to more than \$7.2 billion (¥600 billion).**

In fiscal-year 2010, which ended on March 31, 2011, the top eight non-life Japanese insurers (see Table 1) posted total net incurred losses of \$2.5 billion (¥207.2 billion) for the event, excluding residential earthquake insurance. This is a record amount for quake-related claims in Japan, but it is equivalent to about 3% of the eight companies' adjusted capital (a total of net assets, price fluctuation reserves, and catastrophe loss reserves) as of March 31, 2011. Therefore, the impact was limited. According to Standard & Poor's calculations, the direct gross insurance claims those companies incurred from commercial and industrial risks amounted to more than \$7.2 billion (¥600 billion). However, reinsurers will pay about two-thirds of the amount.

Regarding residential earthquake insurance, the latest data (as of Aug. 3, 2011) showed that paid claims

in the industry topped \$13.2 billion (¥1.1 trillion). Under a government-sponsored earthquake insurance program, Japanese direct insurers first cede 100% of the risks associated with earthquake insurance for residential properties to Japan Earthquake Reinsurance Co. Ltd. (JER; not rated), which then retrocedes the risks back to the Japanese non-life industry and to the Japanese government. The total claims payment of the program is capped at \$66.6 billion (¥5.5 trillion), with JER, the industry, and the Japanese government participating. Under the program, the maximum residential claims payable by the Japanese non-life insurance industry is \$7.2 billion (¥593.1 billion) (see Chart 1).

Although the non-life domestic and foreign insurers' total claims paid for residential earthquake coverage exceeded \$13.2 billion (¥1.1 trillion), the payout will likely be within the insurers' contingency reserves for earthquakes, which they will draw on to offset the payouts' impact on the companies' earnings in fiscal-year 2011. These companies' total adjusted capital (TAC), as measured by Standard & Poor's, includes contingency reserves for residential earthquake insurance. As a result, the decrease of these reserves will dent the insurers' TAC. However, this negative effect will be somewhat mitigated going forward, as the non-life insurers will retain less residential quake risk under the new reinsurance scheme for residential earthquake insurance that the Japanese Cabinet approved on May 2, 2011.

Japanese primary non-life insurers will draw down their catastrophe reserves this fiscal year ending March 31, 2012, to reflect the March 11 earthquake losses.

**Table 1**

**Financial Results For Japan's Major Non-life Insurers**

Nonconsolidated basis, excluding Japan branches of foreign insurers

| (Mil. \$) | Operating company                              | Operating company financial strength rating as of Aug. 5, 2011 |
|-----------|--|--|
| 1         | Tokio Marine & Nichido Fire Insurance Co. Ltd. | AA-/Negative   |
| 2         | Sompo Japan Insurance Inc.                     | AA-/Negative   |
| 3         | Mitsui Sumitomo Insurance Co. Ltd.             | AA-/Negative   |
| 4         | Aioi Nissay Dowa Insurance Co. Ltd.¶           | AA-/Negative   |
| 5         | NIPPONKOA Insurance Co. Ltd.                   | AA-/Negative   |
| 6         | Fuji Fire & Marine Insurance Co. Ltd.          | A-/Stable  |
| 7         | Kyoei Fire & Marine Insurance Co. Ltd.         | A-/Negative  |
| 8         | Nisshin Fire & Marine Insurance Co. Ltd.       | A+/Negative  |
|           | Eight companies total                          |  |
|           | Total market (member of GIAJ)                  |  |

\*Net loss ratio: written-paid basis. ¶Figures in fiscal-year 2009 represented a total of Aioi Insurance and Nissay Dowa General Insurance. N.A.

The wider Japanese insurance industry has also seen losses from Japan's agricultural sector under the Zenkyoren program. Zenkyoren is Japan's national mutual aid association of agricultural cooperatives, and it provides life, property, and liability insurance to its members. Zenkyoren announced in late April that its estimated insured losses from the disaster will reach ¥650 billion for property damage and ¥80 billion for death claims. We estimate that more than half of the total payout will come from global reinsurers.

The Japanese earthquake had a limited impact on the country's life insurance sector. The incurred losses of the major nine life insurers amounted to ¥160.7 billion, equivalent to less than 2% of their adjusted capital. However, a plunge in the stock price of Tokyo Electric Power Co. Inc. (B+/Watch Dev/B) following the Fukushima No. 1 nuclear power plant accident increased capital losses at some life insurers.

Our current outlook on the Japanese non-life insurance sector is negative because of the underwriting losses caused by the event, faltering stock prices, and recent years' mediocre underwriting results in the domestic non-life insurance business, which could hurt insurers' financials.

Seven out of the eight major non-life insurers have a negative outlook, and only one has a stable outlook. Following the outlook revision to negative from stable on the Japanese non-life insurance sector, on March 25, 2011, we revised the outlook on five domestic non-life insurers to negative from stable, as we believe that the repercussions of the earthquake could weaken these insurers' capitalization to levels that are not

commensurate with the current ratings. Our outlook on the Japanese life insurance sector is also negative, primarily reflecting the persistently difficult economic conditions and underperforming investment market in Japan; the March 11 earthquake has exacerbated the uncertainty over the sector.

### The Earthquake's Impact On Global Reinsurers

In the first quarter of this year, heavy natural catastrophe losses severely hit the global European, Bermudian, and U.S. reinsurers. When we compare these catastrophe losses—mostly stemming from the Tohoku earthquake—with the reinsurers' weighted average reported net incomes of 2009 and 2010, they amount to slightly less than two-thirds (61%) of their earnings.

However, from a capital perspective, the impact was larger for the Bermudians, given their modest size relative to their European and U.S. peers. Nine out of the top 10 reinsurers that suffered the largest impact to their capital from the first quarter catastrophe losses were Bermudians (see Table 2). That is a reflection of Bermuda companies being more focused on property catastrophe business, relative to their size. In addition, the European and U.S. companies' capital bases are significantly larger. So, the Bermudians lost about the same as their peers in terms of earnings, but in terms of capital, the Bermudians took a bigger hit.

We believe the accumulated losses from the first quarter of 2011, particularly from the Japanese earthquake, will likely materially erode the earnings

|  | —Fiscal-year 2010, which ended March 31, 2011— |  | —Fiscal-year 2009, which ended March 31, 2010— |   |
|--|--|--|--|---|
|  | Direct premiums                                | Net incurred loss from March 11 earthquake | Direct premiums                                | Net incurred loss from natural catastrophes |
|  | 22,343.7                                       | 988.4                                      | 19,963.3                                       | 246.0                                       |
|  | 16,022.2                                       | 464.6                                      | 14,358.5                                       | 142.4                                       |
|  | 15,642.0                                       | 521.4                                      | 13,709.9                                       | 167.3                                       |
|  | 14,016.4                                       | 234.1                                      | 12,760.3                                       | 124.1                                       |
|  | 7,883.2  | 234.1                                      | 7,174.9  | 140.3                                       |
|  | 3,469.7  | 10.9                                       | 3,168.2  | 33.5  |
|  | 2,013.0  | 31.4                                       | 1,799.9  | 17.3  |
|  | 1,688.4  | 14.5                                       | 1,487.0  | 19.4  |
|  | 83,082.3                                       | 2,500.6                                    | 74,427.5                                       | 890.3                                       |
|  | 86,590.6                                       | N.A.                                       | 77,622.7                                       | N.A.  |

—Not available.

Sources: General Insurance Association of Japan (GIAJ) and company data.

## Japanese Earthquake

**Table 2: First-Quarter 2011 Catastrophe Losses By Re/Insurer**

| (Mil. \$) | Re/Insurer                          | Operating-company financial strength rating as of Aug. 5 | Outlook  | Total capital as of Dec. 31, 2010 (1) | Net income 2010 (GAAP) (2) | Net income 2009 (GAAP) (2) | Average net income (2009 - 2010) |
|-----------|-------------------------------------|--|----------|---------------------------------------|----------------------------|----------------------------|----------------------------------|
| 1         | Flagstone Reinsurance Holdgs Ltd.   | NR   | NR       | 1,448                                 | 97                         | 242                        | 170                              |
| 2         | Amlin plc                           | A  | Stable   | 3,168                                 | 343                        | 724                        | 534                              |
| 3         | Hiscox Ltd.                         | A  | Stable   | 1,990                                 | 277                        | 447                        | 362                              |
| 4         | PartnerRe Ltd.                      | AA-  | Negative | 8,028                                 | 818                        | 1,502                      | 1,160                            |
| 5         | Lloyd's                             | A+   | Stable   | 29,581                                | 3,396                      | 6,161                      | 4,778                            |
| 6         | Platinum Underwriters Holdgs Ltd.   | A  | Negative | 2,146                                 | 216                        | 382                        | 299                              |
| 7         | Montpelier Re Holdgs Ltd.           | A-   | Stable   | 1,957                                 | 212                        | 464                        | 338                              |
| 8         | Catlin Group Ltd.                   | A  | Stable   | 3,541                                 | 337                        | 509                        | 423                              |
| 9         | Transatlantic Holdgs Inc.           | A+   | Stable   | 5,315                                 | 402                        | 478                        | 440                              |
| 10        | Everest Re Group Ltd.               | A+   | Stable   | 7,102                                 | 611                        | 807                        | 709                              |
| 11        | RenaissanceRe Holdgs Ltd.           | AA-  | Stable   | 4,697                                 | 703                        | 839                        | 771                              |
| 12        | Axis Capital Holdgs Ltd.            | A+   | Stable   | 6,619                                 | 820                        | 461                        | 640                              |
| 13        | Hannover Rueckversicherung AG       | AA-  | Stable   | 9,509                                 | 993                        | 1,052                      | 1,022                            |
| 14        | SCOR SE                             | A  | Positive | 6,663                                 | 554                        | 530                        | 542                              |
| 15        | Aspen Insurance Holdgs Ltd.         | A  | Stable   | 3,741                                 | 313                        | 474                        | 393                              |
| 16        | Lancashire Holdgs Ltd.              | A-   | Stable   | 1,416                                 | 331                        | 385                        | 358                              |
| 17        | Argo Group Int'l Holdgs Ltd.        | A-   | Stable   | 2,003                                 | 83                         | 118                        | 100                              |
| 18        | Validus Holdgs Ltd.                 | A-   | Stable   | 4,042                                 | 403                        | 897                        | 650                              |
| 19        | Endurance Specialty Holdgs Ltd.     | A  | Stable   | 3,377                                 | 349                        | 521                        | 435                              |
| 20        | Swiss Reinsurance Co. Ltd.          | A+   | Positive | 56,131                                | 863                        | 496                        | 680                              |
| 21        | Munich Reinsurance Co.              | AA-  | Stable   | 37,329                                | 3,210                      | 3,613                      | 3,412                            |
| 22        | Ariel Reinsurance Co. Ltd. (5)      | A-   | Stable   | 1,338                                 | 216                        | 383                        | 300                              |
| 23        | Arch Capital Group Ltd.             | A+   | Stable   | 5,139                                 | 817                        | 851                        | 834                              |
| 24        | Alterra Capital Holdgs Ltd.         | A-   | Positive | 3,359                                 | 302                        | 246                        | 274                              |
| 25        | Allied World Assurance Co. Ltd. (6) | A  | CWP      | 3,874                                 | 665                        | 607                        | 636                              |
| 26        | XL Capital Ltd.                     | A  | Stable   | 13,149                                | 586                        | 207                        | 396                              |
| 27        | White Mountain Ins. Group Ltd.      | A-   | Stable   | 5,080                                 | 87                         | 470                        | 278                              |
| 28        | Berkshire Hathaway Inc. (7)         | AA+  | Stable   | 94,400                                | 8,696                      | 3,229                      | 5,962                            |
| 29        | Ace Ltd. (8)                        | AA-  | Stable   | 27,941                                | 3,108                      | 2,549                      | 2,829                            |
|           | <b>Grand total</b>                  |  |          | <b>354,079</b>                        | <b>29,804</b>              | <b>29,644</b>              | <b>29,724</b>                    |

The companies are ranked in a descending order by the total first-quarter 2011 catastrophe losses divided by capital as of year end 2010.

(1) Total capital = shareholders' equity + minority interest + hybrid securities + debt.

(2) Net income available to shareholders as reported by the company and after preferred shares' dividends.

(3) Pretax net natural catastrophe losses net of reinstatement premiums, reported in Q1 2011.

(4) Combined ratio as reported by the company.

—First-quarter 2011 (3)—

|  | Australia floods and Cyclone Yasi | New Zealand Christchurch Earthquake | Japan Tohoku earthquake and tsunami | Other catastrophes | Total catastrophe losses | Combined ratio (%) (4) | Net catastrophe losses' impact on combined ratio (%) | First-quarter 2011 catastrophe losses/capital as of year-end 2010 (%) | First-quarter 2011 catastrophe losses/average net incomes of 2009 and 2010 (%) |
|--|-----------------------------------|-------------------------------------|-------------------------------------|--------------------|--------------------------|------------------------|--|---|--|
|  | 65                                | 82                                  | 110                                 | 0                  | 257                      | 170.3                  | 102.4  | 17.7  | 151.3  |
|  | 24                                | 176                                 | 241                                 | 0                  | 441                      | N.A.                   | N.A.   | 13.9  | 82.6   |
|  | 24                                | 96                                  | 150                                 | 0                  | 270                      | N.A.                   | N.A.   | 13.6  | 74.7   |
|  | 97                                | 252                                 | 722                                 | 0                  | 1,071                    | 193.7                  | 121.6  | 13.3  | 92.3   |
|  | 650                               | 1,200                               | 1,950                               | 0                  | 3,800                    | N.A.                   | N.A.   | 12.8  | 79.5   |
|  | 25                                | 137                                 | 87                                  | 0                  | 248                      | 200.4                  | 135.6  | 11.6  | 83.0   |
|  | 15                                | 75                                  | 126                                 | 0                  | 216                      | 178.8                  | 130.0  | 11.0  | 64.0   |
|  | 50                                | 125                                 | 200                                 | 0                  | 375                      | N.A.                   | N.A.   | 10.6  | 88.7   |
|  | 60                                | 120                                 | 365                                 | 4                  | 549                      | 147.8                  | 57.4   | 10.3  | 124.9  |
|  | 37                                | 210                                 | 320                                 | 98                 | 665                      | 151.4                  | 65.8   | 9.4   | 93.8   |
|  | 31                                | 179                                 | 217                                 | 0                  | 427                      | 230.0                  | 139.9  | 9.1   | 55.5   |
|  | 87                                | 203                                 | 287                                 | 0                  | 577                      | 161.3                  | 73.2   | 8.7   | 90.1   |
|  | 73                                | 215                                 | 327                                 | 192                | 807                      | 123.8                  | 41.6   | 8.5   | 78.9   |
|  | 0                                 | 0                                   | 0                                   | 0                  | 517                      | 135.2                  | 46.3   | 7.8   | 95.4   |
|  | 36                                | 68                                  | 181                                 | 0                  | 285                      | 148.5                  | 63.0   | 7.6   | 72.4   |
|  | 0                                 | 25                                  | 75                                  | 0                  | 100                      | 97.4                   | 68.9   | 7.1   | 27.9   |
|  | 8                                 | 45                                  | 60                                  | 0                  | 113                      | 145.2                  | 43.2   | 5.6   | 112.7  |
|  | 31                                | 42                                  | 149                                 | 0                  | 222                      | 143.0                  | 51.6   | 5.5   | 34.1   |
|  | 15                                | 45                                  | 125                                 | 0                  | 185                      | 139.3                  | 48.3   | 5.5   | 42.5   |
|  | 325                               | 800                                 | 1,200                               | 25                 | 2,350                    | 163.7                  | 89.4   | 4.2   | 345.8  |
|  | 508                               | 1,043                               | 0                                   | 0                  | 1,551                    | 144.9                  | 21.6   | 4.2   | 45.5   |
|  | 0                                 | 0                                   | 0                                   | 0                  | 50                       | 87.6                   | 44.5   | 3.7   | 16.7   |
|  | 33                                | 65                                  | 79                                  | 2                  | 179                      | 110.0                  | 28.2   | 3.5   | 21.4   |
|  | 10                                | 16                                  | 90                                  | 0                  | 115                      | 112.5                  | 30.4   | 3.4   | 42.1   |
|  | 19                                | 38                                  | 75                                  | 0                  | 132                      | 122.6                  | 39.5   | 3.4   | 20.8   |
|  | 67                                | 75                                  | 243                                 | 3                  | 387                      | 125.8                  | 30.5   | 2.9   | 97.8   |
|  | 3                                 | 42                                  | 80                                  | 0                  | 125                      | 115.3                  | 18.0   | 2.5   | 44.9   |
|  | 195                               | 412                                 | 1,066                               | 0                  | 1,673                    | N.A.                   | 26.6   | 1.8   | 28.1   |
|  | 82                                | 97                                  | 215                                 | 21                 | 415                      | 105.0                  | 14.3   | 1.5   | 14.7   |
|  | <b>2,569</b>                      | <b>5,883</b>                        | <b>8,738</b>                        | <b>345</b>         | <b>18,103</b>            |                        |  | <b>5.1</b>  | <b>60.9</b>  |

(5) Ariel's catastrophe losses include natural catastrophes and the Gryphon Alpha accident.

(6) The ratings on Allied World are on CreditWatch positive following the merger announcement with Transatlantic.

(7) Berkshire's insurance segment data. (8) ACE's catastrophe losses do not include \$74 million of reinstatement premium expense for its primary business. N.A.—Not available.

## Japanese Earthquake

of reinsurers worldwide. Based on the reinsurance companies' first-quarter reported losses, the weighted average catastrophe losses constituted about 5% of their year-end 2010 capital, which is about two-thirds of their earnings (relative to the weighted average reported net incomes of 2009 and 2010). Therefore, we expect that these losses will be an earnings event rather than a capital event and should be contained within 2011 results, with the exception of a few outliers.

These events, in aggregate, generated net losses in the first quarter of 2011 for most of the reinsurers. The underwriting results ranged from Ariel Reinsurance Co. Ltd.'s 87.6% combined ratio to RenaissanceRe Holdings Ltd.'s 230% (see Table 2). (A combined ratio of less than 100% indicates that the company has made an underwriting profit, while a ratio above 100% means that it is paying out more money in claims and expenses than it is receiving from premiums.) Furthermore, with the exception of a few companies, this entire peer group reported net losses in the quarter.

Despite the significance of these losses, our expectation for many reinsurers is that they will likely generate little worse than break-even results for the full year. However, if a given company loses more than one year's worth of earnings, or if it experiences catastrophe losses outside its stated risk tolerances and appears to be an outlier relative to its peers, we are likely to take negative rating actions. However, we expect that these rating actions will be limited.

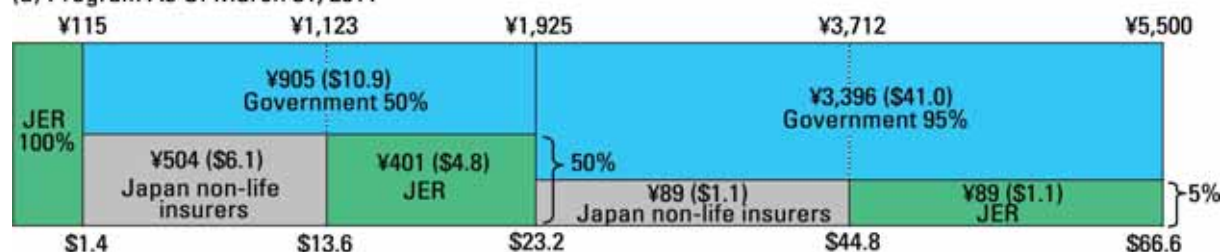
Indeed, on Aug. 5, 2011, we revised our outlook on Bermudian reinsurer Platinum Underwriters Holdings Ltd. and its related subsidiaries to negative from sta-

ble because we expect that the group's full-year earnings will likely deteriorate markedly in 2011 compared with 2010 because of the catastrophe losses reported in the first half of the year. In our view, these losses will become a capital event rather than just an income event. The revised outlook also reflects our revised view of the group's risk controls for property/catastrophe exposures, given the relatively outsized catastrophe losses that the group incurred in recent months. For the first half of 2011, the group reported total catastrophe losses of \$326 million, representing 15% of its year-end 2010 total capital. We believe that these losses could indicate some weaknesses in the group's catastrophe risk-management capabilities. As a result, we lowered Platinum's enterprise risk management overall score to adequate from strong to reflect our updated view of Platinum's catastrophe risk controls.

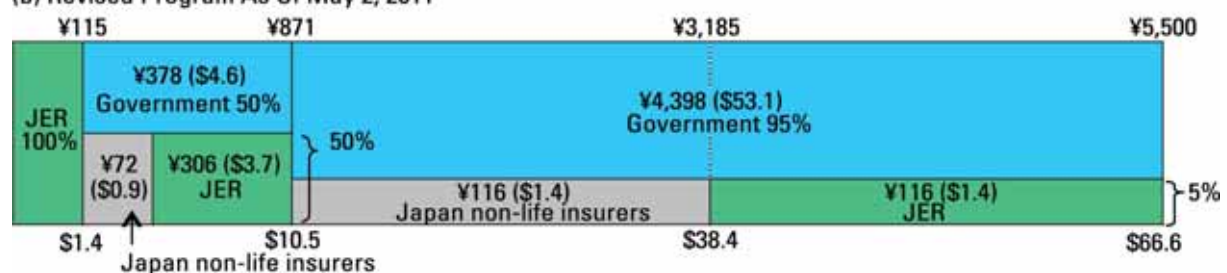
Globally, the severity and the frequency of the natural catastrophes are exceptionally high year-to-date. The U.S. National Climatic Data Center (NCDC) estimates that economic losses in the first half of 2011 stood at \$34 billion and insured losses at \$18 billion. It calculates that the first half of 2011 has been the costliest since it began tracking natural disasters in the U.S. in 1980. Furthermore, we are in the midst of the U.S. hurricane season, which is forecasted to be above average in activity. Based on the National Oceanic and Atmospheric Administration's Aug. 4 update, the confidence for an above-normal Atlantic hurricane season has increased from 65% in May to 85%. In addition, the expected number of named storms has increased from 12-18 in May to 14-19, and the expected number

### Chart 1: Reinsurance Scheme For Residential Earthquake Insurance In Japan (¥ billions, \$ billions)

(a) Program As Of March 31, 2011



(b) Revised Program As Of May 2, 2011



of hurricanes has increased from six to 10 in May to seven to 10, of which three to five could be major hurricanes (Category 3, 4 or 5 with winds of at least 111 mph). (The long-term seasonal averages are 11 named storms, six hurricanes, and two major hurricanes). Therefore, reinsurers are keeping their fingers crossed and a close watch on the weather reports.

### How The Earthquake Affected Prices

Japanese non-life insurers' depend heavily on reinsurance to cede earthquake risks. Not surprisingly, Japan earthquake rates for the April 1 renewal season increased markedly. The cost of policies that suffered earthquake losses rose most significantly—up to 50%. However, even rates on loss-free earthquake policies in Japan rose 15%-25%. Furthermore, Japan wind coverage also benefited from a 5% to 10% price increase. However, many Japanese mutual companies did not renew at the April 1 renewal season. Rather, these companies extended their programs by three months, with the expectation that they would enter into new nine-month contracts and then re-adjust the inception date back to April 1 in 2012.

Such a dramatic rise in reinsurance costs will hurt Japanese insurers' earnings. We believe that reinsurers will phase-in these rate increases gradually over a few renewal seasons. This is because the Japanese reinsurance market is very relationship driven, and rate changes in this market tend to be gradual, unlike the abrupt jump in the U.S. that followed Hurricane Katrina in 2005. Although demand for such coverage in Japan has spiked since the disaster, Japanese insurers are taking a very controlled stance toward underwriting earthquake extended coverage for commercial lines in an environment in which it is pricier to obtain both reinsurance treaty and facultative coverage.

From an aggregate risk control and risk-adjusted pricing perspective, major Japanese insurers are refraining from writing new earthquake policies and instead are seeking to set risk-adjusted prices to reflect increased reinsurance cost. On the other hand, we estimate that the number of households that opt for residential earthquake insurance is increasing nationwide from the historically low 20% take-up rate prior to the event. Premium rates for residential earthquake insurance are stipulated as standard rates, which are calcu-

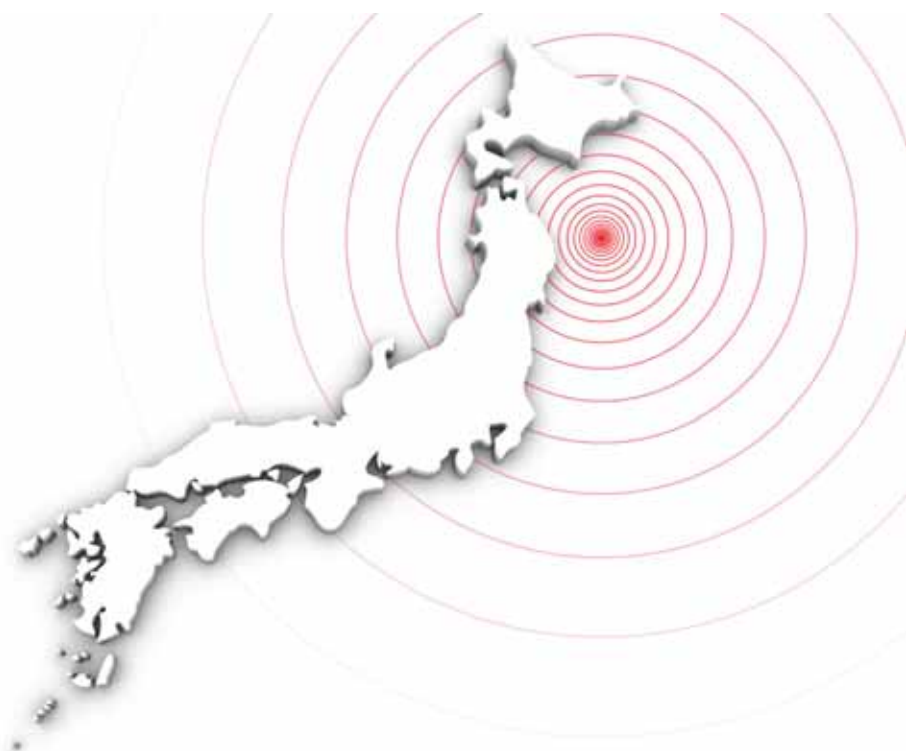
lated by the Non-Life Insurance Rating Organization in Japan (NLIRO). All member companies use the same table that the NLIRO provides. We expect that the coverage rules and table of premium rates of residential earthquake insurance will be reviewed, given the large payouts of the March quake as well as the insurers' decreased earthquake contingency reserves. The chairman of the General Insurance Association of Japan (GIAJ) indicated in his press conference in June 2011 that the premium rates may be reviewed in the future, though nothing has yet been decided. ■

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# S&P Assessment Of Reinsurers' ERM Places High Importance on Understanding Of Catastrophe Models

By Miroslav Petkov, Dennis Sugrue and Mark Coleman

**For most insurers and reinsurers exposed to a material level of natural catastrophe risks, catastrophe models developed by professional modeling firms play a central role in how they manage catastrophe risk. These models are used in helping to define risk appetite, risk limits, accumulations, pricing, reinsurance purchasing, and capital allocation.**

Given the widespread use of such models in the management of this risk, (re)insurers' use and understanding of catastrophe models can affect several categories of our analysis, including management and corporate strategy, capitalization, and enterprise risk management (ERM).

We do not endorse the use of any one model over another. However, when assessing an insurer's catastrophe risk management capabilities, we place particular emphasis on its ability to demonstrate that it understands the models adequately. We also examine how it adjusts the model results where it believes adjustments are appropriate and prudent. If we are not comfortable with an insurer's understanding or implementation of a model, or if the view taken on a particular model is not in line with an insurer's underlying risk profile, we will reflect this in the rating. We can do that qualitatively in our assessments of management, capitalization, and ERM, or quantitatively by increasing the catastrophe charge in our risk-based capital model.

### Overview

■ Professional modeling firms provide expertise, but their modeling is confidential, so insurers can only understand the models by performing sensitivity testing.

■ We take an insurer's understanding of the strengths and weaknesses of the models it uses into account when assessing its catastrophe risk management capabilities.

■ The importance of the issue was highlighted in 2011 by catastrophes around the world, especially the Japanese earthquake, which demonstrated limitations in several models.

The year 2011 presented users of catastrophe models with two major challenges. First, the large number of events in the past 12 months tested the reliability of the models. The biggest of these events was the Great Tohoku earthquake on March 11 in Japan. Second, insurers had to respond to the new releases of vendor models, including Version 11.0 of Risk Management Solutions Inc.'s Atlantic Hurricane Model (RMS v.11). As a part of our ERM and wider rating reviews, we focus on how each insurer addresses these issues; these will affect our view of the company's catastrophe risk management.

### Understanding A Model Is Vital To Using It Effectively

Most modeling agencies disclose only a high level description of the catastrophe models they produce; the detailed modeling and parameterization is kept confidential. As a result, many users view the models as "black boxes". Despite this, many insurers rely heavily on the results of the models because, while imperfect, they have been developed by experts and reflect the most up-to-date scientific research, climate trends, and loss experience.





In our view, models of any kind should only be used to support management's intuition and judgment, not replace it. A slavish adherence to catastrophe models exemplifies poor management of catastrophe risk. Insurers that demonstrate robust catastrophe risk management achieve a deep understanding of the models by performing extensive analysis and sensitivity testing.

### *Sensitivity testing builds understanding of a model's limitations*

Performing extensive sensitivity testing could help insurers to understand the effect of the various model settings on the overall results. When using catastrophe models, insurers must choose various settings, for example, the historical period over which averages are calculated. They must also choose from several different vulnerability settings, exclude some types of losses, or apply average assumptions to the exposure data when data quality is limited. Testing the sensitivity of the model to different settings by adjusting the inputs enables a user to quantify the impact of choosing different model settings, and so judge what settings are most appropriate for its portfolio.

Running different sample portfolios can also help users understand the model's sensitivity to exposure data (both property characteristics and location). These studies should give insurers insight into the risk characteristics of their exposure. It should also increase awareness of data quality, which should help insurers focus on addressing any data deficiencies highlighted through their effect on the overall modeled results.

### *Models can be adjusted to match risk profiles more closely*

Sensitivity testing may highlight that some model results are not consistent with an insurer's view. It should also help to derive appropriate adjustments so that the results reflect the insurer's view as closely as possible. Where a company uses several models, testing and analysis should help it to understand the differences between the models, and help it decide which model (or combination of models) best represents its risk profile.

In our analysis, we take particular note of how insurers allow for model, parameter, and data uncertainty. If an insurer relies fully on the modeled results without making

explicit or implicit allowances for imperfections in the model, it may understate or overstate its exposure to catastrophe risk. In our ERM analysis, we look into how an insurer allows and adjusts for model or exposure and risk uncertainties in setting its risk appetite and limits.

To avoid too much reliance on catastrophe models, we assess an insurer's ERM more highly if the impact of extreme scenarios as well as the probabilistic impact predicted by use of model results are included when forming risk appetite and measuring natural catastrophe exposure. Such scenarios also help management to better appreciate and formulate its risk appetite and exposure to natural catastrophe risk, and communicate this to internal and external audiences.

### **Ensuring Risk Appetite Is Not Breached Is Key To Our ERM Assessment**

An insurer's ability to operate within its risk appetite is critical in our assessment of its ERM. A risk appetite is the framework that establishes the risks that the insurer wishes to acquire, avoid, retain, and/or remove. Insurers typically express their overall appetite for natural catastrophe risk by referring to the modeled impact of an extreme event, e.g., one that is only likely to occur once in 200 years.

Each model generates a slightly different curve matching the modeled impact of an event (the losses arising from it) to the return period (how often you would expect a similar event to occur). We look to see evidence that an insurer does not treat its risk appetite as a limit on losses, using the curve to quantify those losses. To us, the risk appetite implies a sliding scale of acceptable losses across the whole scale of return periods.

After a major catastrophe loss, we do not view it as sufficient to demonstrate that losses are less than those expected for the overall stated risk appetite for natural catastrophe risk and therefore the risk appetite has not been exceeded. Similarly, it is insufficient to argue that the risk appetite is exceeded because the event is more extreme than the assumed level in setting the risk appetite.

We expect insurers to assess the particular event, to judge the return period for that event, and so to assess whether losses were appropriate under the risk appetite. For example, if the event is considered to be one in 20, an insurer with strong ERM should demonstrate that the commensurate limit for this level relative to the risk appetite has not been exceeded.

We recognize that it is difficult to determine the return period of an event as there is no robust scientific approach for that. Nevertheless, we expect insurers to use evidence from models and the available scientific views to justify their opinion. We also expect to see this evidence applied consistently to other recent events. Thus, insurers should not suffer losses from events defined as one-in-50-years or one-in-100-years every 10 years or so.



## Catastrophe Models

### Comparing Modeled Losses Against Actual Losses Can Improve Understanding Of Models

Under our criteria, insurers are scored more highly if they perform extensive analyses of the differences between actual and modeled losses. Using models to analyze actual events and compare them to actual losses can help an insurer identify which perils may not be modeled adequately and help it determine the necessary adjustments to compensate for these deficiencies.

We do not expect modeled losses to always be very close to actual losses, but we consider it positive when the actual losses are at least of similar magnitude to the modeled losses across different events and risks. We consider that reconciliation between actual and modeled losses could help insurers clarify their understanding of the key drivers that cause the differences.

Insurers with strong ERM assessments are expected to have the ability to obtain detailed breakdown and quantify the impact of different factors (e.g., the magnitude of the event, data deficiencies, vulnerability and financial model deficiencies, reinsurance protection allowance, and unmodeled risks and exposures). We also believe this exercise is critical for improving the understanding of models, identifying model deficiencies, and prompting improvements on how the models are used.

We expect the lessons from reconciliation analysis to be incorporated in pricing, underwriting, data quality, exclusions, accumulation controls, reinsurance, and risk appetite setting. This reconciliation work could help management form its own view of the reliability of the model and any potential deviation from the modeled results when using them in developing strategy and setting risk appetite.

Recently, we have observed several catastrophe events, each presenting different challenges to the robustness of vendor models for these perils. In particular, the earthquake in Japan caused the adequacy of catastrophe models for natural catastrophe risk management to be reviewed because the tsunami caused large insured losses and this aspect of earthquake events is not included in most commercially available catastrophe models. The magnitude of the earthquake was also well above the maximum allowed for in some models. During our ERM analysis, we will focus on the quality of reconciliation between actual and model results, the lessons learned, and how these are implemented.

### Extensive Testing Should Be Performed On New Versions Of Models

The recent update to RMS v.11 has caused some consternation in the market, demonstrating the influence that modeling firms have achieved. It forced some (re)insurers to make difficult decisions on capital management. Some bought more traditional and nontraditional reinsurance or raised debt, and some wrote less business at the June and July renewals. Others have not reacted at all.

The update had a relatively large effect on modeled results for U.S. tropical cyclone risk. As a result, the

change is likely to have wide-ranging implications for all players with material exposure to that peril. In our assessment of an insurer's catastrophe risk management, we consider how it responds to the update to be important. We understand that it will take time for a (re)insurer to fully understand the new model's effect on its exposure, and will allow for a reasonable period of assessment before expecting RMS v.11 to be fully adopted.

When a new version of a model is released, we expect insurers with better risk management to perform extensive analysis of the differences in the results compared to the current version before deciding to adopt the new version. Similar extensive analysis should be performed when an insurer decides to change its model provider or develop models of its own. This analysis should enable management to provide a clear rationale for adopting the new version. In particular, this analysis should inform what adjustments to the new model are required, especially if adjustments to the previous model were previously applied. Sometimes, the new release highlights risks which were not adequately reflected in the old model or the new model indicates considerably increased risk exposure. In our review, we focus on how this change is reflected in the risk appetite/risk limits, pricing/underwriting, and reinsurance purchasing, and how quickly these changes are implemented. We take a negative view of risk appetites being automatically increased without management undertaking extensive analysis and discussing whether this higher level of risk is acceptable. We also assign a lower score to an insurer that decides not to adopt the latest version of a model on the grounds that the results are unreasonably higher, unless it can provide robust justification for its view.

When reviewing an insurer's catastrophe risk management, we pay close attention to how it demonstrates that it has adequate understanding of the natural catastrophe models it relies on. At the same time, the processes by which the new information and understanding about the models it uses are implemented throughout its operations are equally important. We monitor how quickly and extensively this occurs. Where an insurer takes a business decision that runs against the conclusions it might have drawn from the new information, we assess whether it based its decision on justified business pragmatism or whether it sacrificed better risk management to competitive pressures or lacked the will to implement difficult changes. ■

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# Reinsurance Peer Analysis: Shift To Short-Tailed Lines Contributes To Peak Capital Levels And Strong Operating Performance In Recent Years

By Dennis Sugrue and Trupti Kulkarni

**Table 1: Companies Reviewed, By Peer Group**

| Hybrid (re)insurers                            |
|--|
| Allied World Assurance Co. Ltd.                |
| Alterra Capital Holdings Ltd.                  |
| Amlin PLC                                      |
| Arch Capital Group Ltd.                        |
| Aspen Insurance Holdings                       |
| AXIS Capital Ltd.                              |
| Catlin Group Ltd.                              |
| Endurance Specialty Holdings Ltd.              |
| Everest Re Group Ltd.                          |
| General Re Corp.                               |
| Hiscox Insurance Co. Ltd.                      |
| Odyssey Re Holdings Corp.                      |
| Platinum Underwriters Holdings Ltd.            |
| Sirius International Insurance Corp.           |
| Transatlantic Holdings Inc.                    |
| White Mountains Re Group Ltd.                  |
| Large global composite reinsurers              |
| Hannover Rueckversicherung AG                  |
| Munich Re Group                                |
| PartnerRe Ltd.                                 |
| SCOR SE  |
| Swiss Reinsurance Company Ltd.                 |
| Property-catastrophe and short-tail reinsurers |
| Ariel Reinsurance Co. Ltd.                     |
| Lancashire Holdings Ltd.                       |
| Montpelier Re Holdings Ltd.                    |
| RenaissanceRe Holdings Ltd.                    |
| Validus Holdings Ltd.                          |

The reinsurance sector has responded well to changing market conditions in recent years. Some lines of business have weathered soft market conditions since 2007. The sector emerged from the financial crisis relatively unscathed and withstood heavy catastrophic activity in the first halves of 2010 and 2011. It has achieved this through a focused approach on maintaining underwriting discipline, enhancing risk management practices, and following growth strategies that emphasize more-profitable lines or geographies.

Standard & Poor's Ratings Services has performed peer analysis on a group of some of the largest reinsurers based in North America, the U.K., and Europe. These write over 80% of global net reinsurance premium. Comparing results from 2006 to 2010, we noted a slight shift in the sector's books of business to more short-tailed lines as defined by our risk-based capital model. The shift was more pronounced for the large global and hybrid players (see peer group constituents in Table 1). Short-tailed lines can be more volatile than longer-tailed lines, and we have also seen an increase in aggregate capital levels, possibly to protect against this increased volatility. The increased focus on shorter-tailed lines has, in part, enabled reinsurers to achieve an average operating performance that is stronger than the 10-year average. We also noted an improvement in the security and liquidity of companies' investment portfolios.

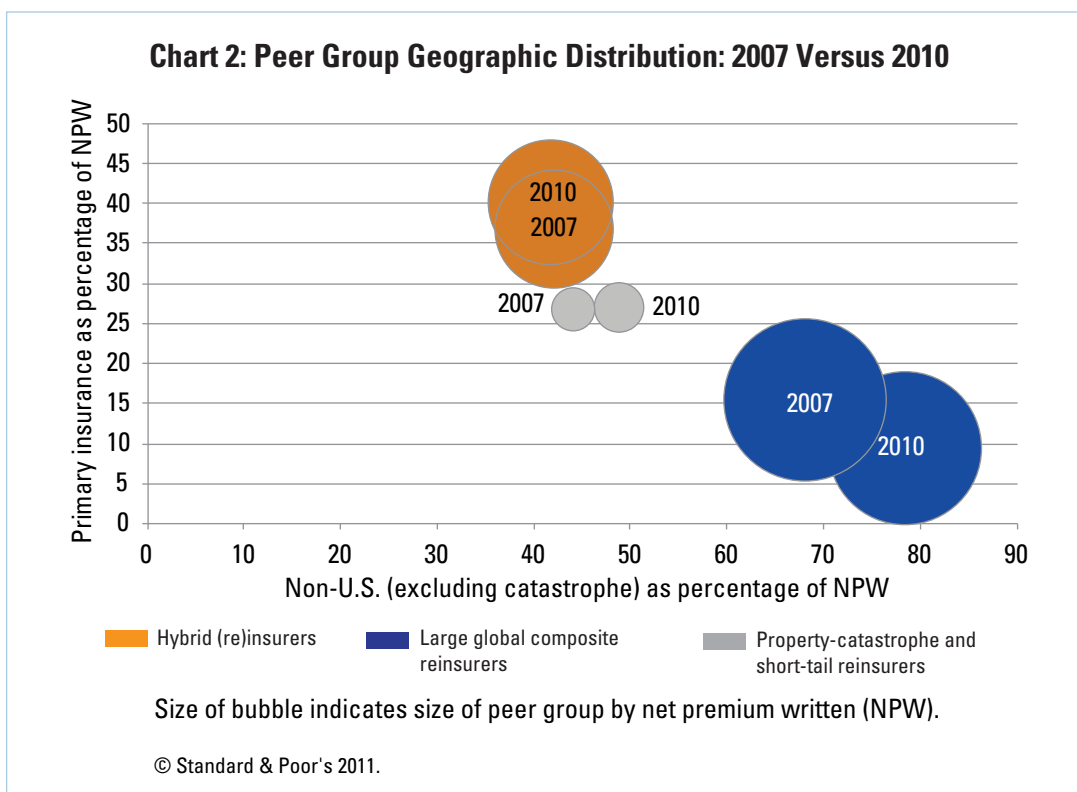
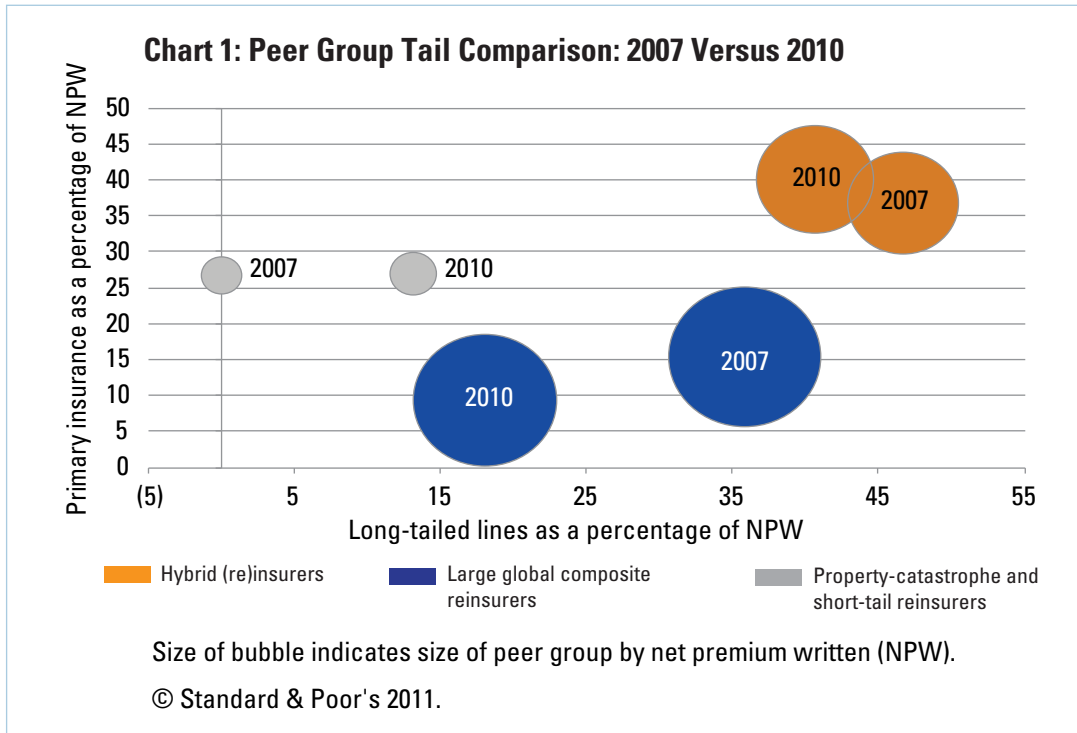
## Short-Tail Lines Gain Favor With Non-Life Reinsurers

Our study shows that since 2007, the non-life sector has gradually shifted toward underwriting more short-tail lines (see Chart 1). The global reinsurers in the study underwrite a combination of reinsurance and insurance books. Short-tailed lines comprised 70% of the sector's net premium written in 2010, compared to 67% in 2007. While, this shift may not seem material in the aggregate, there has been a much more significant move toward short-tailed lines by the larger, more-established reinsurers. In our opinion, this is because, as casualty pricing has softened, shorter-tailed lines have exhibited more adequate pricing in recent years. At year-end 2010, gross underwriting in the sector was growing at a compound annual growth of 4.2% and stood at about \$158 billion.

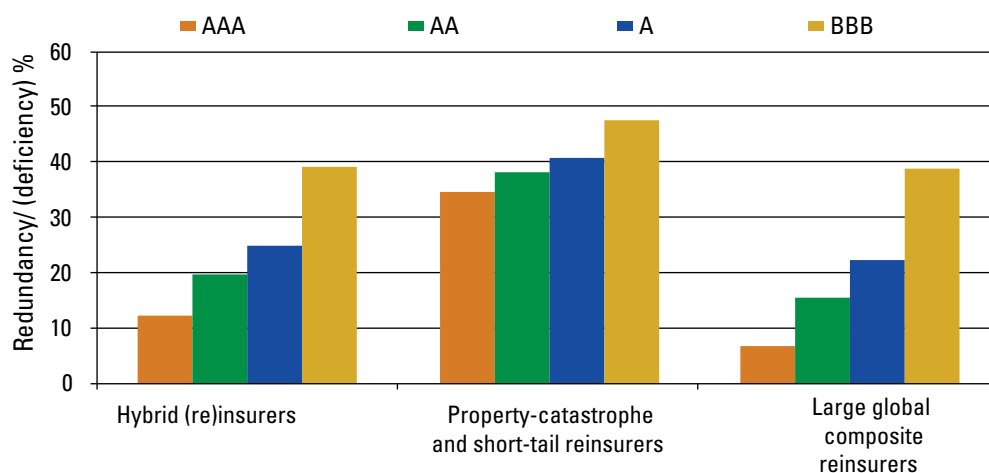
## Peer Analysis

The shift has been stronger among the large global composite reinsurers--their average short-tail premiums rose to about 82% at year-end 2010 from 64% at year-end 2007. It was more muted for hybrid reinsurers, defined as companies that write a more even balance of primary and

reinsurance business. This group increased its short-tail exposure to an average of 59% in 2010 from 53% in 2007. Predictably, the property-catastrophe short-tail players, many of which were founded in the past 10 years, went the other way. As they sought to diversify away some of



**Chart 3: Estimated Aggregate Capital Adequacy  
By Peer Group At Year-End 2010**



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their catastrophe risks, they started writing long-tail lines, which now make up 13% of their underwriting.

### Geographic Diversification Is Also Increasing

Although the change is less noticeable than the shift to shorter-tailed lines, our analysis also reveals that non-U.S. business now forms 50% of the industry's total net premium written (NPW), up from 48% in 2007 (see Chart 2). In our view, this was likely triggered by softer pricing in U.S. long-tailed lines. Companies are therefore deploying capital to diversifying and emerging markets.

Once again, the most pronounced shift came from the large global reinsurers. At year-end 2010, average non-U.S., (excluding catastrophe) business was about 78% of their total net written premium, up from 68% in 2007. Firms specializing in short-tail and property catastrophe business increased their non-U.S., non-catastrophe proportion of NPW to 49% in 2010 from 44% in 2007. However, the hybrid reinsurers group, as a whole, has not recorded a material increase in non-U.S. writings over the past four years.

### Capital Reached Peak Levels At The Start Of 2011: Most Companies Have Excess Capital For Their Rating Levels

Capitalization has historically been a rating strength. Overall, it reached peak levels for the sector at the outset of 2011. As exposure to short-tail lines of business has increased, companies have increased capital levels to support the potentially more-volatile business. Strong operating performance, disciplined underwriting strategies, recovering financial markets, conservative investment strategies, and changing risk appetites contribute to strong capitalization levels. In recent years, reinsurers

have also continuously enhanced their enterprise risk management (ERM) practices. Based on our risk-based capital model, we believe the industry in aggregate carried capital consistent with a 'AAA' confidence level at year-end 2010. In fact, we calculate that each of the peer groups we reviewed in our study has redundant capital at the 'AAA' level (see Chart 3).

Shareholders' equity in the sector rose by an average compound annual growth rate of 7.3% in the past five years. Over this period, reinsurers have improved the quality of their capital. They have maintained high levels of shareholder equity and adequate reserves, and have secured reinsurance protection from highly rated reinsurers. At year-end 2010, the industry reported an average debt leverage of about 10% and financial leverage (including preferred stock and hybrids) of about 16%.

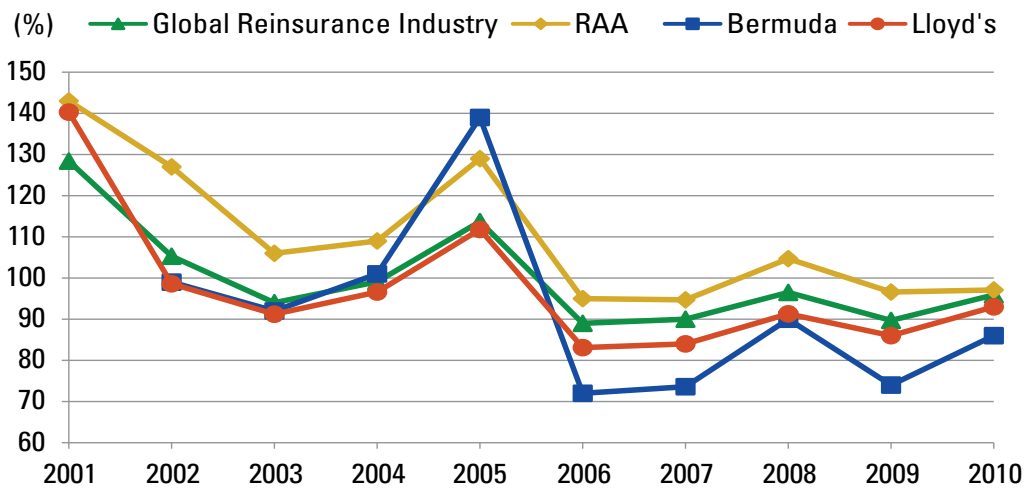
The financial crisis in 2008 put reinsurers' capital levels under pressure, but capital bases bounced back in 2009 as asset values rebounded. Earnings stood at record highs for the industry and the year was largely catastrophe-free. The industry's strong ERM practices helped to mitigate catastrophe losses in 2010, clearing the way for further strong results. Retained earnings in 2009 and 2010 helped bolster the industry's capitalization. In the coming years, we expect strong balance sheets to play a critical role in financing reinsurers' growth strategies while protecting them against continued volatility and uncertainty in the capital markets.

### Operating Performance Over The Past Five Years Has Been Strong, But Volatile

Over the past five years, the sector's operating performance, as measured by combined ratio and return on revenue, has improved compared with historical performance.

## Peer Analysis

**Chart 4: Industry Trends – Non-Life Combined Ratio**



Source--Company filings and surveys. RAA--Reinsurance Association of America.

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This improved operating performance is most likely chiefly based on a string of relatively benign years for catastrophe losses. However, it is fair to say that a shift to shorter-tailed lines has helped the companies to extract more profit than they would have achieved under their old business mixes.

In the past decade, global reinsurers' operating performance has improved in terms of two key ratios:

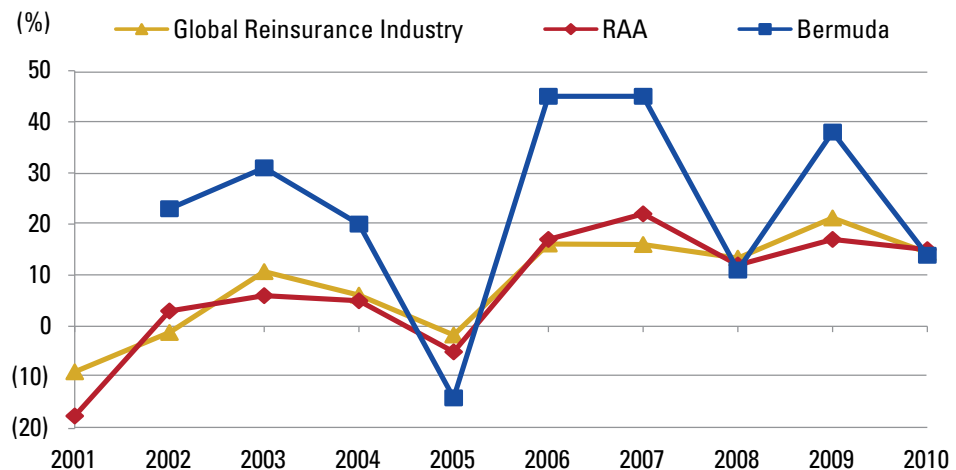
- Combined ratio (CR), which indicates how much of each unit of premium earned the insurer ultimately expects to pay out in claims and expenses, and

- Return on revenue (ROR), which we use to evaluate the size of the insurer's pretax operating margin.

That said, there has been significant earnings and balance sheet volatility during these years. The 10-year CR for the global reinsurance industry was 100%, indicating that it broke even on underwriting between 2001–2010 (see Chart 4). The industry's average return on revenue over this period stood at 9% (see Chart 5).

Operating performance in the past five years, has been

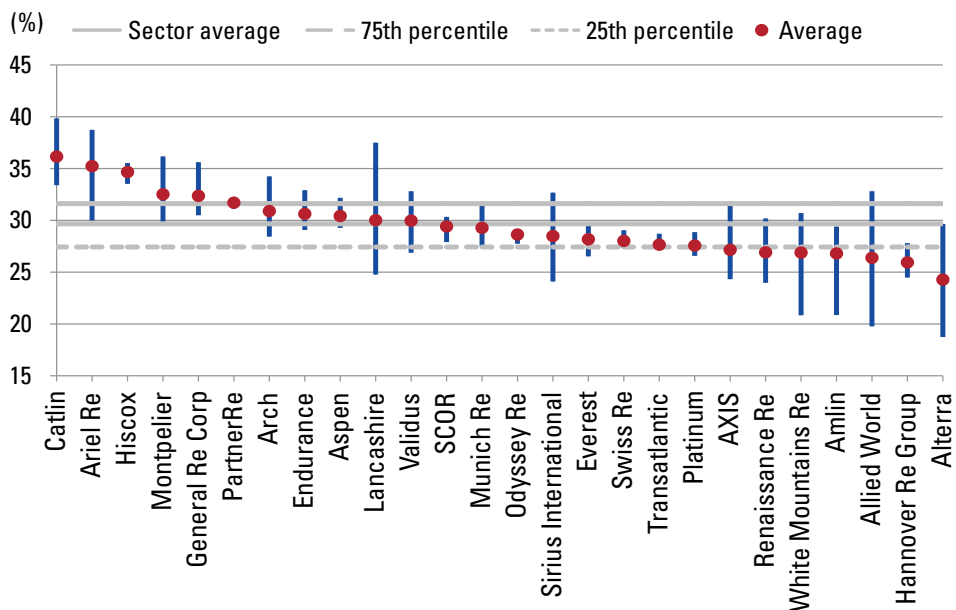
**Chart 5: Industry Trends – Return On Revenue**



Source: Company filings and surveys. RAA (Reinsurance Association of America)

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**Chart 6: Five-Year Historical Expense Ratio**



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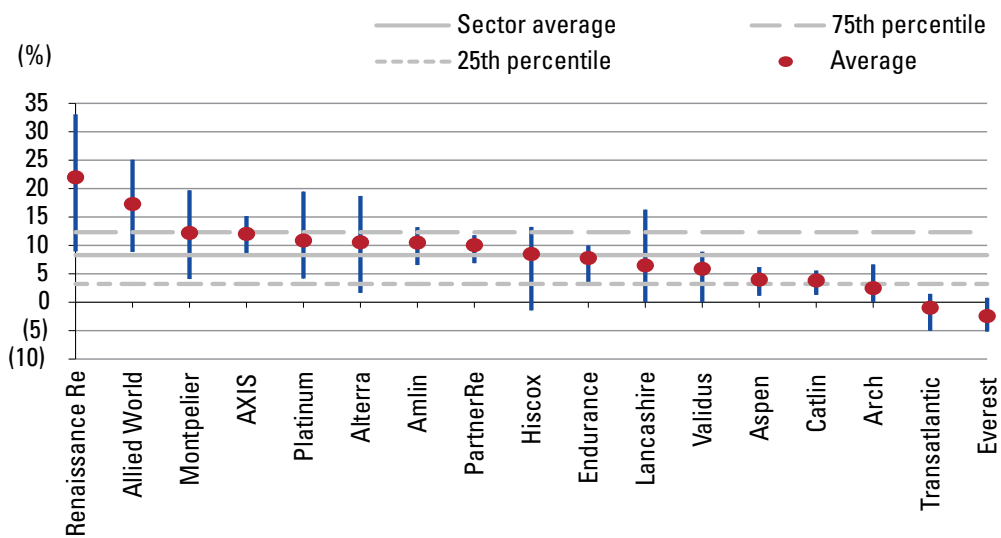
markedly better across the industry. The average CR was 92% over this period and the ROR was about 16%. In our view, the improvement mainly stems from a combination of benign catastrophe loss activity (especially in 2006, 2007, and 2009), reinsurers' ability to maintain underwriting discipline despite competitive market conditions, and favorable reserve development for prior years.

The overall five-year average loss ratio was about 62% and the expense ratio was around 30%. These are the components used to calculate the CR. Some players

have found expense ratios to be a source of competitive strength (see Chart 6). Typically, the large global players and hybrid reinsurers tend to benefit from lower expense ratios, achieving ratios of between 19% to 32% in the past five years. Meanwhile, property catastrophe players have reported expense ratios of 24%-40%.

We could attribute this benefit to the larger players' larger premium bases, which offer them economies of scale compared with the catastrophe players. However, some companies pursue a strategy of maintaining a low

**Chart 7: Five-Year Effect On Combined Ratio Of Reserve Releases**



© Standard & Poor's 2011.

## Peer Analysis

expense base to be more competitive than peers.

In recent years, companies' operating performance has benefited from favorable reserve development on prior accident years. These releases have reduced the sector's average combined ratio by 5.8% over the last five years (see Chart 7). We do not expect this trend to continue in coming years, and therefore expect it to be important that companies maintain their strong underlying operating performance through disciplined underwriting.

### **Adequate Pricing And Profitable Underwriting Expected To Remain The Key Priorities**

Over the years, the reinsurance sector has become more disciplined about pricing risks adequately. It has focused on underwriting profitable lines and improving the quality of capital and liquidity on balance sheets. Our peer group analysis highlights a recent trend toward short-tail lines as reinsurers' shift their books to more-profitable lines in the soft part of the cycle. As a result, we are also seeing an increase in aggregate capital levels because these are necessary to support these more-capital-intensive lines. While this shift has, in part, resulted in improved operating performance metrics in the past five years, we note the increased potential for volatility in the results. ■

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# For Some Reinsurers, Returns May Not Be Enough To Cover Their Cost Of Equity

By Laline Carvalho and Jason S Porter

**With many global reinsurers' common shares continuing to trade at a discount to their book value, the question is: Are reinsurers producing adequate returns to cover their cost of equity capital and meet investors' expectations?**



Reinsurers have, in general, produced disappointing results over the past nine years, with average returns on equity (ROEs) that only equaled the companies' estimated cost of equity capital. Nonetheless, our research showed significant differences among the best and worst performers in the sector: some companies produced healthy excess returns during this period, while others barely managed to cover their cost of equity.

The current valuations for most global reinsurers reflect, in our view, investors' relative skepticism about the reinsurance sector's future operating performance and whether the results will exceed the modest returns produced over the past decade. Reinsurers are facing several challenges, including:

- Reduced potential profit margins because of

declining premium rates for property and casualty reinsurance coverages in recent years. This trend has abated recently for property and property-catastrophe risks, following the large catastrophe loss events--the earthquakes in Japan and New Zealand and the catastrophe losses in Australia--in the first quarter of 2011;

- Prospects for dampened investment returns in the near term, given the current low interest rates;
- Continued significant frequency and severity of manmade and natural catastrophe losses in recent years and the potential that this trend may extend into the future. The current hurricane season is predicted to be an active one and has the potential to produce large catastrophe losses and further weaken operating performance for 2011 beyond

**Table 1: Reinsurer Peer Groups**

| Class of 2001                          | Global Multiline Reinsurers   |
|--|-------------------------------|
| Arch Capital Group Ltd.                | Everest Re Group Ltd.         |
| Allied World Assurance Co. Holdings AG | Hannover Rueckversicherung AG |
| Aspen Insurance Holdings Ltd.          | Munich Reinsurance Co.        |
| AXIS Capital Holdings Ltd.             | PartnerRe Ltd.                |
| Endurance Specialty Holdings Ltd.      | SCOR SE                       |
| Platinum Underwriters Holdings Ltd.    | Swiss Reinsurance Co. Ltd.    |
|  | Transatlantic Holdings Inc.   |

the significant catastrophe losses that have already occurred during the first half of the year;

- The recent increase in reinsurers' cost of equity capital, which may reflect the uncertainties we've noted above and the shift in investors' risk appetites and investment strategies following the financial crisis in 2008;
- Overreliance on favorable loss reserve development for prior years to bolster the sector's current earnings; and
- Continued uncertainty regarding global macroeconomic conditions and the potential negative impact on reinsurers' investment portfolios and loss reserves if inflation surges in coming years.

### Modest Returns In Excess Of The Cost Of Equity Capital

We analyzed the nine-year (2002-2010) return on equity (ROE) for a select number of publicly-owned global multiline reinsurers formed in 2001-2002 following the terrorist attacks of Sept. 11, 2001 (the class of 2001) and other reinsurers formed before that period (the global multiline reinsurers) (see Table 1). The average ROE for these companies during this period was a modest 9.9%. This was about equal to these companies' estimated cost of equity capital, based on Bloomberg's capital asset pricing model methodology, which derives the cost of equity based on market volatility, treasury rates, and an equity risk premium.

Although the average returns for the nine-year period were disappointing, the reinsurance sector performed more strongly during the past five years (2006-2010). The sector reported an average ROE of 12.2% and a modest estimated average return in excess of the cost of equity capital of about 1.6%.

We believe that two factors primarily explain reinsurers' improved operating performance from 2006 through 2010. The first is lower natural catastrophe losses during this period relative to earlier in the decade. Reinsurers reported depressed ROEs during 2008 because of the significant investment losses from the global capital market crisis and, to a lesser extent, Hurricanes Ike and Gustav. But the sector's average ROEs were generally strong in 2006, 2007, 2009, and, to a lesser degree, in 2010 because of moderate levels of catastrophe losses during these years. In contrast, the nine-year average ROE includes the steep losses reinsurers incurred due to U.S. Hurricanes Katrina, Rita, and Wilma in 2005. Hurricane Katrina alone represented the sector's largest catastrophe loss in history, \$47 billion in total insured damages.

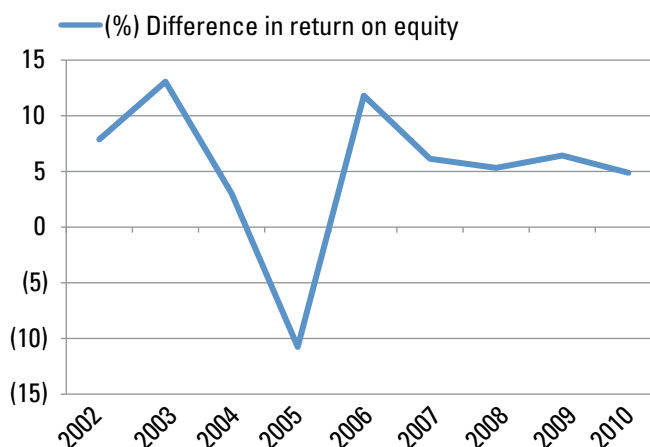
The second factor is the sector's shift toward a stronger loss reserve position in the second half of the decade. Over the past five years, reinsurers have generally reported loss reserve releases related to better-than-expected frequency and severity trends in reinsurance claims related to their casualty reinsurance lines of business. This represented a significant change from 2002-2005, when many of the longer-

standing reinsurers saw adverse loss reserve development for the U.S. casualty reinsurance business they wrote during the soft cycle in the late 1990s.

### The Class Of 2001 Reinsurers Outperform Their Peers

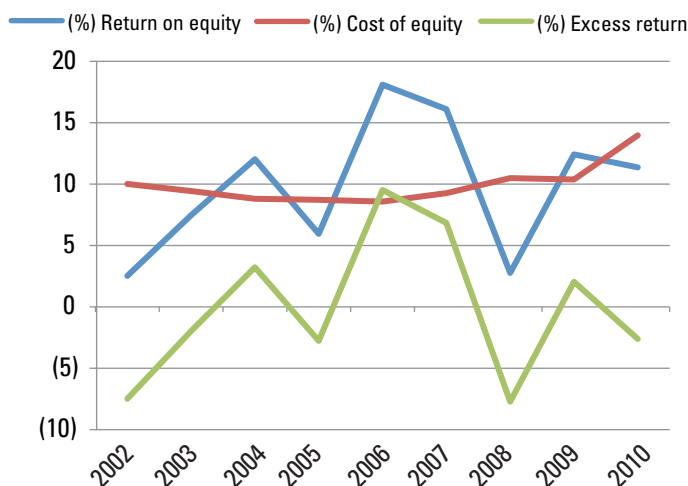
Unlike the global multiline reinsurers, which saw significant reserve deterioration earlier in the last decade, the class of 2001 reinsurers began operations with a clean slate. They had no exposure to the business written prior to their inception in the late-2001 to early-2002 period. This allowed these companies to substantially outperform the global multiline reinsur-

**Chart 1: Return On Equity: Class Of 2001 Versus Global Multiline Reinsurers**



Source: Company Filings, Bloomberg

**Chart 2: Global Multiline Reinsurer Returns**



Source: Company Filings, Bloomberg

## Returns On Equity

ers during the past decade. The nine-year and five-year average ROEs were 14.2% and 17.7%, respectively, compared with the significantly lower 8.9% and 10.7% (see Table 2). The class of 2001 also produced markedly higher returns in excess of estimated cost of equity capital: Its nine- and five-year excess returns were 5.0% and 7.8%, respectively, compared with -1.2% and 0.0% for the other reinsurers in our selected group.

### Reinsurers' Average ROE Continue To Decline From The 2006 Peak

Global multiline reinsurers started the past decade with relatively poor returns due to substantial losses from the Sept. 11 terrorist events and adverse loss reserve development for previous years. However, the sector's operating returns improved during 2002-2004, partly because of the significant premium rate increases in the property and casualty reinsurance lines of business following the steep losses in 2001.

Although Hurricanes Katrina, Rita, and Wilma disrupted the positive trend in 2005, the sector's average ROE peaked in 2006 at 18.1% (see chart 2). This reflected a light catastrophe year and strong pricing conditions in most reinsurance lines of business. Thereafter, weakening pricing conditions and other factors contributed to the sector's average ROE's steady decline--interrupted by a sharp drop to 2.8% in 2008--to 11.4% in 2010. 2008 was a difficult year for the reinsurance sector: The low average ROE reflected both the downturn in the global capital markets and the U.S. Hurricanes Ike and Gustav.

As the sector's average ROE declined during the second half of the decade, the cost of equity capital began a modest but steady upward trend. As a result, some reinsurers are finding it more difficult to report operating returns that meet or exceed their cost of capital (see Charts 2 and 3).

Although the class of 2001 mirrored the trends for the overall group, the class' average ROE outperformed global multiline reinsurers by an average

of 5.5% over five years and 4.4% over nine years (see table 2).

Also, the differential between the group's best and worst performers is substantial. The nine-year average ROE for individual companies range from as high as 17.5% to as low as 1.3%, with most reinsurers falling in the 10%-15% range (see Table 3).

### All In The Same Boat

Regardless of performance, reinsurers' common shares are trading, on average, at substantial discounts to their book values. In fact, although the class of 2001's common shares historically have traded at higher valuations relative to its global multiline peers', the class' common shares have been global trading at a similar discount since 2009--despite their higher returns and lower capital costs. For the overall sector, the current book value discounts are a part of a long-running trend of declining valuation since 2002 (see Chart 5).

We believe that the lack of differentiation between the class of 2001 and the global multiline reinsurers' valuations could indicate that investors are skeptical about whether the class of 2001 reinsurers will be able to sustain their relatively stronger operating performance. The steep discounts to the reinsurers' book value may also indicate that investors recognize that the reported earnings reflect large amounts of favorable loss reserve development in the casualty lines written in accident years 2003-2007 and likely are not sustainable.

Some class of 2001 reinsurers have experienced particularly strong favorable loss reserve development, which has reduced their calendar-year combined ratios, a key measure of underwriting profitability (under 100%) or losses (above 100%), by as much as five to 20 percentage points in recent years. Excluding the favorable impact of these loss reserve releases on earnings, many of the class of 2001 reinsurers' combined ratios--as with other reinsurers--are 100%

**Table 2: Selected Statistics**

|  | Combined group | Class of 2001 | Global Multiline reinsurers |
|--|----------------|---------------|-----------------------------|
| Five-year average return on equity (%) | 12.2           | 17.7          | 10.7                        |
| Nine-year average return on equity (%) | 9.9            | 14.2          | 8.9                         |
| Five-year cost of equity (%)           | 10.5           | 9.8           | 10.7                        |
| Nine-year cost of equity (%)           | 10.0           | 9.3           | 10.1                        |
| Five-year excess return (%)            | 1.6            | 7.8           | 0.0                         |
| Nine-year excess return (%)            | (0.1)          | 5.0           | (1.2)                       |
| Price-to-book value (x)*               | 0.78           | 0.81          | 0.77                        |

\*As of July 15, 2011. Price-to-book value and cost-of-equity data source: Bloomberg.

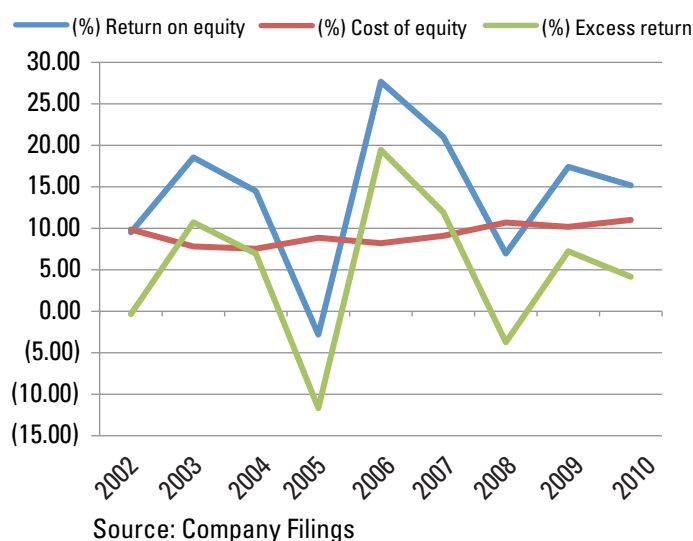
or higher. This translates into single-digit ROEs and reflects significant decreases in profit margins, given the competitive market conditions in recent years.

Because many reinsurers track growth in book value per share as a significant performance metric, many companies have been using the stock price discount relative to book value opportunistically to buy back shares--boosting the book value per share growth and reducing the reinsurers' equity base. However, equity base reductions could result in future capital shortfalls, which, in turn, could increase the cost of capital and partially, or entirely, offset valuation gains from previous share repurchase activity.

### Do Returns Appropriately Reflect Embedded Risk In Reinsurers' Profiles?

Most global reinsurers have generally targeted an ROE in the 13%-15% range over what most reinsurance management teams refer to as a full underwriting cycle, which includes a period of more competitive (or soft) pricing conditions followed by other years of strong pricing conditions. But only a few companies have been able to achieve this target over the long run. Many reinsurers entered 2011 targeting a significantly lower ROE of about 8%-10% because of the generally low interest rates and the competitive market conditions through the end of 2010. But if they allow pricing to erode to the point where the expected ROE for their modeled books of business enters the single-digit range (assuming a normalized level of catastrophe

**Chart 3: The Class Of 2001 Returns**



losses), these companies run the risk that such returns may easily turn into losses if above-average levels of catastrophe losses occur as the year unfolds.

The heavy catastrophe losses in the first quarter served as a poignant reminder of the magnitude of risks reinsurers assume and the sector's continued exposure to catastrophe losses. Assuming a normal level of catastrophe losses in the second half of the year, we expect

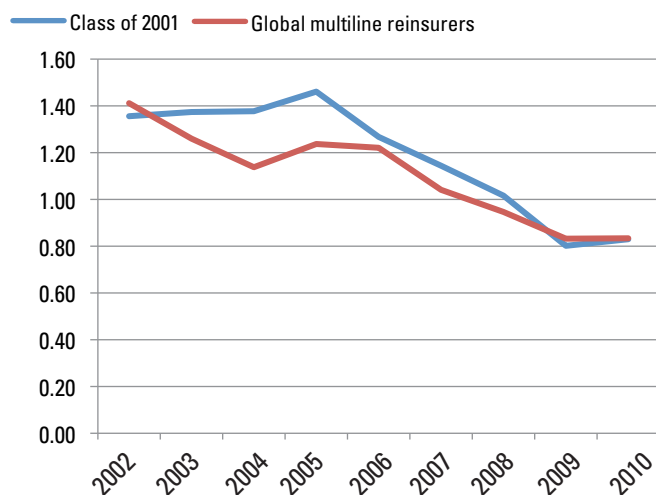
**Table 3: Rankings By Return On Equity**

| Company                                    | Nine-year average ROE | Five-year average ROE |
|--|-----------------------|-----------------------|
| AXIS Capital Holdings Ltd.                 | 17.5                  | 20.1                  |
| Arch Capital Group Ltd.                    | 15.6                  | 18.1                  |
| Hannover Rueckversicherung AG              | 14.3                  | 15.7                  |
| PartnerRe Ltd.                             | 13.4                  | 15.2                  |
| Allied World Assurance Company Holdings AG | 13.4                  | 19.2                  |
| Endurance Specialty Holdings Ltd.          | 13.3                  | 16.8                  |
| Platinum Underwriters Holdings Ltd.*       | 11.5                  | 16.1                  |
| Everest Re Group Ltd.                      | 10.3                  | 11.6                  |
| Transatlantic Holdings Inc.                | 10.2                  | 11.4                  |
| Aspen Insurance Holdings Ltd.              | 9.9                   | 12.9                  |
| Munich Reinsurance Co.                     | 8.8                   | 11.7                  |
| Swiss Reinsurance Co. Ltd.                 | 6.2                   | 7.6                   |
| SCOR SE                                    | 1.3                   | 11.8                  |

\*The data for Platinum Underwriters is only from 2003 to 2010. ROE--Return on equity.

## Returns On Equity

**Chart 4: Global Multiline Reinsurers  
Price-To-Book Valuations**



Source: Company Filings

that most reinsurers will report, at best, single-digit ROEs for full-year 2011. We believe that single-digit operating returns over the long term aren't consistent with the significant degree of uncertainty and volatility reinsurers are exposed to. Therefore, to the degree that any one year (or several years) of heavy catastrophe activity can lead the sector to report steep losses, we believe that reinsurers need to achieve solid double-digit ROEs in years of light catastrophe activity if they are to meet their long-term operating targets.

While Standard & Poor's does not rely heavily on RoE as a measure of core operating performance, we consider the metric to be one indicator of financial flexibility, and we may become concerned if management teams accept returns that are inadequate to attract support from the capital markets.

Given the significant catastrophe events in the first half of the year and the recent revisions in Risk Management Solutions Inc.'s catastrophe model, which is likely to lead to an increase in estimated probable maximum losses for a number of insurers and reinsurers with risks based in the Gulf of Mexico and the North Atlantic coast, we have observed improved premium rates in many pockets of the property and property catastrophe reinsurance market in recent months. This included increased premium rates in several countries in the Asia-Pacific region as well as in Florida. We expect that these price increases will continue into the Jan. 1, 2012, renewal season. However, while this turn in pricing is good news for reinsurers, not all property markets have shown improvements. In addition, casualty reinsurance premium rates, which have been under increasing pressure since 2004, have yet to show signs of significant premium rate increases.

### The Going Will Remain Tough

Global reinsurers have had mixed performance results over the past decade. The sector's improved returns during 2006-2010 are an encouraging development since the decade's earlier years. Nonetheless, we believe that reinsurance management teams will have a tough road ahead--with continued exposure to catastrophe losses and low interest rates, uncertain global macroeconomic conditions, and dampened profit margins, to name a few.

Reinsurers, ultimately, are at risk of losing support from the capital markets--and face weakened liquidity and credit quality--if they don't improve their profitability through core operations. The challenges reinsurers face will continue to test their ability to manage catastrophe activities, the strength of their enterprise risk management and risk mitigation and underwriting capabilities, as well as their ability to push for further improvements in reinsurance premium rates to cover (and exceed) their cost of capital and provide a healthy return to their shareholders. But just as some reinsurers have managed to post stronger-than-average performance results in recent years despite the challenging macroeconomic and sector conditions, it's possible that global reinsurers could still beat investors' expectations in the years to come. ■

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## Top 40 Global Reinsurance Groups

### Top 40 Global Reinsurance Groups Ranked By Net Reinsurance Premiums Written

| Ranking | Company                                  | Footnote | Country     | Net Reinsurance Premium Written (Mil. \$) |                  |
|---------|--|----------|-------------|---|------------------|
|         |  |          |             | 2010                                      | 2009             |
| 1       | Munich Reinsurance Co.                   | 1        | Germany     | 29,269.1                                  | 29,387.4         |
| 2       | Swiss Reinsurance Co.                    | 2,3      | Switzerland | 19,433.0                                  | 21,757.0         |
| 3       | Berkshire Hathaway Re                    | 4        | U.S.        | 14,669.0                                  | 12,362.0         |
| 4       | Hannover Rueckversicherung AG            |          | Germany     | 13,652.2                                  | 13,639.0         |
| 5       | Lloyd's                                  | 5        | U.K.        | 9,762.1                                   | 9,733.5          |
| 6       | SCOR SE                                  |          | France      | 8,141.3                                   | 8,314.7          |
| 7       | Reinsurance Group of America, Inc.       |          | U.S.        | 6,659.7                                   | 5,725.2          |
| 8       | PartnerRe Ltd.                           | 6        | Bermuda     | 4,705.1                                   | 3,948.7          |
| 9       | Everest Reinsurance Co.                  |          | Bermuda     | 3,945.6                                   | 3,929.8          |
| 10      | Transatlantic Holdings Inc.              | 7        | U.S.        | 3,881.7                                   | 3,986.1          |
| 11      | Korean Reinsurance Co.                   |          | Korea       | 2,757.4                                   | 2,493.8          |
| 12      | Tokio Marine Group                       | 8        | Japan       | 2,617.2                                   | 2,242.6          |
| 13      | NKSJ Holdings                            | 9        | Japan       | 2,526.1                                   | NA               |
| 14      | General Ins. Corp. of India              |          | India       | 2,361.3                                   | 1,955.0          |
| 15      | QBE Insurance Group Ltd.                 |          | Australia   | 2,184.0                                   | 1,721.0          |
| 16      | Mapfre Re                                |          | Spain       | 2,125.2                                   | 2,006.8          |
| 17      | Transamerica Re (AEGON)                  |          | U.S.        | 2,037.8                                   | 2,013.7          |
| 18      | XL Re Ltd                                |          | Bermuda     | 1,920.5                                   | 2,003.2          |
| 19      | Odyssey Re                               |          | U.S.        | 1,853.8                                   | 1,893.8          |
| 20      | AXIS Capital Holdings Ltd.               | 4        | Bermuda     | 1,815.3                                   | 1,791.4          |
| 21      | Toa Re Co. Ltd.                          |          | Japan       | 1,798.7                                   | 1,560.9          |
| 22      | Validus Holdings Ltd                     | 10       | Bermuda     | 1,761.1                                   | 1,388.4          |
| 23      | Caisse Centrale de Reassurance           |          | France      | 1,759.9                                   | 1,715.5          |
| 24      | ACE Tempest Reinsurance Ltd.             |          | Bermuda     | 1,431.8                                   | 1,403.0          |
| 25      | Allied World Assurance Co. Holdings Ltd. |          | Switzerland | 1,392.5                                   | 1,321.1          |
| 26      | R+V Versicherung AG                      |          | Germany     | 1,387.1                                   | 1,214.5          |
| 27      | White Mountains Re Group Ltd.            |          | Bermuda     | 1,301.4                                   | 1,445.5          |
| 28      | Maiden Re                                |          | U.S.        | 1,227.8                                   | 1,030.4          |
| 29      | Catlin Group Ltd.                        | 11       | Bermuda     | 1,141.9                                   | 992.7            |
| 30      | Aspen Insurance Holdings Ltd.            |          | Bermuda     | 1,118.5                                   | 1,116.7          |
| 31      | Alterra Capital Holdings Ltd             | 12       | Bermuda     | 1,040.0                                   | 895.0            |
| 32      | Endurance Specialty Holdings Ltd.        | 8        | Bermuda     | 933.9                                     | 865.7            |
| 33      | Flagstone Reinsurance Ltd.               |          | Bermuda     | 883.9                                     | 792.5            |
| 34      | Arch Capital Group Ltd.                  |          | Bermuda     | 852.1                                     | 1,058.8          |
| 35      | Amlin Group                              |          | U.K.        | 851.8                                     | 914.0            |
| 36      | RenaissanceRe Holdings Ltd.              |          | Bermuda     | 809.7                                     | 839.0            |
| 37      | Deutsche Rueckversicherung AG            |          | Germany     | 796.8                                     | 953.0            |
| 38      | Platinum Underwriters Holdings, Ltd.     |          | Bermuda     | 760.6                                     | 897.8            |
| 39      | Montpelier Re Holdings Ltd.              |          | Bermuda     | 668.8                                     | 602.2            |
| 40      | African Reinsurance Corp.                |          | Nigeria     | 569.7                                     | 487.1            |
|         | <b>Total</b>                             |          |             | <b>158,805.3</b>                          | <b>152,398.6</b> |

1 In Q1 2010 Munich Re introduced a third segment "Munich Health" which is made up of Health Reinsurance and Primary Health insurance outside of Germany.

In this survey the reinsurance segments P&C and Life are disclosed. 2009 YE figures are different from last year's publication due to different segmentation.

2 Excluding non traditional and legacy business the combined ratios would have been 93.9% and 88.3%, respectively.

3 From January 1, 2010, Swiss Re changed its presentation currency from CHF to USD.

4 Adjusted Shareholders' Funds are for the group as a whole, including both its direct and reinsurance operations.

5 Net Premium Written, pretax operating income and the combined ratio relate to reinsurance business only; all other items include direct business.

The data presented is based on the published pro forma accounts for the Market, which represents an aggregation of all syndicates participating at Lloyd's. As such, some premium included for Lloyd's may also be included by other groups that consolidate their Lloyd's operations.

6 On October 2, 2009, Partner Re acquired Paris Re. The Company's results for the year ended December 31, 2009 include the results of Paris Re from the date of acquisition.



| Pretax Operating Income<br>(Mil. \$) |                 | Combined Ratio (%) |             | Total Adjusted Shareholders'<br>Funds (Mil. \$) |                  | ROR (%)    |             |
|--------------------------------------|-----------------|--------------------|-------------|---|------------------|------------|-------------|
| 2010                                 | 2009            | 2010               | 2009        | 2010  | 2009             | 2010       | 2009        |
| 3,620.7                              | 6,064.4         | 101.0              | 95.7        | 29,037.2  | 30,372.1         | 9.4        | 15.2        |
| 1,022.0                              | 1,146.0         | 94.5               | 93.2        | 26,608.0  | 26,253.0         | 4.1        | 3.9         |
| NA                                   | NA              | 93.2               | 93.4        | 94,400.0  | 64,146.0         | NA         | NA          |
| 1,280.8                              | 1,221.5         | 98.5               | 97.3        | 9,443.9   | 8,117.6          | 8.6        | 8.3         |
| 912.8                                | 1,983.0         | 90.3               | 78.4        | 28,142.9  | 28,929.8         | 8.0        | 16.5        |
| 502.3                                | 560.4           | 99.1               | 99.6        | 5,758.4   | 5,581.4          | 5.8        | 6.2         |
| 757.0                                | 644.2           | NM                 | NM          | 5,040.6   | 3,867.9          | 9.4        | 9.2         |
| 512.0                                | 1,155.7         | 95.0               | 81.8        | 7,206.9   | 7,645.7          | 9.4        | 24.4        |
| 489.3                                | 863.4           | 102.8              | 89.1        | 6,283.5   | 6,101.7          | 10.6       | 19.5        |
| 442.8                                | 656.8           | 98.2               | 93.5        | 4,284.5   | 4,034.4          | 10.2       | 14.6        |
| 125.8                                | 90.3            | 97.7               | 94.8        | 1,166.4   | 984.2            | 4.3        | 3.5         |
| 1,759.0                              | 1,598.2         | NA                 | NA          | 20,229.6  | 20,775.7         | NA         | NA          |
| NA                                   | NA              | NA                 | NA          | 17,860.1  | NA               | NA         | NA          |
| 267.1                                | 287.4           | 111.4              | 109.7       | 2,229.5   | 2,034.3          | 10.9       | 13.8        |
| 394.3                                | 470.7           | 83.7               | 82.1        | 1,639.3   | 1,451.3          | 20.0       | 25.1        |
| 229.9                                | 227.9           | 95.7               | 93.5        | 1,124.4   | 1,203.6          | 10.9       | 11.4        |
| 154.5                                | 285.0           | NM                 | NM          | NA  | NA               | NA         | NA          |
| NA                                   | NA              | 80.1               | 82.1        | NA  | NA               | NA         | NA          |
| 261.1                                | 305.4           | 98.6               | 96.7        | 3,669.0   | 3,554.9          | 11.8       | 13.6        |
| NA                                   | NA              | 88.6               | 73.1        | 5,625.0   | 5,500.2          | NA         | NA          |
| -20.0                                | 233.4           | 111.2              | 93.1        | 3,152.8   | 3,052.2          | -1.1       | 13.9        |
| 325.9                                | 529.5           | 89.4               | 72.0        | 3,504.8   | 4,031.1          | 17.1       | 33.7        |
| 232.9                                | 1,004.6         | 101.0              | 56.3        | 5,117.8   | 5,592.9          | 11.7       | 50.3        |
| 755.6                                | 832.1           | 72.5               | 59.3        | NA  | NA               | 42.5       | 49.3        |
| 692.0                                | 643.5           | 84.9               | 76.1        | 3,075.8   | 3,213.3          | 43.1       | 39.7        |
| 307.3                                | 335.7           | 99.9               | 99.4        | 5,685.0   | 5,334.5          | 17.7       | 21.6        |
| 137.7                                | 462.8           | 95.2               | 86.6        | 2,028.4   | 2,056.5          | 9.5        | 24.9        |
| 64.6                                 | 62.1            | 96.9               | 95.9        | 750.4   | 676.5            | 5.2        | 6.3         |
| 92.5                                 | 102.0           | 72.3               | 62.7        | 3,446.9   | 3,278.0          | 7.5        | 9.0         |
| 340.3                                | 534.7           | 78.5               | 58.6        | 3,236.9   | 3,305.4          | 24.6       | 37.8        |
| 329.0                                | 204.0           | 85.7               | 88.1        | 2,918.0   | 1,565.0          | 23.5       | 20.3        |
| 345.5                                | 509.3           | 87.0               | 75.9        | 2,848.2   | 2,787.3          | 30.9       | 46.5        |
| 32.1                                 | 229.8           | 101.7              | 74.7        | 1,134.7   | 1,211.0          | 3.3        | 26.7        |
| 573.8                                | 648.6           | 74.3               | 73.7        | 3,954.0   | 3,794.0          | 46.5       | 42.7        |
| 106.4                                | 575.5           | 83.7               | 41.4        | 2,676.3   | 2,537.5          | 12.6       | 61.1        |
| NA                                   | NA              | 38.4               | 15.4        | 3,386.3   | 3,190.8          | N/A        | N/A         |
| 20.0                                 | 48.8            | 105.0              | 99.7        | 810.6   | 828.3            | 2.3        | 4.7         |
| 187.7                                | 323.5           | 89.3               | 80.0        | 1,895.5   | 2,077.7          | 20.5       | 29.3        |
| 164.0                                | 270.8           | 82.0               | 62.2        | 1,628.8   | 1,728.5          | 23.4       | 41.4        |
| 68.3                                 | 46.1            | 93.5               | 97.4        | 339.7   | 277.9            | 11.3       | 9.2         |
| <b>17,487.0</b>                      | <b>25,157.0</b> | <b>95.4</b>        | <b>89.9</b> | <b>321,340.2</b>                                | <b>271,092.2</b> | <b>9.9</b> | <b>14.5</b> |

7 Net Reinsurance Premium Written and Combined Ratio relate to reinsurance business only; all other items include direct business.

8 2010 premium numbers are Sampo Japan and Nipponkoa combined. 2010 Net Income and Adjusted Shareholders Funds are total group business numbers, including reinsurance and non-reinsurance.

9 On July 8, 2009, Validus Holdings Ltd acquired IPC Holdings Ltd. The 2009 data presented includes the operations of IPC Re from the date of the acquisition.

10 Pre tax operating income does not include net investment income. Adjusted Shareholders' Funds are for the group as a whole, including both its direct and reinsurance business.

11 On May 12, 2010 Harbor Point Ltd. and Max Capital Group Ltd merged to form Alterra Capital Holdings Ltd. 2010 figures reflect the combined results including Harbor Point Limited from May 12, 2010, the date of the amalgamation. The 2009 figures were as reported for Max Capital only, they are not proforma including Harbor Point.

## Global Reinsurers By Country

# Global Reinsurers By Country

To bring you the 2011 edition of Global Reinsurance Highlights, Standard & Poor's Ratings Services sought data on 145 reinsurance organizations from over 40 countries. As in previous years, the data is based on survey responses from reinsurance organizations worldwide.

To ensure consistency, we requested that respondents complied with clear guidance on the definition of the financial items required. In addition, Standard & Poor's attempted to verify the veracity of the data submitted with reference to publicly available data sources, insofar as this was possible.

Our ongoing aim in producing this data is to provide market participants with an indication of the ongoing reinsurance capacity available in each market. Hence, we try to exclude intragroup reinsurance as far as possible. Companies that have not been able to exclude intragroup reinsurance are highlighted in the footnotes on page 64-65.

One of the challenges has been to separate reinsurance from primary insurance business, especially when the reinsurance operation is a division within a company and not a distinct operation. While, generally speaking, all the premium data relates to a com-

| Rating As Of<br>August 24, 2010 | Company                                    | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |              |             |
|---------------------------------|--|-----------|---|--------------|-------------|
|                                 |  |           | 2010  | 2009         | Change (%)  |
| <b>Australia</b>                |  |           |   |              |             |
| A+                              | Swiss Re Life & Health Australia Ltd.      |           | 474.6   | 377.4        | 25.7        |
| AA-                             | Munich Reinsurance Co. of Australasia Ltd. |           | 315.3   | 235.8        | 33.7        |
| AA-                             | Hannover Life Re of Australasia Ltd.       |           | 231.4   | 184.9        | 25.2        |
| AA+                             | General Reinsurance Life Australia Ltd.    |           | 165.0   | 130.6        | 26.3        |
| AA+                             | General Reinsurance Australia Ltd.         |           | 67.8  | 67.1         | 1.0         |
|                                 | <b>Total:</b>                              |           | <b>1,254.0</b>                                | <b>995.8</b> | <b>25.9</b> |
| <b>Bahrain</b>                  |  |           |   |              |             |
| BBB+                            | Trust International Insurance Co. B.S.C.   |           | 190.0   | 141.2        | 34.6        |
| A                               | Hannover Re Takaful                        |           | 79.7  | 53.8         | 48.2        |
|                                 | <b>Total:</b>                              |           | <b>269.7</b>                                  | <b>195.0</b> | <b>38.3</b> |
| <b>Belgium</b>                  |  |           |   |              |             |
| A                               | Secura N.V.                                |           | 267.4   | 272.3        | -1.8        |
|                                 | <b>Total:</b>                              |           | <b>267.4</b>                                  | <b>272.3</b> | <b>-1.8</b> |

pany's reinsurance premium written, in some cases the other metrics will also include primary business. These cases can be identified through the footnotes to the tables, although if we believe the metrics provided by the company are not representative of the company's reinsurance operations, we have marked the metric as N.A. (not applicable). For companies that report in currencies other than the U.S. dollar, we have converted the reported data at year-end exchange rates.

Standard & Poor's has endeavored to collect the data underlying each group or entity's combined ratio in order to calculate this metric in a comparable manner. The combined ratios presented in Global Reinsurance Highlights have been calculated as: (net losses incurred + net underwriting expenses)/ net premiums earned. The combined ratio of any

entity that writes purely life reinsurance has been marked as N.M. (not meaningful), as Standard & Poor's does not consider this to be an accurate measure of a life reinsurer's profitability. For those groups or entities writing both non-life and life reinsurance business, the combined ratio reflects non-life business only.

The main group and country listing for each entity surveyed is representative of that group or company's total reinsurance business written, whether it be life, non-life, or a combination of both. ■

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|  | Pretax Operating Income (Mil. \$) |              | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |              |             | Return on Revenue (%) |             |
|--|-----------------------------------|--------------|--------------------|-------------|--|--------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009         | 2010               | 2009        | 2010   | 2009         | Change (%)  | 2010                  | 2009        |
|  | 24.8                              | 107.4        | NM                 | NM          | 301.4  | 270.1        | 11.6        | 4.8                   | 25.7        |
|  | 28.5                              | 27.5         | NM                 | NM          | 201.4  | 144.2        | 39.6        | 8.1                   | 10.4        |
|  | 21.0                              | 48.7         | NM                 | NM          | 255.7  | 201.2        | 27.1        | 7.5                   | 21.8        |
|  | 17.9                              | 16.2         | NM                 | NM          | 95.0   | 75.4         | 26.0        | 10.1                  | 11.3        |
|  | 6.8                               | 134.9        | 139.5              | 82.6        | 267.1  | 295.7        | -9.7        | 6.0                   | 120.8       |
|  | <b>99.0</b>                       | <b>334.5</b> | <b>NM</b>          | <b>NM</b>   | <b>1,120.6</b>                               | <b>986.7</b> | <b>13.6</b> | <b>6.8</b>            | <b>28.8</b> |
|  |                                   |              |                    |             |  |              |             |                       |             |
|  | 16.9                              | 12.7         | 89.6               | 90.4        | 206.2  | 192.3        | 7.2         | 10.3                  | 10.6        |
|  | 13.2                              | 3.2          | 97.5               | 97.5        | 75.1   | 58.2         | 29.2        | 19.1                  | 6.3         |
|  | <b>30.1</b>                       | <b>15.9</b>  | <b>91.9</b>        | <b>92.5</b> | <b>281.3</b>                                 | <b>250.5</b> | <b>12.3</b> | <b>12.9</b>           | <b>9.3</b>  |
|  |                                   |              |                    |             |  |              |             |                       |             |
|  | 49.2                              | 54.7         | 99.1               | 96.6        | 301.9  | 294.0        | 2.7         | 16.1                  | 16.8        |
|  | <b>49.2</b>                       | <b>54.7</b>  | <b>99.1</b>        | <b>96.6</b> | <b>301.9</b>                                 | <b>294.0</b> | <b>2.7</b>  | <b>16.1</b>           | <b>16.8</b> |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company                                  | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                 |              |
|---------------------------------|--|-----------|---|-----------------|--------------|
|                                 |  |           | 2010  | 2009            | Change (%)   |
| <b>Bermuda</b>                  |  |           |   |                 |              |
| A+                              | Everest Reinsurance (Bermuda) Ltd.       |           | 1,859.9                                       | 1,752.3         | 6.1          |
| AA-                             | ACE Tempest Reinsurance Ltd.             |           | 1,075.2                                       | 1,037.8         | 3.6          |
| A-                              | Validus Reinsurance Ltd. (Bermuda)       |           | 1,038.1                                       | 672.6           | 54.3         |
| A                               | Endurance Specialty Insurance Ltd.       |           | 933.9   | 865.7           | 7.9          |
| A+                              | Arch Reinsurance Ltd.                    |           | 783.4   | 973.1           | -19.5        |
| A                               | Platinum Underwriters Bermuda Ltd.       |           | 760.6   | 897.8           | -15.3        |
| A                               | XL Re Ltd.                               |           | 682.5   | 764.3           | -10.7        |
| A-                              | Montpelier Re Holdings Ltd.              |           | 668.8   | 602.2           | 11.1         |
| A+                              | AXIS Specialty Ltd.                      | 1         | 633.4   | 635.8           | -0.4         |
| AA-                             | Partner Reinsurance Company Ltd.         |           | 581.0   | 476.1           | 22.0         |
| AA-                             | Renaissance Reinsurance Ltd.             |           | 544.9   | 503.7           | 8.2          |
| A-                              | Ariel Reinsurance Company Ltd.           |           | 495.6   | 476.6           | 4.0          |
| AA-                             | Tokio Millennium Re Ltd.                 |           | 418.3   | 360.6           | 16.0         |
| A                               | Amlin Bermuda Ltd.                       |           | 409.5   | 376.2           | 8.9          |
| A                               | Catlin Insurance Co. Ltd.                | 1,2       | 404.9   | 355.2           | 14.0         |
| AA-                             | ACE Tempest Life Reinsurance, Ltd.       |           | 356.6   | 365.2           | -2.4         |
| A                               | Aspen Insurance Ltd.                     |           | 335.3   | 355.0           | -5.5         |
| A+                              | DaVinci Reinsurance Ltd.                 |           | 326.1   | 332.1           | -1.8         |
| AA-                             | Hannover Re Bermuda Ltd.                 |           | 232.9   | 307.2           | -24.2        |
| NR                              | Hiscox Insurance Co. (Bermuda) Ltd.      |           | 222.2   | 213.6           | 4.0          |
| A-                              | Lancashire Insurance Co. Ltd.            | 3         | 165.7   | 144.0           | 15.1         |
| BBB+                            | International General Insurance Co. Ltd. |           | 111.2   | 93.6            | 18.8         |
| AA-                             | MS Frontier Reinsurance Ltd.             |           | 83.0  | 83.4            | -0.5         |
| AA                              | Top Layer Reinsurance Ltd.               |           | 26.9  | 28.2            | -4.6         |
|                                 | <b>Total:</b>                            |           | <b>13,149.9</b>                               | <b>12,672.3</b> | <b>3.8</b>   |
| <b>Bosnia and Herzegovina</b>   |  |           |   |                 |              |
| NR                              | Bosna Re                                 |           | 15.8  | 15.6            | 1.2          |
|                                 | <b>Total:</b>                            |           | <b>15.8</b>                                   | <b>15.6</b>     | <b>1.2</b>   |
| <b>Brazil</b>                   |  |           |   |                 |              |
| NR                              | IRB-Brasil Resseguros S.A.               | 4         | 547.1   | 915.3           | -40.2        |
|                                 | <b>Total:</b>                            |           | <b>547.1</b>                                  | <b>915.3</b>    | <b>-40.2</b> |

|  | Pretax Operating Income (Mil. \$) |                 | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |                  |             | Return on Revenue (%) |             |
|--|-----------------------------------|-----------------|--------------------|-------------|--|------------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009            | 2010               | 2009        | 2010   | 2009             | Change (%)  | 2010                  | 2009        |
|  | 353                               | 482.4           | 96.4               | 89.8        | 2,982.60                                     | 2,722.60         | 9.6         | 17.1                  | 23.9        |
|  | 583.4                             | 677.9           | 72.5               | 59.3        | NA   | NA               | NA          | 42.9                  | 53.9        |
|  | 335.4                             | 456.1           | 80.1               | 55.3        | 3,414.40                                     | 3,764.70         | -9.3        | 28.5                  | 50.9        |
|  | 345.5                             | 509.3           | 87                 | 75.9        | 2,848.20                                     | 2,787.30         | 2.2         | 30.9                  | 46.5        |
|  | 503.7                             | 570.6           | 73.6               | 72.1        | 2,848.60                                     | 2,734.50         | 4.2         | 43.9                  | 40.4        |
|  | 187.7                             | 323.5           | 89.3               | 80          | 1,895.50                                     | 2,077.70         | -8.8        | 20.5                  | 29.3        |
|  | NA                                | NA              | 52.4               | 51.9        | NA   | NA               | NA          | NA                    | NA          |
|  | 164                               | 270.8           | 82                 | 62.2        | 1,628.80                                     | 1,728.50         | -5.8        | 23.4                  | 41.4        |
|  | NA                                | NA              | 85.6               | 36.3        | 4,545.80                                     | 4,449.40         | 2.2         | NA                    | NA          |
|  | 356.5                             | 645.1           | 76.7               | 18.3        | 3,446.40                                     | 3,300.20         | 4.4         | 44.5                  | 80.9        |
|  | NA                                | NA              | 34.6               | 11.5        | 1,600.00                                     | 1,600.00         | 0           | NA                    | NA          |
|  | 179.4                             | 299.4           | 73.8               | 47.1        | 1,338.20                                     | 1,522.00         | -12.1       | 33.2                  | 58.8        |
|  | 64.5                              | 200.5           | 83                 | 30.2        | 1,187.60                                     | 1,241.50         | -4.3        | 16.7                  | 51.9        |
|  | 48.1                              | 274.8           | 79.7               | 44.6        | 1,680.60                                     | 1,580.60         | 6.3         | 11.7                  | 65.9        |
|  | 87                                | 91              | 68.3               | 61.2        | 3,862.90                                     | 3,956.30         | -2.4        | 18                    | 20.1        |
|  | 172.2                             | 154.2           | NM                 | NM          | NA   | NA               | NA          | 41.1                  | 36          |
|  | 225                               | 287.7           | 62.6               | 38.3        | 1,743.70                                     | 1,755.40         | -0.7        | 46.1                  | 56.5        |
|  | NA                                | NA              | 57.9               | 28.4        | 1,488.90                                     | 1,473.70         | 1           | NA                    | NA          |
|  | 26.8                              | 292.2           | 121.8              | 31.8        | 1,185.90                                     | 1,307.20         | -9.3        | 8.6                   | 75.4        |
|  | 72.2                              | 137.6           | 66.2               | 37.8        | 941.8  | 807.9            | 16.6        | 29.7                  | 55.6        |
|  | 303                               | 366.8           | 73.4               | 13.6        | 1,394.50                                     | 1,268.10         | 10          | 50.9                  | 62.1        |
|  | 7.3                               | 10.3            | 92.5               | 97.3        | 187.8  | 171.3            | 9.6         | 6.8                   | 9.8         |
|  | 69.6                              | 81.6            | 46.2               | 25.1        | 688.6  | 525.7            | 31          | 63.9                  | 79.6        |
|  | NA                                | NA              | 196.7              | 22.2        | 30.2   | 53.2             | -43.2       | NA                    | NA          |
|  | <b>4,084.30</b>                   | <b>6,131.80</b> | <b>78.3</b>        | <b>57.3</b> | <b>40,941.00</b>                             | <b>40,827.70</b> | <b>0.3</b>  | <b>28.9</b>           | <b>44.6</b> |
|  |                                   |                 |                    |             |  |                  |             |                       |             |
|  | 1.4                               | 1.6             | 85.4               | 90          | 14.1   | 14.2             | -0.6        | 9                     | 9.3         |
|  | <b>1.4</b>                        | <b>1.6</b>      | <b>85.4</b>        | <b>90</b>   | <b>14.1</b>                                  | <b>14.2</b>      | <b>-0.6</b> | <b>9</b>              | <b>9.3</b>  |
|  |                                   |                 |                    |             |  |                  |             |                       |             |
|  | 361.3                             | 307.7           | 83.5               | 88.9        | 1,252.90                                     | 1,149.60         | 9           | 38.3                  | 27.1        |
|  | <b>361.3</b>                      | <b>307.7</b>    | <b>83.5</b>        | <b>88.9</b> | <b>1,252.90</b>                              | <b>1,149.60</b>  | <b>9</b>    | <b>38.3</b>           | <b>27.1</b> |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company                              | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                 |             |
|---------------------------------|--------------------------------------|-----------|---|-----------------|-------------|
|                                 |                                      |           | 2010  | 2009            | Change (%)  |
| <b>Canada</b>                   |                                      |           |   |                 |             |
| AA-                             | Munich Reinsurance Co. of Canada     |           | 188.5   | 179.5           | 5.1         |
| A                               | SCOR Canada Reinsurance Co.          |           | 158.6   | 145.1           | 9.3         |
|                                 | <b>Total:</b>                        |           | <b>347.1</b>                                  | <b>324.5</b>    | <b>7.0</b>  |
| <b>Czech Republic</b>           |                                      |           |   |                 |             |
| A+                              | VIG Re                               |           | 235.0   | 235.2           | -0.1        |
|                                 | <b>Total:</b>                        |           | <b>235.0</b>                                  | <b>235.2</b>    | <b>-0.1</b> |
| <b>France</b>                   |                                      |           |   |                 |             |
| A                               | SCOR Global Life SE                  |           | 1,855.4                                       | 1,796.0         | 3.3         |
| AAA                             | Caisse Centrale de Reassurance       |           | 1,759.9                                       | 1,715.5         | 2.6         |
| A                               | SCOR SE                              |           | 1,196.7                                       | 1,338.7         | -10.6       |
| A                               | SCOR Global P&C SE                   |           | 959.5   | 1,016.2         | -5.6        |
|                                 | <b>Total:</b>                        |           | <b>5,771.6</b>                                | <b>5,866.4</b>  | <b>-1.6</b> |
| <b>Germany</b>                  |                                      |           |   |                 |             |
| AA-                             | Munich Reinsurance Co.               |           | 25,018.9                                      | 24,591.8        | 1.7         |
| AA-                             | Hannover Rueckversicherung AG        | 5         | 8,720.4                                       | 9,288.1         | -6.1        |
| AA                              | Allianz SE                           | 1         | 4,140.7                                       | 4,530.2         | -8.6        |
| AA-                             | E+S Rueckversicherung AG             | 5         | 2,613.9                                       | 2,853.7         | -8.4        |
| AA+                             | GR-AG                                | 6         | 2,519.1                                       | 2,601.3         | -3.2        |
| A+                              | R+V Versicherung AG                  |           | 1,387.1                                       | 1,214.5         | 14.2        |
| A+                              | Deutsche Rueckversicherung AG        |           | 458.2   | 529.6           | -13.5       |
| BBB-                            | Wuestenrot & Wuerttembergische AG    |           | 266.9   | 286.9           | -6.9        |
| A+                              | DEVK                                 |           | 194.8   | 260.7           | -25.3       |
|                                 | <b>Total:</b>                        |           | <b>45,320.0</b>                               | <b>46,156.7</b> | <b>-1.8</b> |
| <b>Hong Kong</b>                |                                      |           |   |                 |             |
| A-                              | Taiping Reinsurance Co Ltd.          |           | 304.1   | 193.4           | 57.2        |
| A                               | SCOR Reinsurance Company (Asia) Ltd. |           | 65.2  | 79.9            | -18.4       |
|                                 | <b>Total:</b>                        |           | <b>369.3</b>                                  | <b>273.3</b>    | <b>35.1</b> |

|  | Pretax Operating Income (Mil. \$) |                 | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |                   |             | Return on Revenue (%) |             |
|--|-----------------------------------|-----------------|--------------------|-------------|--|-------------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009            | 2010               | 2009        | 2010   | 2009              | Change (%)  | 2010                  | 2009        |
|  | 48.5                              | 38.4            | 85.5               | 91.4        | 259.7  | 252.9             | 2.7         | 21.1                  | 17.6        |
|  | 12.8                              | 7.1             | 100.6              | 104.3       | 159  | 159.4             | -0.2        | 7.2                   | 4.6         |
|  | <b>61.3</b>                       | <b>45.5</b>     | <b>92.4</b>        | <b>97.1</b> | <b>418.8</b>                                 | <b>412.2</b>      | <b>1.6</b>  | <b>15.1</b>           | <b>12.2</b> |
|  |                                   |                 |                    |             |  |                   |             |                       |             |
|  | 8                                 | 8.5             | 96.1               | 95.6        | 154.1  | 152.3             | 1.2         | 3.2                   | 3.5         |
|  | <b>8</b>                          | <b>8.5</b>      | <b>96.1</b>        | <b>95.6</b> | <b>154.1</b>                                 | <b>152.3</b>      | <b>1.2</b>  | <b>3.2</b>            | <b>3.5</b>  |
|  |                                   |                 |                    |             |  |                   |             |                       |             |
|  | 263.7                             | 35.8            | NM                 | NM          | 979.4  | 948.9             | 3.2         | 12.1                  | 1.8         |
|  | 232.9                             | 1,004.60        | 101                | 56.3        | 5,117.80                                     | 5,592.90          | -8.5        | 11.7                  | 50.3        |
|  | -34.5                             | 680.8           | 120.6              | 101.9       | 3,317.20                                     | 3,494.40          | -5.1        | -2.9                  | 33          |
|  | 98.1                              | -33             | 103.3              | 122         | 2,474.30                                     | 2,528.40          | -2.1        | 9.1                   | -2.9        |
|  | <b>560.3</b>                      | <b>1,688.30</b> | <b>107.5</b>       | <b>87.7</b> | <b>11,888.70</b>                             | <b>12,564.50</b>  | <b>-5.4</b> | <b>7</b>              | <b>23.6</b> |
|  |                                   |                 |                    |             |  |                   |             |                       |             |
|  | 1,627.30                          | 2,365.00        | 101.9              | 98.9        | 35,659.00                                    | 35,658.90         | 0           | 5.9                   | 8.6         |
|  | 793.9                             | 764             | 104.2              | 98.2        | 6,809.10                                     | 6,376.10          | 6.8         | 8.4                   | 7.5         |
|  | 2,636.10                          | 79.4            | 95.8               | 90          | 78,336.70                                    | 85,771.90         | -8.7        | NM                    | NM          |
|  | 267.1                             | 216.6           | 107.8              | 102.5       | 2,000.50                                     | 2,078.30          | -3.7        | 9.1                   | 6.8         |
|  | 588.5                             | 551.5           | 91.7               | 96.7        | 2,883.20                                     | 2,535.70          | 13.7        | 20.9                  | 16          |
|  | 307.3                             | 335.7           | 99.9               | 99.4        | 5,685.00                                     | 5,334.50          | 6.6         | 17.7                  | 21.6        |
|  | 29.9                              | 40.2            | 104                | 96          | 665.3  | 678.1             | -1.9        | 5.8                   | 7           |
|  | 201.8                             | 290.9           | 97.4               | 92.8        | 3,814.00                                     | 3,776.30          | 1           | 43.6                  | 53.1        |
|  | 126.2                             | 128.9           | 98.8               | 100.8       | 1,234.90                                     | 1,285.40          | -3.9        | 34                    | 29.8        |
|  | <b>6,578.20</b>                   | <b>4,772.20</b> | <b>101.5</b>       | <b>97.9</b> | <b>137,087.70</b>                            | <b>143,495.30</b> | <b>-4.5</b> | <b>8.6</b>            | <b>9.9</b>  |
|  |                                   |                 |                    |             |  |                   |             |                       |             |
|  | 49.7                              | 52.8            | 94.1               | 92          | 342.3  | 310.1             | 10.4        | 16.2                  | 21.7        |
|  | 32.7                              | 53.8            | 56.6               | 49.1        | 155.1  | 121.6             | 27.5        | 47.8                  | 52.4        |
|  | <b>82.5</b>                       | <b>106.6</b>    | <b>86.9</b>        | <b>77.9</b> | <b>497.4</b>                                 | <b>431.8</b>      | <b>15.2</b> | <b>21.9</b>           | <b>30.8</b> |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company  | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                |             |
|---------------------------------|--|-----------|---|----------------|-------------|
|                                 |  |           | 2010  | 2009           | Change (%)  |
| <b>India</b>                    |  |           |   |                |             |
| NR                              | General Ins. Corp. of India                    |           | 2,361.3                                       | 1,955.0        | 20.8        |
|                                 | <b>Total:</b>                                  |           | <b>2,361.3</b>                                | <b>1,955.0</b> | <b>20.8</b> |
| <b>Ireland</b>                  |  |           |   |                |             |
| AA-                             | Hannover Life Reinsurance (Ireland) Ltd.       |           | 1,556.8                                       | 1,617.8        | -3.8        |
| AA-                             | Partner Reinsurance Europe Ltd.                |           | 1,289.6                                       | 1,197.8        | 7.7         |
| A+                              | AXIS Re Ltd.                                   | 1         | 678.0   | 611.5          | 10.9        |
| AA-                             | Hannover Reinsurance (Ireland) Ltd.            |           | 519.6   | 570.2          | -8.9        |
| A                               | XL Re Europe Ltd.                              |           | 476.4   | 401.9          | 18.5        |
| A-                              | Atradius Reinsurance Ltd.                      |           | 366.8   | 442.5          | -17.1       |
| A                               | SCOR Global Life Reinsurance Ireland Ltd.      |           | 293.4   | 220.6          | 33.0        |
| AA-                             | Mitsui Sumitomo Reinsurance Ltd                |           | 134.0   | 143.3          | -6.5        |
| A+                              | QBE Reinsurance (Europe) Ltd.                  |           | 89.1  | 85.0           | 4.8         |
| AA-                             | Tokio Marine Global Re Ltd.                    |           | 52.0  | 57.0           | -8.8        |
|                                 | <b>Total:</b>                                  |           | <b>5,455.7</b>                                | <b>5,347.6</b> | <b>2.0</b>  |
| <b>Japan</b>                    |  |           |   |                |             |
| AA-                             | Tokio Marine & Nichido Fire Insurance Co. Ltd. |           | 2,617.2                                       | 2,242.6        | 16.7        |
| AA-                             | Sompo Japan Insurance Inc.                     | 7         | 1,782.3                                       | 1,587.5        | 12.3        |
| AA-                             | Mitsui Sumitomo Insurance Co. Ltd.             | 8,9       | 1,696.2                                       | 1,513.2        | 12.1        |
| AA-                             | Aioi Nissay Dowa Insurance                     | 9         | 1,657.5                                       | 1,346.5        | 23.1        |
| A+                              | Toa Reinsurance Co.                            |           | 1,507.6                                       | 1,304.7        | 15.6        |
| AA-                             | NIPPONKOA Insurance Co. Ltd.                   | 7         | 743.7   | 683.4          | 8.8         |
| A-                              | Kyoei Fire & Marine Insurance Co.              |           | 200.9   | 177.2          | 13.4        |
| A+                              | Nisshin Fire & Marine Insurance Co. Ltd.       | 10        | 165.2   | 150.1          | 10.0        |
|                                 | <b>Total:</b>                                  |           | <b>10,370.7</b>                               | <b>9,005.2</b> | <b>15.2</b> |
| <b>Kazakhstan</b>               |  |           |   |                |             |
| BB                              | Eurasia Insurance Co.                          |           | 30.7  | 26.1           | 17.5        |
|                                 | <b>Total:</b>                                  |           | <b>30.7</b>                                   | <b>26.1</b>    | <b>17.5</b> |
| <b>Korea</b>                    |  |           |   |                |             |
| A-                              | Korean Reinsurance Co.                         |           | 2,757.4                                       | 2,493.8        | 10.6        |
|                                 | <b>Total:</b>                                  |           | <b>2,757.4</b>                                | <b>2,493.8</b> | <b>10.6</b> |



|  | Pretax Operating Income (Mil. \$) |                 | Combined Ratio (%) |              | Total Adjusted Shareholders' Funds (Mil. \$) |                  |              | Return on Revenue (%) |             |
|--|-----------------------------------|-----------------|--------------------|--------------|--|------------------|--------------|-----------------------|-------------|
|  | 2010                              | 2009            | 2010               | 2009         | 2010   | 2009             | Change (%)   | 2010                  | 2009        |
|  | 267.1                             | 287.4           | 111.4              | 109.7        | 2,229.50                                     | 2,034.30         | 9.6          | 10.9                  | 13.8        |
|  | <b>267.1</b>                      | <b>287.4</b>    | <b>111.4</b>       | <b>109.7</b> | <b>2,229.50</b>                              | <b>2,034.30</b>  | <b>9.6</b>   | <b>10.9</b>           | <b>13.8</b> |
|  | NA                                | 32              | NM                 | NM           | NA   | 1,097.20         | NA           | NA                    | 1.8         |
|  | 94.1                              | 287.7           | 84.7               | 78.2         | 2,489.00                                     | 2,257.30         | 10.3         | 6.4                   | 20.4        |
|  | NA                                | NA              | 87.7               | 99.9         | 542.1  | 555.9            | -2.5         | NA                    | NA          |
|  | 89.2                              | 56.2            | 94.9               | 117.3        | 679.2  | 642.1            | 5.8          | 15.5                  | 9.1         |
|  | NA                                | NA              | 76.9               | 86.2         | NA   | NA               | NA           | NA                    | NA          |
|  | 59.4                              | -119.1          | 74.8               | 128.3        | 415.7  | 393.6            | 5.6          | 14.9                  | -25         |
|  | 10.2                              | 39.8            | NM                 | NM           | 156.1  | 151.9            | 2.8          | 3.2                   | 16.5        |
|  | 6.7                               | 5.9             | 95.1               | 100.5        | 105.8  | 102.6            | 3.1          | 4.3                   | 3.6         |
|  | 50.3                              | 62.8            | 51.6               | 52.7         | 333  | 288.1            | 15.6         | 52.5                  | 57.4        |
|  | 9                                 | 14.7            | 86.9               | 83.3         | 99.8   | 99.7             | 0.1          | 17.3                  | 20          |
|  | <b>318.9</b>                      | <b>380</b>      | <b>84.3</b>        | <b>96</b>    | <b>4,820.70</b>                              | <b>5,588.40</b>  | <b>-13.7</b> | <b>10.5</b>           | <b>7.3</b>  |
|  | 1,759.00                          | 1,598.20        | NA                 | NA           | 20,229.60                                    | 20,775.70        | -2.6         | NA                    | NA          |
|  | NA                                | NA              | NA                 | NA           | 11,778.30                                    | 11,714.10        | 0.5          | NA                    | NA          |
|  | NA                                | NA              | NA                 | NA           | 18,932.10                                    | 18,884.20        | 0.3          | NA                    | NA          |
|  | -211.5                            | 176             | NA                 | NA           | 9,580.10                                     | 9,834.80         | -2.6         | -109.4                | 34.5        |
|  | -46.5                             | 173.9           | 112.4              | 92.5         | 2,917.20                                     | 2,819.30         | 3.5          | -2.9                  | 12.8        |
|  | NA                                | NA              | NA                 | NA           | 6,329.00                                     | 6,423.10         | -1.5         | NA                    | NA          |
|  | NA                                | NA              | NA                 | NA           | 1,214.90                                     | 1,067.30         | 13.8         | NA                    | NA          |
|  | 30.4                              | 71.1            | NA                 | NA           | 800.7  | 800.9            | 0            | NA                    | 72.4        |
|  | <b>1,531.40</b>                   | <b>2,019.10</b> | <b>NM</b>          | <b>NM</b>    | <b>71,781.90</b>                             | <b>72,319.20</b> | <b>-0.7</b>  | <b>NM</b>             | <b>NM</b>   |
|  | 87                                | 35.5            | 86.1               | 79           | 292  | 208.9            | 39.8         | 157.6                 | 52.1        |
|  | <b>87</b>                         | <b>35.5</b>     | <b>86.1</b>        | <b>79</b>    | <b>292</b>                                   | <b>208.9</b>     | <b>39.8</b>  | <b>157.6</b>          | <b>52.1</b> |
|  | 125.8                             | 90.3            | 97.7               | 94.8         | 1,166.40                                     | 984.2            | 18.5         | 4.3                   | 3.5         |
|  | <b>125.8</b>                      | <b>90.3</b>     | <b>97.7</b>        | <b>94.8</b>  | <b>1,166.40</b>                              | <b>984.2</b>     | <b>18.5</b>  | <b>4.3</b>            | <b>3.5</b>  |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company                               | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                |              |
|---------------------------------|---------------------------------------|-----------|---|----------------|--------------|
|                                 |                                       |           | 2010  | 2009           | Change (%)   |
| <b>Kuwait</b>                   |                                       |           |   |                |              |
| BBB+                            | Kuwait Reinsurance Co. K.S.C.         |           | 115.4   | 89.2           | 29.5         |
|                                 | <b>Total:</b>                         |           | <b>115.4</b>                                  | <b>89.2</b>    | <b>29.5</b>  |
| <b>Luxembourg</b>               |                                       |           |   |                |              |
| A+                              | Swiss Re Europe S.A.                  |           | 5,204.4                                       | 6,175.8        | -15.7        |
|                                 | <b>Total:</b>                         |           | <b>5,204.4</b>                                | <b>6,175.8</b> | <b>-15.7</b> |
| <b>Morocco</b>                  |                                       |           |   |                |              |
| BBB                             | Societe Centrale de Reassurance       |           | 236.8   | 254.6          | -7.0         |
|                                 | <b>Total:</b>                         |           | <b>236.8</b>                                  | <b>254.6</b>   | <b>-7.0</b>  |
| <b>Nigeria</b>                  |                                       |           |   |                |              |
| A-                              | African Reinsurance Corp.             |           | 325.4   | 294.4          | 10.5         |
|                                 | <b>Total:</b>                         |           | <b>325.4</b>                                  | <b>294.4</b>   | <b>10.5</b>  |
| <b>Poland</b>                   |                                       |           |   |                |              |
| BBB+                            | Polskie Towarzystwo Reasekuracji S.A. |           | 68.7  | 84.9           | -19.1        |
|                                 | <b>Total:</b>                         |           | <b>68.7</b>                                   | <b>84.9</b>    | <b>-19.1</b> |
| <b>Qatar</b>                    |                                       |           |   |                |              |
| A                               | Q-Re LLC                              | 11        | 80.8  | NA             | NA           |
|                                 | <b>Total:</b>                         |           | <b>80.8</b>                                   | <b>NA</b>      | <b>NA</b>    |
| <b>Russia</b>                   |                                       |           |   |                |              |
| BB                              | Unity Re (Russia)                     |           | 21.9  | 18.4           | 19.1         |
| NR                              | Transsib Re                           |           | 19.2  | 21.6           | -11.2        |
| BB                              | Moscow Reinsurance Co.                |           | 19.0  | 16.8           | 13.3         |
| NR                              | Russian Re Co. Ltd.                   |           | 10.8  | 10.0           | 8.6          |
| NR                              | Munich Re Life E.E.C.A.               |           | 8.6   | 14.4           | -40.3        |
|                                 | <b>Total:</b>                         |           | <b>79.6</b>                                   | <b>81.2</b>    | <b>-2.0</b>  |

|  | Pretax Operating Income (Mil. \$) |                | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |                |             | Return on Revenue (%) |             |
|--|-----------------------------------|----------------|--------------------|-------------|--|----------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009           | 2010               | 2009        | 2010   | 2009           | Change (%)  | 2010                  | 2009        |
|  | 6.4                               | 10.8           | 98.1               | 95.5        | 131.8  | 125.4          | 5.1         | 5.6                   | 12.2        |
|  | <b>6.4</b>                        | <b>10.8</b>    | <b>98.1</b>        | <b>95.5</b> | <b>131.8</b>                                 | <b>125.4</b>   | <b>5.1</b>  | <b>5.6</b>            | <b>12.2</b> |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | 742.4                             | 1,750.9        | 83.5               | 61.5        | 2,881.1                                      | 2,701.1        | 6.7         | 22.1                  | 49.4        |
|  | <b>742.4</b>                      | <b>1,750.9</b> | <b>83.5</b>        | <b>61.5</b> | <b>2,881.1</b>                               | <b>2,701.1</b> | <b>6.7</b>  | <b>22.1</b>           | <b>49.4</b> |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | 12.2                              | 21.6           | 86.4               | 84.3        | 209.6  | 205.9          | 1.8         | 4.0                   | 6.5         |
|  | <b>12.2</b>                       | <b>21.6</b>    | <b>86.4</b>        | <b>84.3</b> | <b>209.6</b>                                 | <b>205.9</b>   | <b>1.8</b>  | <b>4.0</b>            | <b>6.5</b>  |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | 64.9                              | 46.9           | 83.2               | 88.3        | 339.7  | 277.9          | 22.2        | 18.7                  | 24.6        |
|  | <b>64.9</b>                       | <b>46.9</b>    | <b>83.2</b>        | <b>88.3</b> | <b>339.7</b>                                 | <b>277.9</b>   | <b>22.2</b> | <b>18.7</b>           | <b>24.6</b> |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | -2.6                              | 1.8            | 104.0              | 98.7        | 60.3   | 62.9           | -4.2        | -3.5                  | 1.7         |
|  | <b>-2.6</b>                       | <b>1.8</b>     | <b>104.0</b>       | <b>98.7</b> | <b>60.3</b>                                  | <b>62.9</b>    | <b>-4.2</b> | <b>-3.5</b>           | <b>1.7</b>  |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | 14.7                              | NA             | 79.4               | NA          | 64.7   | NA             | NA          | 19.6                  | NA          |
|  | <b>14.7</b>                       | <b>NA</b>      | <b>79.4</b>        | <b>NA</b>   | <b>64.7</b>                                  | <b>NA</b>      | <b>NA</b>   | <b>19.6</b>           | <b>NA</b>   |
|  |                                   |                |                    |             |  |                |             |                       |             |
|  | 6.8                               | 3.0            | 63.6               | 81.9        | 23.1   | 19.4           | 19.0        | 34.9                  | 13.7        |
|  | 1.6                               | 1.7            | 82.6               | 76.5        | 13.2   | 10.6           | 24.2        | 7.2                   | 7.3         |
|  | 6.7                               | -6.5           | 70.5               | 74.9        | 3.8  | 3.5            | 10.7        | 39.5                  | -21.6       |
|  | 3.0                               | 1.4            | 74.8               | 85.5        | 18.2   | 17.3           | 5.1         | 29.0                  | 13.8        |
|  | -2.6                              | 1.2            | NM                 | NM          | 10.5   | 12.6           | -16.6       | -25.8                 | 8.1         |
|  | <b>15.6</b>                       | <b>0.7</b>     | <b>73.1</b>        | <b>78.7</b> | <b>68.8</b>                                  | <b>63.4</b>    | <b>8.5</b>  | <b>23.1</b>           | <b>0.7</b>  |
|  |                                   |                |                    |             |  |                |             |                       |             |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company                                  | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                |              |
|---------------------------------|--|-----------|---|----------------|--------------|
|                                 |  |           | 2010  | 2009           | Change (%)   |
| <b>Saudi Arabia</b>             |  |           |   |                |              |
| BBB+                            | Saudi Re for Cooperative Reinsurance Co. | 12        | 10.8  | 4.3            | 148.5        |
|                                 | <b>Total:</b>                            |           | <b>10.8</b>                                   | <b>4.3</b>     | <b>148.5</b> |
| <b>Singapore</b>                |  |           |   |                |              |
| A-                              | Asia Capital Reinsurance Group Pte Ltd   |           | 553.1   | 338.9          | 63.2         |
| A                               | SCOR Reinsurance Asia-Pacific            |           | 168.7   | 150.2          | 12.3         |
| AA-                             | Tokio Marine Re Takaful                  |           | 8.4   | 7.6            | 9.5          |
|                                 | <b>Total:</b>                            |           | <b>730.2</b>                                  | <b>496.7</b>   | <b>47.0</b>  |
| <b>Slovenia</b>                 |  |           |   |                |              |
| A-                              | Pozavarovalnica Sava, d.d.               |           | 139.8   | 145.3          | -3.7         |
| A                               | Triglav Re                               |           | 89.8  | 86.9           | 3.3          |
|                                 | <b>Total:</b>                            |           | <b>229.6</b>                                  | <b>232.2</b>   | <b>-1.1</b>  |
| <b>South Africa</b>             |  |           |   |                |              |
| A                               | Munich Reinsurance Co. of Africa Ltd.    |           | 311.6   | 249.5          | 24.9         |
| AA+                             | General Reinsurance Africa Ltd.          |           | 200.5   | 161.0          | 24.5         |
| A                               | Hannover Life Reassurance Africa Ltd.    |           | 182.1   | 129.5          | 40.6         |
| NR                              | Swiss Re Life & Health Africa Ltd.       |           | 158.3   | 148.3          | 6.7          |
| A                               | Hannover Reinsurance Africa Ltd.         |           | 141.7   | 132.0          | 7.4          |
| NR                              | African Re Corp. (South Africa) Ltd.     |           | 72.6  | 56.9           | 27.6         |
|                                 | <b>Total:</b>                            |           | <b>1,066.9</b>                                | <b>877.3</b>   | <b>21.6</b>  |
| <b>Spain</b>                    |  |           |   |                |              |
| AA                              | Mapfre Re, Compania de Reaseguros, S.A.  |           | 2,087.9                                       | 1,958.1        | 6.6          |
| A+                              | Nacional de Reaseguros S.A.              |           | 471.6   | 446.9          | 5.5          |
|                                 | <b>Total:</b>                            |           | <b>2,559.5</b>                                | <b>2,404.9</b> | <b>6.4</b>   |
| <b>Sweden</b>                   |  |           |   |                |              |
| A-                              | Sirius International Insurance Corp.     |           | 774.3   | 956.3          | -19.0        |
| A                               | Sweden Reinsurance Co. Ltd.              |           | 193.3   | 169.9          | 13.8         |
|                                 | <b>Total:</b>                            |           | <b>967.6</b>                                  | <b>1,126.2</b> | <b>-14.1</b> |

|  | Pretax Operating Income (Mil. \$) |              | Combined Ratio (%) |              | Total Adjusted Shareholders' Funds (Mil. \$) |                |             | Return on Revenue (%) |             |
|--|-----------------------------------|--------------|--------------------|--------------|--|----------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009         | 2010               | 2009         | 2010   | 2009           | Change (%)  | 2010                  | 2009        |
|  | -0.4                              | -0.5         | 175.6              | 348.2        | 262.5  | 268.1          | -2.1        | -3.2                  | -6.6        |
|  | <b>-0.4</b>                       | <b>-0.5</b>  | <b>175.6</b>       | <b>348.2</b> | <b>262.5</b>                                 | <b>268.1</b>   | <b>-2.1</b> | <b>-3.2</b>           | <b>-6.6</b> |
|  |                                   |              |                    |              |  |                |             |                       |             |
|  | -11.1                             | 20.1         | 102.9              | 86.0         | 613.6  | 611.8          | 0.3         | -2.6                  | 5.4         |
|  | 9.1                               | -6.9         | 92.1               | 93.5         | 136.3  | 104.3          | 30.7        | 4.7                   | -4.4        |
|  | 0.0                               | 1.3          | NM                 | NM           | 19.2   | 17.9           | 7.1         | 0.5                   | 16.2        |
|  | <b>-2.0</b>                       | <b>14.5</b>  | <b>99.6</b>        | <b>88.3</b>  | <b>769.1</b>                                 | <b>734.0</b>   | <b>4.8</b>  | <b>-0.3</b>           | <b>2.7</b>  |
|  |                                   |              |                    |              |  |                |             |                       |             |
|  | 8.3                               | -10.9        | 97.2               | 107.4        | 206.9  | 215.0          | -3.8        | 5.8                   | -8.1        |
|  | 4.6                               | 8.0          | 94.8               | 91.0         | 47.8   | 45.0           | 6.2         | 5.0                   | 8.7         |
|  | <b>13.0</b>                       | <b>-3.0</b>  | <b>96.3</b>        | <b>101.2</b> | <b>254.7</b>                                 | <b>260.0</b>   | <b>-2.0</b> | <b>5.5</b>            | <b>-1.3</b> |
|  |                                   |              |                    |              |  |                |             |                       |             |
|  | 30.4                              | 45.6         | 85.6               | 78.7         | 244.2  | 191.6          | 27.5        | 8.9                   | 16.4        |
|  | 20.8                              | 20.9         | NM                 | NM           | 75.4   | 60.1           | 25.5        | 9.4                   | 11.3        |
|  | 14.4                              | 17.5         | NM                 | NM           | 62.1   | 42.7           | 45.3        | 7.3                   | 12.4        |
|  | 16.2                              | 64.8         | NM                 | NM           | 49.3   | 75.6           | -34.8       | 8.3                   | 34.4        |
|  | 32.6                              | 18.5         | 83.2               | 91.3         | 88.6   | 86.4           | 2.5         | 21.1                  | 12.6        |
|  | 14.5                              | 7.6          | 96.9               | 102.9        | 43.3   | 28.8           | 50.2        | 16.9                  | 11.5        |
|  | <b>128.8</b>                      | <b>175.0</b> | <b>86.6</b>        | <b>85.6</b>  | <b>562.8</b>                                 | <b>485.2</b>   | <b>16.0</b> | <b>10.8</b>           | <b>17.4</b> |
|  |                                   |              |                    |              |  |                |             |                       |             |
|  | 228.9                             | 264.3        | 95.9               | 93.4         | 1,126.6                                      | 1,115.7        | 1.0         | 11.1                  | 13.3        |
|  | 40.5                              | 41.8         | 95.8               | 94.5         | 309.9  | 270.3          | 14.7        | 8.4                   | 9.9         |
|  | <b>269.4</b>                      | <b>306.0</b> | <b>95.9</b>        | <b>93.6</b>  | <b>1,436.5</b>                               | <b>1,385.9</b> | <b>3.6</b>  | <b>10.6</b>           | <b>12.7</b> |
|  |                                   |              |                    |              |  |                |             |                       |             |
|  | 81.6                              | 260.7        | 89.0               | 82.1         | 1,450.0                                      | 1,359.4        | 6.7         | 10.3                  | 24.0        |
|  | 16.2                              | 17.4         | NM                 | NM           | 136.0  | 112.5          | 20.9        | 8.2                   | 8.7         |
|  | <b>97.8</b>                       | <b>278.1</b> | <b>89.0</b>        | <b>82.1</b>  | <b>1,586.0</b>                               | <b>1,471.9</b> | <b>7.8</b>  | <b>9.9</b>            | <b>21.7</b> |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company   | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                 |             |
|---------------------------------|---|-----------|---|-----------------|-------------|
|                                 |   |           | 2010  | 2009            | Change (%)  |
| <b>Switzerland</b>              |   |           |   |                 |             |
| A+                              | Swiss Reinsurance Company Ltd.                  |           | 9,565.3                                       | 5,776.0         | 65.6        |
| A                               | SCOR Switzerland AG                             |           | 1,858.8                                       | 1,851.8         | 0.4         |
| AA-                             | New Reinsurance Co.                             |           | 1,295.5                                       | 1,421.6         | -8.9        |
| NR                              | Flagstone Reassurance Suisse SA                 |           | 838.7   | 707.5           | 18.5        |
| A+                              | DR Swiss, Deutsche Rueckversicherung Schweiz AG |           | 374.9   | 422.4           | -11.2       |
| A                               | XL Re Latin America Ltd.                        |           | 190.3   | 181.3           | 5.0         |
| A                               | SCOR Global Life Rueckversicherung Schweiz AG   |           | 90.2  | 63.6            | 41.8        |
| A+                              | European Reinsurance Co. of Zurich              | 13        | -35.7   | -234.3          | -84.8       |
|                                 | <b>Total:</b>                                   |           | <b>14,177.8</b>                               | <b>10,189.8</b> | <b>39.1</b> |
| <b>Taiwan</b>                   |   |           |   |                 |             |
| A-                              | Central Reinsurance Corp.                       |           | 423.3   | 389.5           | 8.7         |
|                                 | <b>Total:</b>                                   |           | <b>423.3</b>                                  | <b>389.5</b>    | <b>8.7</b>  |
| <b>Thailand</b>                 |   |           |   |                 |             |
| A-                              | Thai Reinsurance Public Co. Ltd.                |           | 122.9   | 106.6           | 15.3        |
|                                 | <b>Total:</b>                                   |           | <b>122.9</b>                                  | <b>106.6</b>    | <b>15.3</b> |
| <b>Malaysia</b>                 |   |           |   |                 |             |
| NR                              | B.E.S.T. Reinsurance Co.                        |           | 327.7   | 270.8           | 21.0        |
|                                 | <b>Total:</b>                                   |           | <b>327.7</b>                                  | <b>270.8</b>    | <b>21.0</b> |
| <b>Turkey</b>                   |   |           |   |                 |             |
| trAA                            | Milli Reasurans T.A.S.                          |           | 497.9   | 502.2           | -0.9        |
|                                 | <b>Total:</b>                                   |           | <b>497.9</b>                                  | <b>502.2</b>    | <b>-0.9</b> |

|  | Pretax Operating Income (Mil. \$) |                | Combined Ratio (%) |              | Total Adjusted Shareholders' Funds (Mil. \$) |                 |             | Return on Revenue (%) |             |
|--|-----------------------------------|----------------|--------------------|--------------|--|-----------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009           | 2010               | 2009         | 2010   | 2009            | Change (%)  | 2010                  | 2009        |
|  | 728.1                             | 1,699.4        | 90.8               | 90.9         | 22,235.9                                     | 23,851.6        | -6.8        | 5.4                   | 14.6        |
|  | 99.9                              | 359.9          | 99.4               | 90.2         | 1,487.0                                      | 2,285.6         | -34.9       | 4.7                   | 18.6        |
|  | 252.7                             | 231.4          | 84.6               | 89.7         | 895.8  | 1,147.7         | -22.0       | 18.2                  | 15.0        |
|  | 240.9                             | 175.6          | 72.3               | 73.5         | 1,701.9                                      | 1,566.6         | 8.6         | 31.8                  | 28.2        |
|  | 5.3                               | -6.0           | 107.0              | 106.1        | 243.7  | 227.7           | 7.0         | 1.3                   | -1.3        |
|  | NA                                | NA             | 124.8              | 82.5         | NA   | NA              | NA          | NA                    | NA          |
|  | 11.0                              | 13.1           | NM                 | NM           | 65.9   | 59.8            | 10.1        | 11.2                  | 33.9        |
|  | 115.6                             | 711.4          | 93.0               | 81.5         | 2,429.4                                      | 2,144.0         | 13.3        | 3.1                   | 12.4        |
|  | <b>1,453.6</b>                    | <b>3,184.8</b> | <b>91.3</b>        | <b>87.9</b>  | <b>29,059.6</b>                              | <b>31,283.1</b> | <b>-7.1</b> | <b>6.6</b>            | <b>14.5</b> |
|  |                                   |                |                    |              |  |                 |             |                       |             |
|  | 31.0                              | 61.1           | 95.2               | 88.6         | 508.8  | 446.3           | 14.0        | 7.1                   | 14.1        |
|  | <b>31.0</b>                       | <b>61.1</b>    | <b>95.2</b>        | <b>88.6</b>  | <b>508.8</b>                                 | <b>446.3</b>    | <b>14.0</b> | <b>7.1</b>            | <b>14.1</b> |
|  |                                   |                |                    |              |  |                 |             |                       |             |
|  | 8.4                               | 16.7           | 95.7               | 83.0         | 82.5   | 70.4            | 17.2        | 6.2                   | 15.3        |
|  | <b>8.4</b>                        | <b>16.7</b>    | <b>95.7</b>        | <b>83.0</b>  | <b>82.5</b>                                  | <b>70.4</b>     | <b>17.2</b> | <b>6.2</b>            | <b>15.3</b> |
|  |                                   |                |                    |              |  |                 |             |                       |             |
|  | 8.8                               | 8.8            | 90.3               | 91.9         | 155.5  | 130.7           | 19.0        | 2.9                   | 3.7         |
|  | <b>8.8</b>                        | <b>8.8</b>     | <b>90.3</b>        | <b>91.9</b>  | <b>155.5</b>                                 | <b>130.7</b>    | <b>19.0</b> | <b>2.9</b>            | <b>3.7</b>  |
|  |                                   |                |                    |              |  |                 |             |                       |             |
|  | 48.7                              | 74.1           | 107.9              | 110.3        | 514.4  | 517.3           | -0.6        | 9.0                   | 13.0        |
|  | <b>48.7</b>                       | <b>74.1</b>    | <b>107.9</b>       | <b>110.3</b> | <b>514.4</b>                                 | <b>517.3</b>    | <b>-0.6</b> | <b>9.0</b>            | <b>13.0</b> |
|  |                                   |                |                    |              |  |                 |             |                       |             |

## Global Reinsurers By Country

| Rating As Of<br>August 24, 2010 | Company                             | Footnotes | Net Reinsurance Premiums<br>Written (Mil. \$) |                 |            |
|---------------------------------|-------------------------------------|-----------|---|-----------------|------------|
|                                 |                                     |           | 2010  | 2009            | Change (%) |
| <b>U.K.</b>                     |                                     |           |   |                 |            |
| A+                              | Lloyd's                             | 14        | 9,762.1                                       | 9,733.5         | 0.3        |
| A                               | Aspen Insurance U.K. Ltd.           |           | 783.2   | 761.7           | 2.8        |
| AA-                             | Great Lakes Reinsurance (U.K.) PLC  |           | 224.1   | 128.6           | 74.3       |
| AA-                             | Hannover Life Reassurance (UK) Ltd. |           | 192.3   | 164.7           | 16.8       |
| AA-                             | Tokio Millennium Re (UK) Ltd        | 15        | 173.0   | 201.3           | -14.1      |
| AA+                             | Faraday Reinsurance Co. Ltd.        |           | 153.6   | 110.7           | 38.7       |
| A                               | SCOR U.K. Co. Ltd.                  |           | 123.1   | 63.9            | 92.8       |
| A+                              | QBE Insurance (Europe) Ltd.         |           | 87.4  | 94.8            | -7.8       |
|                                 | <b>Total:</b>                       |           | <b>11,498.9</b>                               | <b>11,259.1</b> | <b>2.1</b> |



|  | Pretax Operating Income (Mil. \$) |                | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |                 |             | Return on Revenue (%) |             |
|--|-----------------------------------|----------------|--------------------|-------------|--|-----------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009           | 2010               | 2009        | 2010   | 2009            | Change (%)  | 2010                  | 2009        |
|  | 912.8                             | 1,983.0        | 90.3               | 78.4        | 28,142.9                                     | 28,929.8        | -2.7        | 8.0                   | 16.5        |
|  | 115.3                             | 304.0          | 85.8               | 19.9        | 1,493.2                                      | 1,755.4         | -14.9       | 13.0                  | 33.0        |
|  | 24.8                              | 109.6          | 106.3              | 59.1        | 471.6  | 466.0           | 1.2         | 9.2                   | 59.7        |
|  | 0.6                               | 1.9            | NM                 | NM          | 81.9   | 69.1            | 18.5        | 0.3                   | 1.0         |
|  | 22.2                              | 43.7           | 94.2               | 80.9        | 312.6  | 303.9           | 2.9         | 10.9                  | 21.7        |
|  | 62.3                              | 25.3           | 85.4               | 120.2       | 345.9  | 297.3           | 16.3        | 39.2                  | 16.0        |
|  | 30.4                              | 24.8           | 70.5               | 75.8        | 134.3  | 123.4           | 8.8         | 31.8                  | 27.7        |
|  | 21.2                              | 25.5           | 85.3               | 88.1        | 178.3  | 277.8           | -35.8       | 23.3                  | 19.8        |
|  | <b>1,189.5</b>                    | <b>2,515.5</b> | <b>90.2</b>        | <b>74.5</b> | <b>31,164.6</b>                              | <b>32,226.2</b> | <b>-3.3</b> | <b>8.9</b>            | <b>18.1</b> |

## Global Reinsurers By Country

| Rating As Of August 24, 2010 | Company                                     | Footnotes | Net Reinsurance Premiums Written (Mil. \$) |                  |             |
|------------------------------|---|-----------|--|------------------|-------------|
|                              |   |           | 2010                                       | 2009             | Change (%)  |
| <b>U.S.</b>                  |   |           |  |                  |             |
| AA+                          | National Indemnity Co.                      |           | 3,812.0                                    | 4,253.0          | -10.4       |
| A+                           | Transatlantic Reinsurance Co.               | 16        | 3,247.1                                    | 3,410.0          | -4.8        |
| AA-                          | Munich Reinsurance America, Inc.            |           | 2,914.7                                    | 2,217.8          | 31.4        |
| A+                           | Swiss Reinsurance America Corp.             |           | 2,875.0                                    | 3,331.0          | -13.7       |
| A+                           | Swiss Re Life & Health America Inc.         |           | 2,186.4                                    | 1,336.9          | 63.5        |
| AA+                          | Berkshire Hathaway Life Insurance Co. of NE |           | 2,170.0                                    | 2,338.0          | -7.2        |
| A+                           | Everest Reinsurance Co.                     |           | 1,702.9                                    | 1,646.6          | 3.4         |
| A-                           | Odyssey Reinsurance Co. (U.S.)              | 17        | 1,628.1                                    | 1,660.9          | -2.0        |
| A+                           | Berkley Insurance Co.                       | 18        | 1,454.7                                    | 1,226.0          | 18.7        |
| BBB+                         | Maiden Re                                   |           | 1,227.8                                    | 1,030.4          | 19.2        |
| AA+                          | General Re Life Corp.                       |           | 1,068.0                                    | 1,072.8          | -0.4        |
| A+                           | Reassure America Life Insurance Co.         |           | 656.4                                      | 957.2            | -31.4       |
| AA-                          | Partner Reinsurance Co. of U.S.             |           | 632.6                                      | 763.7            | -17.2       |
| A                            | SCOR Reinsurance Co.                        |           | 617.1                                      | 522.9            | 18.0        |
| A-                           | White Mountains Re America                  |           | 527.2                                      | 489.1            | 7.8         |
| A+                           | Axis Reinsurance Company                    | 1         | 503.9                                      | 544.0            | -7.4        |
| A                            | XL Reinsurance America Inc.                 |           | 491.3                                      | 538.8            | -8.8        |
| AA-                          | Hannover Life Reassurance Co. of America    |           | 388.9                                      | 403.0            | -3.5        |
| A+                           | QBE Reinsurance Corp.                       |           | 352.7                                      | 397.6            | -11.3       |
| A+                           | Toa Reinsurance Co. of America (The)        |           | 267.7                                      | 235.3            | 13.8        |
| A+                           | Putnam Reinsurance Co.                      | 19        | 170.9                                      | 179.5            | -4.8        |
| A                            | SCOR GLOBAL LIFE US RE Ins Co.              |           | 123.7                                      | 499.1            | -75.2       |
| AA-                          | Munich American Reassurance Co.             |           | 116.0                                      | 1,073.2          | -89.2       |
| A+                           | Arch Reinsurance Co.                        |           | 61.5                                       | 79.3             | -22.4       |
| NR                           | SCOR GLOBAL LIFE US RE Ins. OF TEXAS        |           | 17.7                                       | 27.2             | -34.9       |
|                              | <b>Total:</b>                               |           | <b>29,214.3</b>                            | <b>30,233.3</b>  | <b>-3.4</b> |
|                              | <b>Grand Total</b>                          |           | <b>156,461.3</b>                           | <b>151,823.4</b> | <b>3.1</b>  |

### Company notes:

- Adjusted Shareholders' Funds are for the group as a whole, including both its direct and reinsurance operations.
- Pre tax operating income does not include net investment income.
- Net Reinsurance Premium Written and Combined Ratio relate to reinsurance business only; all other items include direct business.
- Decline in premium in 2010 was due to increased competition stemming from liberalization of the Brazilian (re)insurance market.
- The combined ratio also includes direct business.
- In 2010, Koelnische Ruckversicherungs-Gesellschaft AG (Cologne Re) changed its name to GR-AG. In Q4 2010, Gen Re UK became a branch of GR-AG.
- Sompo Japan Insurance and NIPPONKOA Insurance jointly formed a new group and set up a holding company, NKSJ Holdings Inc. in April 2010. Both companies operate separately as non-life insurance operating companies, but belong to the same group.

- Net Reinsurance Premium written includes reinsurance business assumed from affiliates.
- In October 2010, Aioi Insurance and Nissay Dowa merged and now operate as one of the principal operating companies in the MS&AD Insurance Group along with Mitsui Sumitomo Insurance.
- Net Reinsurance Premium Written relates to reinsurance business only; all other items include direct business.
- 2009 numbers are NA as the business was written when reinsurance was a department within the larger group, not a separate legal entity.
- Founded in August 2008.
- Negative net reinsurance premium written reflects a new outward quota share treaty.
- Net Premium Written, pretax operating income and the combined ratio relate to reinsurance business only; all other items include direct

|  | Pretax Operating Income (Mil. \$) |                 | Combined Ratio (%) |             | Total Adjusted Shareholders' Funds (Mil. \$) |                  |             | Return on Revenue (%) |             |
|--|-----------------------------------|-----------------|--------------------|-------------|--|------------------|-------------|-----------------------|-------------|
|  | 2010                              | 2009            | 2010               | 2009        | 2010   | 2009             | Change (%)  | 2010                  | 2009        |
|  | 512.0                             | 939.0           | 85.5               | 78.9        | 68,437.0                                     | 38,436.0         | 78.1        | 6.9                   | 12.9        |
|  | 415.5                             | 708.6           | 98.6               | 92.5        | 4,325.4                                      | 4,016.1          | 7.7         | 11.5                  | 18.5        |
|  | 579.2                             | 305.1           | 91.8               | 101.9       | 4,390.3                                      | 3,824.6          | 14.8        | 18.0                  | 10.2        |
|  | 350.7                             | 485.4           | 86.8               | 101.2       | 5,039.3                                      | 4,805.2          | 4.9         | 20.2                  | 23.1        |
|  | 80.3                              | 598.2           | NM                 | NM          | 1,621.3                                      | 3,039.5          | -46.7       | 5.8                   | 91.9        |
|  | -897.0                            | -1,578.0        | NM                 | NM          | 1,553.0                                      | 1,033.0          | 50.3        | -34.3                 | -60.3       |
|  | 202.1                             | 485.0           | 107.4              | 89.0        | 2,527.5                                      | 2,789.7          | -9.4        | 9.8                   | 24.3        |
|  | 570.2                             | 325.1           | 93.0               | 92.2        | 3,320.1                                      | 3,512.8          | -5.5        | 26.9                  | 17.2        |
|  | 370.6                             | 293.1           | 103.0              | 92.2        | 2,623.7                                      | 2,477.2          | 5.9         | 22.2                  | 19.3        |
|  | 64.6                              | 62.1            | 96.9               | 95.9        | 750.4  | 676.5            | 10.9        | 5.2                   | 6.3         |
|  | 215.0                             | 157.8           | NM                 | NM          | 702.5  | 560.8            | 25.3        | 17.4                  | 12.8        |
|  | 216.7                             | 293.4           | NM                 | NM          | 649.1  | 647.9            | 0.2         | 9.7                   | 30.9        |
|  | 151.5                             | 166.6           | 95.1               | 95.1        | 1,197.0                                      | 792.6            | 51.0        | 20.0                  | 18.2        |
|  | 15.8                              | 63.3            | 103.3              | 91.7        | 619.0  | 551.8            | 12.2        | 2.5                   | 12.8        |
|  | 71.0                              | 239.1           | 103.3              | 93.3        | 841.2  | 918.1            | -8.4        | 11.5                  | 33.7        |
|  | NA                                | NA              | 93.5               | 89.3        | 670.0  | 609.2            | 10.0        | NA                    | NA          |
|  | NA                                | NA              | 87.9               | 94.6        | NA   | NA               | NA          | NA                    | NA          |
|  | -6.6                              | 4.2             | NM                 | NM          | 166.6  | 140.8            | 18.3        | -2.2                  | 1.4         |
|  | 17.7                              | 19.9            | 96.3               | 97.4        | 587.3  | 580.5            | 1.2         | 5.3                   | 5.2         |
|  | 60.1                              | 48.1            | 97.2               | 100.9       | 564.1  | 516.7            | 9.2         | 19.2                  | 16.3        |
|  | 24.0                              | 35.8            | 98.6               | 92.5        | 226.6  | 203.5            | 11.4        | 12.4                  | 17.5        |
|  | 8.3                               | -40.9           | NM                 | NM          | 194.7  | 126.2            | 54.3        | 3.6                   | -7.3        |
|  | 121.7                             | 48.8            | NM                 | NM          | 729.4  | 609.7            | 19.6        | 34.3                  | 3.8         |
|  | 19.6                              | 20.9            | 90.4               | 92.3        | 1,105.4                                      | 1,059.5          | 4.3         | 24.6                  | 21.3        |
|  | 12.9                              | -11.2           | NM                 | NM          | 47.0   | 19.9             | 136.2       | 50.6                  | -34.5       |
|  | <b>3,176.0</b>                    | <b>3,669.5</b>  | <b>94.5</b>        | <b>91.8</b> | <b>102,887.9</b>                             | <b>71,947.7</b>  | <b>43.0</b> | <b>9.2</b>            | <b>11.0</b> |
|  | <b>21,522.0</b>                   | <b>28,413.0</b> | <b>94.5</b>        | <b>88.0</b> | <b>447,249.9</b>                             | <b>426,377.1</b> | <b>4.9</b>  | <b>11.0</b>           | <b>16.8</b> |

business. The data presented is based on the published pro forma accounts for the Market, which represents an aggregation of all syndicates participating at Lloyd's. As such, some premium included for Lloyd's may also be included by other groups that consolidate their Lloyd's operations.

15 Tokio Marine Global Ltd. (U.K.) changed its name to "Tokio Millennium Re (UK) Limited" as of January 1, 2011.

16 All Transatlantic Reinsurance Company premiums are considered Property & Casualty, including Accident & Health. In 2010, Accident & Health net premiums written totalled \$142.4 million.

17 In first quarter 2011, Odyssey America Reinsurance Corp. changed its name to Odyssey Reinsurance Co. 2010 ending surplus reflects the transfer for Clearwater Insurance Company.

18 Data presented includes intra group reinsurance.

19 All Putnam Reinsurance Company premiums are considered Property & Casualty, including Accident & Health. In 2010, Accident & Health net premiums written totalled \$3.1 million.

**Net reinsurance premiums written** = gross reinsurance premiums written less reinsurance premiums ceded; relate to a company's reinsurance business only, unless where separately indicated  
**Pretax operating income** = underwriting profit (or loss) + net investment income + other income. Net realized and unrealized investment gains/losses are excluded from this item

**Combined Ratio** = (net losses incurred + net underwriting expenses)/net premium earned  
**Total adjusted shareholders' funds** = capital + shareholders' reserves (including claims-equalization reserve and any excess or deficiency of market value of investments over the balance sheet value)  
**ROR** = pretax operating income/total revenue (Total revenue = net premiums earned + net investment income + other income)

**N.A.**—Not available

**N.M.**—Not meaningful

# Consistent Application Of ERM Helps Global Reinsurers Maintain Their Financial Strength Under Adverse Conditions

By Miroslav Petkov and Laura Santori

Standard & Poor's Ratings Services sees a well-constructed and well-implemented ERM framework as a key tool that enables insurers to manage their financial strength. Strong ERM frameworks help insurers to identify, measure, and manage risk exposures and losses within predetermined tolerance guidelines.



Since we introduced our ERM criteria in 2005, we have found that global reinsurers and groups with complex risk profiles tend to have more-advanced ERM capabilities than the rest of the industry. Larger insurers and those with complicated risk profiles generally emphasize risk discipline in their organizations because they recognize the importance of ERM. This is one of the reasons why reinsurers continue to dominate our “excellent” and “strong” ERM assessments among the insurance companies we rate across the world. ERM is of high importance to our rating assessment of global reinsurers because of the complexity and volatility of the reinsurance business.

Where reinsurers maintain their commitment to effective ERM practices and continuously improve

their risk management frameworks, we believe it helps them to preserve their financial strength and take advantage of any potential opportunities. Most reinsurers tend to continually develop their risk management culture, technical risk controls, and modeling capabilities, in our experience. Reinsurers have also made progress in developing strategic risk management by demonstrating a consistent and seasoned use of risk/reward trade-offs in organizational decision making.

## Overview

- Most reinsurers tend to continually develop their risk management culture, technical risk controls, and modeling capabilities.
- We are introducing analysis of insurers' economic capital models in our ERM assessments; it will form a key part of our analysis at the upper end of the assessment scale.
- As new regulatory regimes are introduced, they could open up new opportunities for high-rated reinsurers with the capacity to offer protection in a more-complex environment.

We have seen further evidence of ERM's value for reinsurers over the past year. Despite strong balance sheets, many reinsurers have chosen to follow prudent investment policy. On the underwriting side, we have observed a reduced willingness to provide reinsurance capacity at inadequate rates. Some players scaled back their business and reduced their peak exposures where the required returns were held to be insufficient for the assumed risk. This reflects, to some

**Table 1: Enterprise Risk Management Score Features**

| Classification                     | Definition   |
|------------------------------------|--|
| Excellent                          | Insurer has, in our opinion, extremely strong capabilities to consistently identify, measure, and manage risk exposures and losses within the company's predetermined tolerance guidelines. Risk control processes are leading edge, applied consistently, and executed effectively. The company continues to develop its risk control processes to integrate new technologies and adapt to the changing environment. There is consistent evidence of the enterprise's practice of optimizing risk-adjusted returns, resulting in an overall stronger financial strength than peers. Risk and risk management heavily influence the insurer's corporate decision-making.                                   |
| Strong                             | Insurer has, in our opinion, strong capabilities to consistently identify, measure, and manage risk exposures and losses within the enterprise's predetermined tolerance guidelines. A strong ERM insurer is somewhat more likely to experience unexpected losses that are outside of its tolerance level than an excellent ERM insurer. There is clear evidence of the enterprise's practice of optimizing risk-adjusted returns, though it is not as well developed as those of an excellent ERM insurer. Risk and risk management are important considerations in the insurer's corporate decision-making.  |
| Adequate with positive trend       | Further along the ERM capability continuum are those companies that have a strong assessment for risk management culture and the near-term potential for strong strategic risk management in addition to having all of the characteristics of companies assessed as adequate with strong risk controls. It is our expectation that a strong assessment of ERM is possible for these companies within 24 months.  |
| Adequate with strong risk controls | These companies generally operate with traditional and largely silo-based risk management practices. They have strong or excellent risk controls for all material risks but, in our opinion, have not developed a holistic view of their risks through a fully developed economic capital model or other tools. Strong risk controls are a key component to maintaining results within tolerance. Therefore, a company in this category will have demonstrated not only the ability to identify and measure its key risks, but in addition, strong mitigants and controls have been put in place, which enable the company to manage its risk within stated tolerances at a very high level of confidence. |
| Adequate                           | Insurer has, in our opinion, capabilities to identify, measure, and manage most major risk exposures and losses, but the process has not been comprehensively extended to all significant risks facing the enterprise. Insurer loss/risk tolerance guidelines are less developed. Execution of its existing risk management programs is sufficient, albeit less comprehensive, than strong and excellent ERM practices. Unexpected losses are more likely to occur, especially in areas beyond the scope of the existing ERM practices. Risk and risk management are often important considerations in the insurer's corporate decision-making.  |
| Weak                               | Insurer has, in our opinion, limited capabilities to consistently identify, measure, and manage risk exposures across the company and, thereby, limit losses. Execution of its risk management program is sporadic, and losses cannot be expected to be limited in accordance with a set of predetermined risk/loss tolerance guidelines. Risk and risk management are sometimes considered in the insurer's corporate decision-making. Business managers have yet to adopt a risk management framework, are satisfying regulatory minimums without regularly applying risk management to their business decisions, or have very recently adopted a risk management system that is yet to be tested.       |

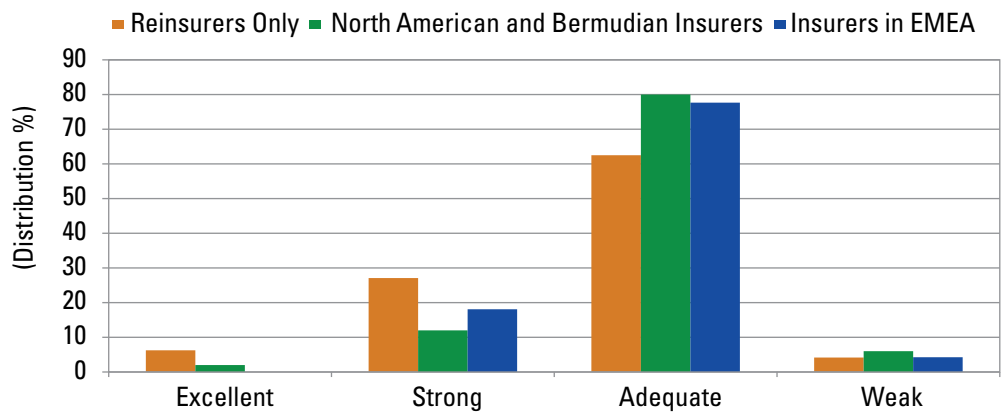
extent, the effect of consistently implementing ERM frameworks, which give global reinsurers a clear set of risk preferences, better risk-measuring techniques, and risk-selection practices. We have noted that reinsurers are also starting to embed recent changes to investment risk controls. This supports the company's ERM assessment as it allows them to more effectively identify, monitor, and manage investment risk within the still-uncertain financial market.

The industry has recently suffered several major catastrophe losses, including the earthquakes in Japan and New Zealand and events in Australia. These events have caused some insurers to reassess their catastrophe risk controls, approach to modeling catastrophe risk, and use of catastrophe models. The Japanese earthquake revealed several limitations in the catastrophe

models. Large insured losses arose from the tsunami, a peril that is not included in most commercially available catastrophe models. Geologists also believed that the fault line on which the earthquake occurred could not produce an earthquake of such magnitude.

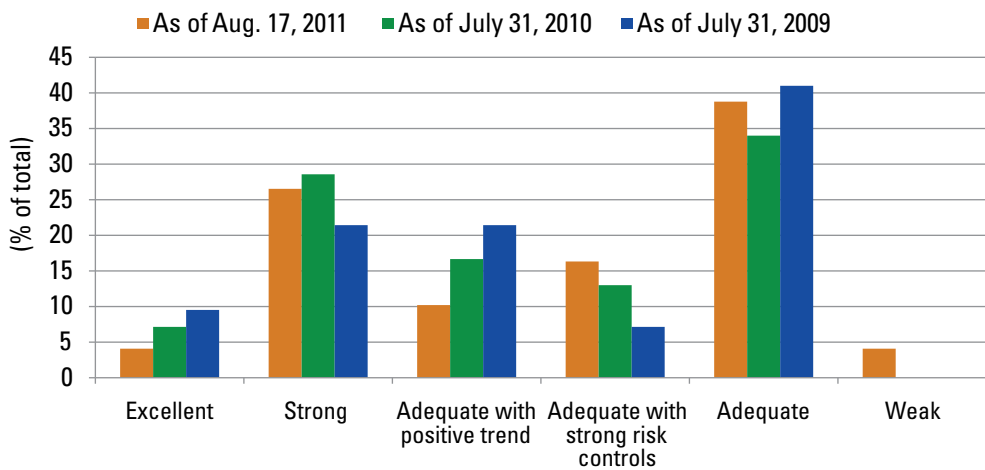
These events, and the associated losses, highlighted some of the potential inadequacies of catastrophe models and the problem for reinsurers of relying on these for strategic decision making. As part of our risk management reviews, we assess how each reinsurer tests that these models reflect its own risk profile, the process it uses to make adjustments, and the subsequent translation of these into business decisions such as pricing, risk limits, and retrocession (see "S&P Assessment Of Reinsurers' ERM Places High Importance on Understanding Of Catastrophe Models").

**Chart 1: Comparison Of ERM Scores For Reinsurers And Insurance Companies By Region**



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**Chart 2: ERM Score Distribution For Reinsurers (2009-2011)**



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### What Makes The Difference Between “Excellent” And “Strong” ERM?

We distinguish “excellent” ERM programs from “strong” by looking for a long track record of efficient, well-entrenched, and highly advanced ERM practices in the everyday processes and culture of the company. There is clear evidence of optimizing risk-adjusted returns in companies that are scored as “strong.” However, insurers with “excellent” ERM frameworks have been more consistent in optimizing their risk-adjusted returns than their peers.

Large, highly complex groups with wide-ranging business and geographic segments may need longer to fully and deeply ingrain a consistent groupwide ERM program and culture than less-complex groups with a more-focused business model.

We currently regard the ERM programs of the Endurance Group and Renaissance Re as “excellent”. Both groups focus on writing highly volatile natural catastrophe risks across the world. They differentiate themselves from reinsurers that we consider to have “strong” ERM capabilities through their well-seasoned and sophisticated ERM practices. We believe that these companies’ long-standing commitment to ERM is an important factor in their good performance over the cycle.

Although we continue to view favorably PartnerRe’s risk management practices, we lowered its ERM score to strong. The departure from the score of excellent reflects our concern that PartnerRe’s ERM framework has not been evolving in step with

the growing complexity of the reinsurer’s risk profile. We lowered Platinum’s ERM score to adequate from strong to reflect our updated view of Platinum’s catastrophe risk controls in light of the higher-than-expected catastrophe losses Platinum reported during the first six months of 2011.

### Global Reinsurers Make A Strong Showing In Our Assessments Of Insurance Companies’ ERM Programs

Among the 339 insurance groups we rate across the world, reinsurers figure prominently in the “excellent” and “strong” categories (see Chart 1). In North America and Bermuda, two of the four companies with an “excellent” ERM score and seven of the 18 companies with a “strong” score are reinsurers. In Europe, the Middle East, and Africa (EMEA), reinsurers represent six of the 27 companies with “strong” ERM assessments.

Most regional reinsurers have “adequate” ERM assessments. These reinsurers typically have less complex business models, and narrower risk profiles. They have very limited exposure to long-tail risk or natural catastrophes, and high capitalization relative to their risk exposures. Consequently, we think these companies have less need for a sophisticated ERM system to maintain their financial strength.

### Economic Capital Models Are Due To Become More Important In Our Analysis

In our view, a credible economic capital model (ECM)

**Table 2: Reinsurance ERM Assessments And Ratings\***

| As of August 17, 2011                    |                       |
|--|-----------------------|
| Reinsurer                                | ERM score             |
| Endurance Specialty Holdings Ltd.        | Excellent             |
| RenaissanceRe Holdings Ltd.              | Excellent             |
| ACE Tempest Reinsurance Ltd.             | Strong                |
| Allied World Assurance Co. Holdings Ltd. | Strong                |
| Arch Capital Group Ltd.                  | Strong                |
| Aspen Insurance Holdings Ltd.            | Strong                |
| AXIS Capital Holdings Ltd.               | Strong                |
| Catlin Group Ltd.                        | Strong                |
| Hannover Rueckversicherung AG            | Strong                |
| Montpelier Re Holdings Ltd.              | Strong                |
| Munich Reinsurance Co.                   | Strong                |
| PartnerRe Ltd.                           | Strong                |
| QBE Insurance Group Ltd.                 | Strong                |
|  | continued overleaf... |

## ERM

**(continued)Table 2: Reinsurance ERM Assessments And Ratings\***

| <b>As of July 31, 2011</b>                                |                                    |
|---|------------------------------------|
| SCOR SE   | Strong                             |
| Swiss Reinsurance Company Ltd.                            | Strong                             |
| XL Capital Group  | Strong                             |
| Amlin PLC   | Adequate with positive trend       |
| Deutsche Rueckversicherung AG                             | Adequate with positive trend       |
| Korean Reinsurance Co.                                    | Adequate with positive trend       |
| Lancashire Insurance Co. Ltd.                             | Adequate with positive trend       |
| Toa Reinsurance Co.                                       | Adequate with positive trend       |
| International General Insurance Co. Ltd.                  | Adequate with strong risk control  |
| Everest Reinsurance Co.                                   | Adequate with strong risk controls |
| General Reinsurance Group                                 | Adequate with strong risk controls |
| Lloyd's   | Adequate with strong risk controls |
| Thai Reinsurance Public Co. Ltd.                          | Adequate with strong risk controls |
| Transatlantic Holdings Inc.                               | Adequate with strong risk controls |
| Validus Holdings Ltd.                                     | Adequate with strong risk controls |
| White Mountains Re Group Ltd.                             | Adequate with strong risk controls |
| BEST RE   | Adequate                           |
| Caisse Centrale de Reassurance                            | Adequate                           |
| Kuwait Reinsurance Co. K.S.C.                             | Adequate                           |
| Manulife Financial Corp.                                  | Adequate                           |
| Nacional de Reaseguros S.A.                               | Adequate                           |
| Odyssey Re Group Ltd.                                     | Adequate                           |
| Platinum Underwriters Holdings Ltd.                       | Adequate                           |
| Reinsurance Group of America Inc.                         | Adequate                           |
| Saudi Re for Cooperative Reinsurance Co.                  | Adequate                           |
| Societe Centrale de Reassurance                           | Adequate                           |
| Taiping Reinsurance Co. Ltd.                              | Adequate                           |
| Takaful Re Ltd.   | Adequate                           |
| Trust International Insurance & Reinsurance Co. B.S.C.(c) | Adequate                           |
| Milli Reasurans T.A.S.                                    | Adequate                           |
| Moscow Reinsurance Co.                                    | Adequate                           |
| Polskie Towarzystwo Reasekuracji S.A.                     | Adequate                           |
| Pozavarovalnica Sava, d.d.                                | Adequate                           |
| African Reinsurance Corp.                                 | Adequate                           |
| Belarusian National Reinsurance Organization              | Weak                               |
| Unity Re  | Weak                               |

\*ERM scores refer to the core operating (re)insurance entities of the groups listed.



and a strong ERM program are fundamental to an insurance company's management and decision-making processes. We have published our criteria for analyzing ECMs as an additional part in our ERM analysis (the "ERM Level III" review, see "A New Level Of Enterprise Risk Management Analysis: Methodology For Assessing Insurers' Economic Capital Models," published on RatingsDirect on the Global Credit Portal on Jan. 24, 2011).

ERM Level III reviews will be part of our rating analysis of all insurers and reinsurers that have a credible ECM. We believe that an ECM review is likely to give us significant additional insight into a company's ERM capabilities, including how it quantifies risks, the interdependencies within its risk profiles, and a clearer picture of its capital needs.

Due to the importance our ERM criteria place on the processes that enable senior management to make use of economic capital models (ECMs) in decision making, we presently expect that only insurers with credible ECMs will be able to achieve an ERM score of "excellent."

### Regulatory Changes Could Help Reinsurers That Can Meet The Requirements

We consider that reinsurers of high credit quality are likely to benefit from a higher demand for reinsurance as various regimes--Solvency II in the EU, the Individual Capital Adequacy Standards in the U.K., Switzerland's solvency test, and the Bermuda Monetary Authority's new regulatory practices--come into effect. Insurers are likely to seek increased levels of risk transfer to high credit quality reinsurers to reduce their capital requirements under these regimes.

We believe that reinsurers, in particular, those whose ERM we score as "excellent", "strong", and to a lesser extent "adequate with a positive trend", are well prepared to manage additional regulatory requirements.

In our view, reinsurers with advanced ERM capabilities are in a relatively good position to receive approval to use their own internal models to define

regulatory capital. We believe this should allow them to adopt more-efficient capital management relative to their specific risk profiles. European and Bermudian reinsurers with an "adequate" ERM score are likely to need further investments to meet the demanding requirements for risk management and internal model approval. If a company's model is not approved, it will have to use the standard regulatory formula to determine its level of capitalization. This could increase its cost of required capital, which in turn is likely to affect its ability to price competitively.

### Consistently Strong ERM Could Open Up Opportunities For Reinsurers

Reinsurer profitability is likely to remain under pressure in the short term. Therefore, we regard it as critical that reinsurers continuously reinforce their commitment to effective ERM practices in order to maintain their financial strength. This can be done by regularly updating their risk-appetite frameworks, and sticking to a risk- and return-oriented underwriting and investment strategy. In difficult market conditions, we view management's ongoing commitment to ERM as fundamental to keeping potential losses within a reinsurer's defined risk tolerance, while at the same time maximizing the risk/return profile.

Consistently strong ERM practices could generate competitive advantages for reinsurers. Primary insurers are increasingly seeking greater credit quality when placing their reinsurance programs. In addition, an advanced understanding of risk, coupled with sophisticated emerging risk management capabilities could enable reinsurers to benefit from the new business opportunities these ongoing developments create. ■

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**Table 3: Enterprise Risk Management Score Migration**

| 2010 Scores                        | 2011 Scores |        |                              |                                    |          |      |
|------------------------------------|-------------|--------|------------------------------|------------------------------------|----------|------|
|                                    | Excellent   | Strong | Adequate with positive trend | Adequate with strong risk controls | Adequate | Weak |
| Excellent                          | 2           | 1      | 0                            | 0                                  | 0        | 0    |
| Strong                             | 0           | 11     | 0                            | 0                                  | 2        | 0    |
| Adequate with positive trend       | 0           | 2      | 4                            | 0                                  | 0        | 0    |
| Adequate with strong risk controls | 0           | 0      | 1                            | 6                                  | 0        | 0    |
| Adequate                           | 0           | 0      | 0                            | 2                                  | 16       | 0    |
| Weak                               | 0           | 0      | 0                            | 0                                  | 0        | 2    |

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# Rating Implications For G-SIFI-Designated Insurers

By Rob Jones and Rodney A Clark

**The potential designation of insurers as globally systemically important financial institutions (G-SIFIs) is likely to be prominent on the agendas of the CEOs of the world's largest insurance and reinsurance groups. For those insurers that the G20's Financial Stability Board (FSB) designates as a G-SIFI, Standard & Poor's Ratings Services sees this as having a similar impact to solvency reform and the implementation of International Financial Reporting Standards. We believe that most insurers will try to avoid G-SIFI status, but some may be unsuccessful.**

Although the FSB has not yet made the consequences of designation clear, these may include greater regulatory oversight, higher capital requirements, and legal restructuring. All of these could have either negative or positive rating implications. If we believed that designation as a G-SIFI signaled that the insurer could benefit from implicit government support, it might have positive rating implications. However, this is not currently our expectation.

## Frequently Asked Questions

### *What is a G-SIFI?*

In the aftermath of the 2008 financial crisis, the Group of Twenty (G-20) leaders established the FSB and

charged it with promoting global financial stability. This included identifying financial institutions that are systemically important at a global level. The FSB describes systemically important financial institutions (SIFIs) as “firms whose disorderly failure, because of their size, complexity, and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity.”

The consequences of being identified as a SIFI are not clear, although we would expect those SIFIs that are clearly systemic in a global context (G-SIFIs) to face the most significant consequences. One of the FSB's objectives is to minimize taxpayer exposure to these institutions should they get into difficulties. We

## Regulatory Update

expect the FSB to announce the identities of the entities to be designated as G-SIFIs by November 2011.

### *Will the FSB designate insurers as G-SIFIs?*

We believe that the FSB's remit is principally a response to the problems the banks faced during the 2008 financial crisis. However, insurers come within the scope of the regime. Based on the FSB's definition of a SIFI and our experience of the financial crisis, we would expect the FSB to designate many fewer insurers than banks as G-SIFIs. While several large insurance groups have a global presence, in our view, their products are generally not highly complex and they usually have a low level of systemic interconnectedness. Furthermore, the established resolution regimes for insurers that get into difficulties can be effective in limiting the impact of these difficulties on policyholders, and therefore on taxpayers.

### *Which insurers could be designated as G-SIFIs, based on the evidence of the 2008 financial crisis?*

A few insurers received government support during the financial crisis. While American International Group Inc. (AIG) is predominantly an insurance group, the support provided to its holding company was mainly in respect of the shadow banking activities of its AIG Financial Products business. Some bancassurance groups received support, but mainly in respect of their banking activities.

In our view, apart from AIG, only three other predominantly insurance groups received government support. Hartford Financial Services Group Inc. and Lincoln National Corp. both received support through the U.S. Troubled Assets Relief Program (TARP) in the form of preferred share investments, and the AEGON insurance group received a capital injection from the Dutch government. We did not perceive these provisions of support as rescues, although they did augment financial strength. We did not, and do not, impute an expectation of extraordinary state support that would have enhanced these ratings by even one notch.

The U.S. government provided support to just three insurance groups: AIG, Hartford, and Lincoln. By contrast, approximately 600 banks received TARP funding in the U.S.

### *How does Standard & Poor's expect bond insurers to fare?*

Bond insurers, otherwise known as financial guarantors, mainly got into difficulties by going beyond their traditional remit of insuring municipal bonds. They became extensively involved in insuring, and investing in, structured finance bonds such as collateralized debt obligations (CDOs). Their losses and subsequent rating downgrades undermined their traditional business of providing credit enhancement to U.S. municipalities, and thereby limited some municipalities' access to capital markets. Thus the business of bond insurance amplified economic

stress, although the U.S. government did not provide any direct support to bond insurers.

Using the FSB's definition, U.S. regulators could designate such insurers as SIFIs based on their interconnectedness at a national level. To date, however, our experience of this market, which includes severe credit stress and defaults by bond insurers, does not alter our view that bond insurers' credit quality is not measurably influenced by government action. Therefore, our ratings are not enhanced by an expectation of extraordinary government support.

### *How does Standard & Poor's expect trade credit insurers to fare?*

Trade credit insurance, which protects insureds against the risk of nonpayment, is one of the few lines of business that are highly correlated with economic trends. Trade credit insurance is significant in Europe, but much less so in North America, where banks typically fulfill the same need.

A number of trade credit insurers incurred substantial losses in 2008 and 2009. Their business model permits them to respond rapidly to increased credit losses by reducing or withdrawing credit limits and increasing premiums. Their actions contributed to the demise of several corporates in Europe, notably retailers, whose suppliers could no longer obtain adequate credit protection against payment for their products. This caused a number of governments to provide credit insurance protection separately from that provided by the trade credit insurers. Some governments went a step further and provided reinsurance to the trade credit insurers themselves, through state-owned reinsurers.

The contraction of the trade credit insurers' exposure amplified the economic pressures of the time and under the FSB's definition, such insurers might be considered SIFIs based on their interconnectedness at a regional level. To date, however, our experience in this market does not alter our view that trade insurers' credit quality is not measurably influenced by government action. Therefore, our ratings are not enhanced by an expectation of extraordinary government support.

### *What about the rest of the insurance world?*

We don't expect to see many insurers designated as G-SIFIs. Beyond bond insurance and trade credit, few lines of business in insurance produce amplification of risk because most insurance products are only loosely correlated with the economic volatility or not correlated at all.

In non-life insurance, premium growth tends to track GDP growth. Recessions can produce spikes in claims activity because policyholders have a higher propensity to claim. While the profits of non-life insurers may be dented in economic recessions, they often remain profitable. Insurance sectors have separate cycles, and in our experience, none of these insurance cycles moves in lock step with economic cycles. Non-life insurers tend to make losses after large "catastrophic" insured events or after prolonged periods of underpricing their products.

Life insurers are slightly more prone to amplify economic volatility, mainly because they tend to take greater asset risk than non-life insurers to match their longer-term policyholder liabilities. Their assets may be impaired in a recession, particularly if they mark their investments to market. A high proportion of equities and corporate bonds were impaired during the financial crisis. However, life insurance policyholders are discouraged from surrendering their policies before they mature by product designs or personal tax systems. This, combined with the forbearance of regulators, meant that forced sales of investments were at relatively low levels. Most insurers stood by their typical hold-to-maturity stance. Far from amplifying economic volatility, the insurance industry dampens asset price volatility, in our opinion.

Some forms of life insurance are more systemically risky than the mainstream of individual life insurance business. Institutional investment products, such as guaranteed investment contracts (GICs) and funding agreements, are mainly offered by insurance groups in the U.S. GICs are insurance-backed contracts that offer guaranteed rates of return. Greater liquidity risk is associated with them because contracts may be surrendered at short notice and with limited penalties. In extreme cases, a scenario similar to a run on a bank can occur. For example, in August 1999, the General American group went into administration after holders of GICs issued by its subsidiary, General American Life Insurance Co., exercised put options that required the life insurer to rapidly repay principal and interest.

The features of these products have changed to reduce the liquidity risk since 1999 and we believe balanced portfolios and good liquidity management can reduce these risks. Good liquidity management can also reduce the risks of insurers engaged in commercial paper issuance and stock lending.

#### *How do fundamental differences between banks and insurers make banks more vulnerable to becoming systemically interconnected?*

The insurance industry's basic model differs fundamentally from banking, in our view. While the difficulties faced by certain banks during the recent financial crisis included severe liquidity and funding issues, in our experience the insurance business model rarely gives rise to liquidity and refinancing concerns. This was borne out during the crisis.

The insurance business model is unusual in the corporate world in that insurers receive their principal revenues (premiums) before they pay their principal expenses (claims). Asset liquidity is generally very high, insurers are generally not highly leveraged, and the insurance-linked securities market is in its infancy.

In non-life insurance, catastrophes present liquidity demands, but most reinsurance agreements allow for accelerated settlement of reinsured claims. The liquidity impact on insurers is mitigated by the amount of time it takes to settle catastrophe claims--typically years, rather

than weeks and months. Some countries require insurers to post collateral against outstanding claims, which accelerates the need for cash. However, in the past few years, we have seen a trend in Europe, and more recently in several U.S. states, to reduce regulatory imposed collateral requirements. Catastrophes are generally not correlated with economic volatility, although they may coincide.

#### *Does Standard & Poor's expect national champions to be designated as G-SIFIs?*

A number of insurers have market-shaping positions in their home markets (for example the Generali group in Italy and the Mapfre group in Spain) and are sometimes referred to as "national champions".

If these insurers got into difficulties, governments might be persuaded to support them to avoid the destabilizing effects of the withdrawal of insurance capacity in non-life business or the loss of savings underpinned by life insurers. However, we do not believe that the likelihood of such support is sufficient for it to be reflected directly in their ratings. Furthermore, if the support was forthcoming it would likely be limited to certain entities within the group, with an emphasis on domestic operating companies.

#### *How systemically important are reinsurers?*

Reinsurers could be seen as highly interconnected with primary insurers. However, as long as the provision of reinsurance remains as diversified as it is currently, we would expect systemic risk to be limited. Several reinsurers have failed over the past two decades, including some large ones, such as reinsurance operations of the former Germany-based Gerling Group, which went into run-off in 2002. There were no associated material systemic implications.

Reinsurers' risk management practices have improved markedly since 2001 and European reinsurers have been regulated since 2005. Even in a pre-regulated Europe, there was a well-established resolution regime that placed failed reinsurers into orderly run-off.

Aggregate reinsurance recoverables amounted to approximately 25% of primary insurers' capital at year-end 2009. Conservative assumptions regarding reinsurer default and recovery rates imply to us that the industry should even be able to digest the near-term effect of a widespread reinsurer default.

After major catastrophic events, the barriers to entry are low, allowing new entrants to quickly replenish reinsurance capacity. Many new reinsurers entered the market after the Sept. 11 attacks on the World Trade Center in 2001 and the U.S. hurricanes Katrina, Rita, and Wilma in 2005.

Finally, since reinsurance is a global business, we believe it unlikely that a single government would support a specific reinsurer unless it was government-owned. We would reflect such ownership by applying our government-related entity (GRE) criteria (see "Rating Government-Related Entities: Methodology And Assumptions," published on Dec. 9, 2010).

## Regulatory Update

### *How does Standard & Poor's recognize systemic importance in its ratings?*

While we do not use the term SIFI, we do classify banks by their systemic importance to analyze the likelihood of extraordinary government intervention (normally manifested in the form of a capital injection). Where we believe that such support is likely, we may add explicit notches of support to the entity's stand-alone credit profile (see "How Systemic Importance Plays A Significant Role In Bank Ratings," July 3, 2007). We currently recognize such support in the ratings on a material number of banks, but we impute no such support to any pure insurer, other than government-owned insurers, or pure insurance groups. This reflects our perception of the relative systemic importance of insurers compared with banks. AIG's holding company enjoys one notch of support and the banks in certain bancassurance groups also benefit from support, but again, these are not pure insurers.

### *How will Standard & Poor's respond to insurers designated as SIFIs?*

We believe the rating consequences for insurers that are designated as SIFIs could be either negative or positive. While the insurer may be required to hold more capital--which is positive for ratings, all other things being equal--the insurer may also be required to enhance the quality of capital instruments, which could lead to a higher cost of capital and which is generally negative for ratings. The insurer may also have heightened regulatory oversight from all regulators involved in regulating a group, which may be positive or negative. A group may also be motivated to restructure, for example, by divesting its more systemically risky activities. We currently already include such factors in our stand-alone credit profile (SACP) analysis for insurers.

Separately, we will need to assess whether a G-SIFI designation creates an expectation of government support that we do not currently factor into non-GRE insurance ratings; and whether this support would be sufficiently strong and timely to have potential rating consequences. We currently recognize the likelihood of the provision of sufficient and timely extraordinary governmental support to enhance our insurer ratings only in exceptional cases.

A G-SIFI or SIFI designation may be positive in terms of notches of support that enhance the rating, but may also be positive for the insurer's SACP, because it may enhance its competitive position compared with non-SIFIs. However, a decision to impute support into the rating would first need to consider whether the government concerned may actively motivate the insurer to restructure and thereby remove the SIFI status. ■

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# Insurance-Linked Securitization: Navigating Through A Turbulent Start To 2011



By Maren Josefs, Gary Martucci and Cameron Heath

**Despite a turbulent start to the year, with a number of major catastrophes and a significant model change in the first half of 2011--expected losses on outstanding deals modeled by Risk Management Solutions (RMS) increased by 90% on average--we believe the insurance-linked securitization (ILS) market has coped well. There has been continued issuance of new catastrophe (cat) bonds, suggesting that the ILS market continues to play an active part in the global (re)insurance industry.**

For investors and sponsors both, cat bonds have performed largely as expected, especially given the size of Great East Japan Earthquake and ensuing tsunami in Tohoku, Japan. In our view, those bonds that market participants would have expected to default (or to experience a first event trigger) did so and have given issuers the protection they sought, and those that were not expected to default have performed to investors' expectations.

## OVERVIEW

- The ILS market has coped well, despite significant catastrophic events early in 2011 and a change to the RMS U.S. hurricane model.
- We downgraded four bonds following the events in Tohoku, Japan.
- Expected losses increased under the latest RMS model, leading to 11 downgrades.
- New ILS issuance slowed in Q2 compared with previous years.

Following the Tohoku event, we downgraded four bonds. This was due to the increased risk of the noteholders experiencing a loss of principal.

Holders of Topiary Capital Ltd.'s series 2008-1 notes (sponsored by Platinum Underwriters) or Montana Re Ltd.'s series 2010-1 class E notes (sponsored by Flagstone Reinsurance Suisse S.A.) incur a loss if two covered events occur within the risk period (a second-event bond). As the first (activation) event has now occurred, we lowered the ratings on these bonds to 'CCC+ (sf)' and 'CCC (sf)', respectively. So far, investors have not experienced a loss of principal;

however, the increased probability of attachment until the subsequent annual reset for Montana Re's series 2010-1 class E notes, or until the final maturity of the notes for Topiary Capital's series 2008-1 notes, has resulted in a mark-to-market loss for all noteholders. Topiary is now off risk and matured on Aug. 5, 2011.

Vita Capital IV Ltd.'s series III protects Swiss Reinsurance Company Ltd. (Swiss Re) against adverse mortality movements in the U.S. and Japan. We have also downgraded this series to 'BB (sf)' from 'BB+ (sf)'. This downgrade was due to the increased probability of attachment resulting from the impact of the tsunami risk in Japan--which is currently not reflected by RMS's mortality model--and the large number of casualties already observed in Japan following the earthquake and tsunami on March 11, 2011.

We also downgraded to 'B (sf)' Atlas VI Capital Ltd.'s series 2009-1 class A notes after RMS determined that two earthquakes in April, following the main Tohoku shock, had been qualifying events (see "Atlas VI Capital Ltd. 2009-1 Class A Notes Downgraded On Exposure To Japanese Earthquake," published May 20, 2011. This is an annual aggregate bond sponsored by SCOR Global P&C SE that also covers European windstorms, where these events increase the probability that noteholders could experience a loss of principal or interest.

We also note that Muteki Ltd. (not rated by Standard & Poor's)--which was sponsored by Munich Reinsurance Co. on behalf of Zenkyoren, the National Mutual Insurance Federation of Agricultural Cooperatives of Japan--defaulted, and was a total loss to noteholders.

In the U.S., there have been a significant number of large tornados over the past few months, which has led to our downgrading Mariah Re Ltd. to 'CCC+ (sf)' from 'B (sf)'. Mariah Re was the first cat bond to cover only U.S. tornado risk. It was sponsored by American Family Mutual Insurance Co.

### Model Changes Impact Issuance In Q2

Under the latest U.S. hurricane model from RMS released in February 2011, expected losses increased by an average of 90% (medium-term catalog) for outstanding ILS transactions. Because of the model change, we downgraded 11 bonds and affirmed the ratings on four bonds.

New ILS issuance slowed considerably in second-quarter (Q2) 2011 compared with previous years. We consider the release of the latest version of RMS's U.S. hurricane model to be a key reason for this. As the insurance market and investors try to understand how this change affects their portfolios, it is perhaps unsurprising that issuance has slowed.

It is worth noting all three risk-modeling agencies update each of their models on a regular basis, albeit rarely with such an impact. Consequently, we believe the effect on issuance and ratings can be considered an exception.

In the first half of 2011, Standard & Poor's rated issuance has reached \$1.57 billion. The total issuance of \$870 million in Q1 was a record for that period; by contrast, we rated only two transactions in Q1 2010, totaling \$225 million. Once again, U.S. hurricane was the predominant peril being covered, solely or in combination with other perils. The increase in issuance may be explained by issuers trying to avoid issuing just before the start of the U.S. hurricane season. Last year, there was a temporary squeeze of available capital because nine transactions came to market in Q2, driving up ILS pricing for this peril.

In Q2 2011, we rated three transactions with a combined face value of \$601 million, compared with nine transactions with a face value of \$1.9 billion in Q2 2010.

### Issuance Levels In The Second Half Of 2011 Will Depend On Loss Activity And Reinsurance Rates

\$3.2 billion of cat bonds have matured from the beginning of the year to date, and another \$0.6 billion of rated transactions will mature during the remainder of 2011. We anticipated that issuers would seek to replace the expiring notes in the market, and although a number have come back to market, others have not yet done so.

In July, four further transactions entered the market with a total worth of \$630 million: Queen Street III Capital Ltd. (\$150 million European wind deal sponsored by Munich Re), Vita Capital IV's series V and VI (combined, a \$180 million mortality cat bond sponsored by Swiss Re), Embarcadero Re Ltd. (\$150 million California earthquake bond sponsored directly by the California Earthquake Authority (CEA)), and Pylon II Capital Ltd. (€150 million French wind cat bond providing protection to Électricité Réseau Distribution France (ERDF) via Natixis). All of these sponsors are repeat issuers (although Swiss Re used to sponsor the cat bonds on behalf of the CEA), and we expect to see further issuance over the next few months. In the past, Q3 has usually been a quiet period for ILS issuance. This time it looks as if it will exceed historical levels, which could be a sign of a change in issuance cycles for ILS. Reasons for the anticipated change could be that protection buyers were unable to obtain the full cover they have been seeking during the midyear reinsurance renewals, or that they fear a rush before year-end.

However, as in the aftermath of Hurricane Katrina, insurers are also setting up sidecar vehicles funded with mostly equity (see Table 1), and we have also seen some extra activity in the industry loss warranty and collateralized reinsurance market. The extra supply of capital seems to indicate that for the time being, at least, reinsurance pricing will remain more attractive than issuing securities in the capital markets.

We expect natural catastrophe bonds to regain their attraction for issuers. Once the global (re)insur-



**Table 1: Sidecar Activity 2011**

| Sidecar       | Sponsor    | Size (mil. \$) |
|---------------|------------|----------------|
| AlphaCat 2011 | Validus    | 180            |
| Accordion     | Lancashire | 250            |
| New Point IV  | Alterra    | 200+           |

ance market has fully digested the impact of the model updates and the events that have occurred this year, there is likely to be a need for more protection around the time of the Jan. 1, 2012 renewals. Cat bonds can also offer multiyear collateralized protection, which may attract protection buyers seeking to lock in current prices if the market hardens.

In addition, we anticipate some ILS issuance other than cat bonds, in particular on the life side or by sponsors trying to bring new risks to the market (such as the two Vitality Re Ltd. issues in the past eight months). ■

### Related Criteria And Research

All articles listed below are available on RatingsDirect on the Global Credit Portal, unless otherwise stated.

- Ratings Lowered On Five U.S. Hurricane Catastrophe Bonds Modeled By Risk Management Solutions, July 29, 2011
- Ratings On 10 U.S. Hurricane Catastrophe Bonds Modeled By Risk Management Solutions Removed From CreditWatch Negative, July 11, 2011
- Ratings Unchanged On Six Natural Catastrophe Bonds Exposed To Japan Earthquake Risk, March 11, 2011
- Methodology And Assumptions For Rating Natural Catastrophe Bonds, May 12, 2009
- Default Table Used To Rate Insurance-Linked Securitizations Updated, May 8, 2008

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# European Insurance Credit Trends: Despite Strong Balance Sheets, Insurers Are Uneasy About The Future

**By Rob Jones and Karin Clemens**

**Despite the strength of the balance sheets, there are many clouds on the horizon which are making European insurers uncertain about what the future may hold.**

In Standard & Poor's Ratings Services' opinion, the European insurance industry seems nervous as it enters the second half of 2011. We believe that insurers have largely restored their balance sheets from their low point in the first quarter of 2009. However, the negative implications of economic trends on the industry are compounded, in our view, by the potential impact of industrywide projects such as the

implementation of Solvency II supervision and the International Accounting Standards Board's Phase 2 insurance accounting project. Furthermore, later this year, the Group of Twenty's Financial Stability Board will announce which entities it has designated as systemically important financial institutions on a global basis (G-SIFIs). While we expect that most G-SIFIs will be banks, some insurers may also be in the frame.

The bias in our rating profile is consequently negative. Of our current ratings, 18% carry negative outlooks or CreditWatch placements, versus 5% with positive outlooks or CreditWatch placements. The remaining 77% carry a stable outlook. Nevertheless, our view of the sector remains strong relative to other rated corporates; the average long-term issuer credit rating on the 156 insurance groups we rate stands at 'A-'.

Until the first quarter of 2009, we saw the mark-to-market and impairment effects on insurers' investments deplete their balance sheets substantially. Since then, we believe that many of Europe's rated insurers have restored their capital adequacy through a combination of good earnings and the reversal of adverse corporate credit spreads. Insurers were generally not forced sellers of the investments that were most affected during the turmoil. However, capital adequacy remains a weakness for the ratings on some insurance groups, typically those with a large life insurance business.

We see signs that insurers are getting accustomed to the economic consequences of the turmoil. Low interest rates are an issue for many life insurers, especially where they have liabilities relating to with-profit products that provide minimum guaranteed investment returns. While the resulting reinvestment risk is likely to be problematic for such insurers, we believe its main effect will be to lower profitability. We anticipate that the pressure on ratings on the affected insurers is likely to increase if interest rates remain low for a prolonged period. A potential medium-term scenario of rising inflation and higher interest rates would relieve this pressure. However, we anticipate that it would also be likely to have an adverse effect on mark-to-market balance sheets and would erode expense margins.

We believe the economic consequences are also limiting life insurers' new business prospects. We attribute this to lower investor confidence (affecting savings and investment products), lower housing market activity (affecting mortgage-related products), and lower disposable incomes. Furthermore, lapse rates for life insurance policies have risen somewhat as policyholders surrender their policies or discontinue premium payments to realize or conserve cash.

We have observed that in periods of low investment returns, insurers' costs typically substantially reduce the yield passed on to policyholders on savings products, which generally makes them less appealing compared with noninsurance savings products.

In our view, these top-line issues have a direct bearing on insurers' profitability, as do the weaker returns on investments backing nonlinked policies and the charges that insurers levy on unit-linked policies and asset management products (which are largely based on the market value of the managed investments). On the non-life side, as is typical of recessionary conditions, claim frequency has increased because of the higher propensity of policyholders to claim, and a higher incidence of fraudulent claims.

We have found that non-life insurers currently tend to see inflation risk as a source of concern. Those with significant long-tail exposures, where inflation risk may not be adequately provided for in pricing, nor compensated for in likely future investment returns, are especially vulnerable. In our view, price adequacy in most lines of business is still softening or flat in most European markets. Exceptions include the U.K. and Italian motor insurance business, where we have seen material price corrections that were long overdue, in our view. These markets have performed very poorly in recent accident years. Overall combined ratios have been in the region of 120%, indicating weak underwriting profitability.

Looking ahead, we think that there will be an adverse effect on future non-life operating performance if economic activity does not continue on its modest upward path. This is also true of investment earnings, which are making a much smaller contribution to insurers' overall performance at present than they did in the first half of the decade.

Non-life natural catastrophe activity has been very high in the first half of 2011. While the events may erode capital levels for some reinsurers, most of these events were outside Europe and they mainly affect the global multiline insurers based in Europe. We anticipate that the reinsurance programs at these insurers should contain the effect of the catastrophe events on loss ratios to below 5% (see "Global Multiline Insurers Are Heading For Continued Ratings Stability, Despite Multiple Hurdles," published on June 28, 2011).

Below we summarize the trends in credit quality exhibited by life and non-life insurers for the larger insurance markets in Europe (see Table 1). There is no direct linkage between these trends and the outlooks on local insurers, mainly because parental support influences many of our ratings. However, the trends describe our view of the underlying direction of the credit quality of insurers' stand-alone credit profiles.

**Table 1: Credit Quality Trend By Market**

|          | U.K.     | France   | Germany  | Italy  | Spain    |
|----------|----------|----------|----------|--------|----------|
| Life     | Negative | Negative | Negative | Stable | Negative |
| Non-life | Stable   | Stable   | Stable   | Stable | Stable   |

## European Insurance Outlook

### Insurers Have Limited Exposure To Sovereign Risk

In our opinion, sovereign risk is more likely to erode profits than present a capital threat to the European insurance industry. The only nondomestic rating action directly attributable to the spate of recent European sovereign downgrades was that on Groupama, which we downgraded because of its exposure to Greek sovereign debt. Although some of Europe's larger insurers have significant holdings of Greek, Irish, and Portuguese sovereign debt, aggregate exposure has materially reduced over the past year. Furthermore, most exposure resides within life insurance operations where the impact of any losses may be shared with policyholders.

Our downgrade of the Republic of Ireland and consequent downgrades of Irish banks were followed by downgrades on three non-life Irish domestic insurers (Allianz PLC, Aviva Insurance (Europe) SE and RSA Insurance Ireland Ltd.). These insurers are affected, in our view, through their holdings of government debt, deposits with Irish banks, and the prospects for the Irish economy.

We continue to monitor insurers' exposure to sovereign debt, not only the ones mentioned above. We are also monitoring exposures to financial institutions' hybrid securities and, for those insurers with large U.S. subsidiaries, commercial mortgage-backed securities, collateralized debt obligations, commercial mortgages, commercial real estate, and residential mortgage-backed securities, that is, subprime and Alt-A.

### Solvency II Supervision And New IASB Accounting Standard May Put Cost Of Capital Under Pressure

We have observed that insurers have concerns about the implementation of Solvency II supervision, which is officially planned to go live on Jan. 1, 2013. The European Commission (EC) moderated the advice on solvency capital requirements provided by the Committee of European Insurers and Occupational Pensions Supervisors (which has since become the European Insurance and Occupational Pensions Authority) in the final calibration of the fifth Quantitative Impact Study (QIS 5). Despite this, the capital requirements are significantly higher than those in the QIS 4 calibration. We consider Europe's larger insurers are likely to be less affected because of the relatively high capital credit they will probably receive for diversification under Solvency II and because they are likely to use internal models for solvency purposes. Even so, we believe that supervisory capital may become a binding constraint for many insurers.

We believe that the final Solvency II implementing measures will reduce capital requirements in aggregate compared to QIS 5, but the nature and extent of the changes has yet to be publicly communicated. These measures are also expected to include a package of transitional provisions (involving the treat-

ment of hybrid securities and non-EU supervisory equivalence, for instance) that we expect will limit the initial impact. Until these measures are made public, and ultimately finalized--which is not expected to happen before the first quarter of 2012--uncertainty will remain. With the planned implementation date approaching, we believe insurers are concerned about the amount of time they will have to execute Solvency II's still-uncertain requirements.

While the cost of capital concerns (based on QIS 5) may ultimately be mitigated in the final implementing measures, similar concerns remain regarding the likely greater reported profit volatility arising from the IASB's phase 2 insurance accounting standard. The IASB is nearing completion of the standard, which is due to be published by December 2011, although implementation is unlikely before 2014.

### Some Insurers May Be Designated G-SIFIs

The group of Twenty (G-20)'s Financial Stability Board (FSB) could designate some insurers as globally systemically important financial institutions (G-SIFIs) in November 2011. This issue is prominent on the agendas of the CEOs of the world's largest insurance and reinsurance groups (see "Rating Implications For G-SIFI-Designated Insurers"). For the insurers affected, we believe that it ranks alongside solvency reform and International Financial Reporting Standards in terms of its potential impact. We believe that most insurers will avoid being designated as G-SIFIs, but some may be unsuccessful.

Although the FSB has not yet made the consequences of being designated clear, we expect these to include greater regulatory oversight, higher capital requirements, and legal restructuring. All of these could have either negative or positive rating implications. If the designation signals the increased likelihood of extraordinary government support for the insurers affected, we would need to consider the implications, because our criteria for imputing rating support only apply to banks (see "How Systemic Importance Plays A Significant Role In Bank Ratings", July 3, 2007).

Although the sector remains strong, all of the above emerging issues add to the uneasiness we observe among insurers and contributes to the negative bias that is present in our ratings. ■

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# Asia-Pacific Reinsurers Start To Push Through Higher Prices In Wake Of Regional Catastrophes

By Mark Legge, Paul Clarkson, Andy Chang, Reina Tanaka, Ayako Nakajima, Michael Vine and Connie Wong

**The Asia-Pacific region has been hit by several severe natural disasters in the past year. But Standard & Poor's believes that the reinsurance sector is managing the losses and there is evidence of hardening rates in some regions.**

Many global reinsurers with operations in Asia-Pacific have seen their underwriting result take a substantial hit from the series of natural disasters between September 2010 and June 2011. These included an earthquake and tsunami in Japan, two major earthquakes in New Zealand, and floods and a cyclone in Australia. Despite this, Standard & Poor's Ratings Services believes the impact on reinsurers' overall financial profiles can be managed. Outside Japan, regional domiciled rated reinsurers have limited or manageable exposure to the region's catastrophe events as they write mostly domestic business. As a result, we have not taken rating action or changed the outlook on reinsurers incorporated in Asia-Pacific recently.

## Overview

- While the recent spate of natural catastrophes has severely affected the underwriting results of global reinsurers, outside Japan, local reinsurers have experienced limited financial stress, and, as a result, we have not taken any rating action or changed the outlook on reinsurers incorporated in Asia-Pacific.
- Prospectively, we could see higher property catastrophe reinsurance premiums and tighter terms and conditions, especially in Japan, Australia, and New Zealand; this will assist in supporting underlying profitability.
- Reinsurance pricing in the rest of Asia (outside Japan) is uncertain, reflecting the counteracting effects of shrinking global reinsurance capacity and the competitive but rapid growth of primary insurance in the region.
- Soft reinsurance pricing is likely to continue in some parts of Asia, especially in those markets not prone to catastrophes, such as Singapore, Malaysia, and Thailand.

Insured claims from recent Asia-Pacific events could amount to as much as US\$51 billion, according to information from AIR Worldwide. Prospectively, the region could see higher reinsurance premiums and tighter terms and conditions on property catastrophe cover as international reinsurers attempt to claw back some of the losses. The chances of successfully imposing price increases on casualty business lines remain uncertain. Local reinsurers see the current renewal period as a potential tipping point for wider price increases, especially for catastrophe-prone markets such as New Zealand, Australia, the Philippines, Indonesia, and China. Whether the market hardens will depend on factors such as demand from primary insurers, and the availability of new capacity (see "Reinsurance Executives Foresee Some Rates Rising After The First Quarter's Natural Disasters", published on June 9, 2011).

## Uncertain Times For Reinsurers Operating In Asia-Pacific

The sheer number of severe natural hazard events that have occurred in the region within a relatively short time has created a degree of uncertainty in the reinsurance market. It has been difficult to be definitive, not only about gross claims costs, but in some cases, even about which event is responsible for the damage on which a particular claim is based. Moreover, the extent of the earthquake damage has caused a reappraisal of earthquake risk pricing. Some models appear to have materially underestimated the actual claims impact.

Prices will certainly rise significantly for property catastrophe cover for those areas that have incurred losses, or which are perceived to have high exposure (especially Japan, New Zealand, and Australia). However, the extent of further increase in prices and tightening in terms and conditions is still uncertain. In the



last renewal, the increase in price for catastrophe reinsurance was substantial--over 100%, in some cases--although a number of significant renewals are to be concluded in January 2012.

It appears that reinsurance capacity, especially for non property catastrophe lines in some Asian regions, may also shrink. However, soft prices in these lines are expected to continue in some parts of Asia-Pacific, especially in those markets not prone to catastrophes, such as Singapore, Malaysia, and Thailand.

### **Devastating Earthquake In Japan To Lead To Substantial Premium Increases For Reinsurers**

Our outlook on the non-life insurance sector in Japan is negative, reflecting downward pressure on insurers' financial bases due to the disaster and their modest underwriting performance. Insurance losses caused by the Great East Japan earthquake and tsunami that hit northeast Japan on March 11, 2011, are the highest recorded for the Japanese non-life insurance market. In the year to March 31, 2011, the top eight non-life primary insurers posted a total of ¥207.2 billion (\$2.5 billion) in incurred losses due to the earthquake, net of reinsurance recoveries of more than ¥400 billion. This excludes residential earthquake insurance, for which each insurer will draw down its contingency reserve for residential earthquake insurance. It will then offset the payouts in the companies' bottom-line earnings.

The effects of the disaster have already put non-life insurers' financial bases under stress. The underwriting losses caused by the event and faltering stock prices came on top of mediocre underwriting results in domestic insurance business in recent years. In our view, downward pressure on the credit quality of these eight companies will increase if another natural disaster strikes before they can restore their financial bases.

#### *Reinsurance pricing sees a sharp rise in the wake of the Japan earthquake*

Japanese non-life insurers rely heavily on catastrophe reinsurance for their commercial insurance risks and the April 1 renewals saw Japan earthquake excess-of-loss program premium rates increase by between 15% and 50%. The range of rate increases varied depending on whether the layer suffered a reinsurance loss from the disaster. A few insurers extended their existing cover and postponed the renewal negotiations until after the loss situation became clearer, but those companies' programs also faced markedly higher prices.

Reinsurance premium rates for nonproportional cover for windstorm risks also increased by 5% to 10%, having fallen at the 2010 renewal. These rises in reinsurance costs will reduce insurers' earnings if they cannot pass price increases to policyholders. Primary insurers are taking a very controlled stance toward underwriting extended earthquake coverage for com-

mercial lines, from an aggregate risk control and a risk-adjusted pricing perspective.

International reinsurers continue to play an important role as capacity providers for catastrophe risks in the Japanese insurance market. That said, we believe Toa Reinsurance Co. (Toa Re), the sole domestic reinsurer serving the non-life sector in Japan, will remain the preferred reinsurer. It has strong historical ties with most domestic primary insurers, and retrocessional ties with global reinsurers.

Toa Re's gross combined ratio deteriorated to 116% in the year to March 31, 2011, from 82% in the previous year. The rating on Toa Re is underpinned by its very strong capitalization. We expect the company to continue to moderate its exposure to catastrophe losses through strict risk underwriting and accumulation controls in and through its strong retrocession program.

### Tough Times For Reinsurers In Australia And New Zealand

Australia and New Zealand make up less than 2% of global non-life business by gross premium written. However, the recent cost to global reinsurers of covering these markets has far exceeded expectations. For example, Munich Reinsurance Co. lost €2.7 billion in the quarter to end-March 2011, of which €1.1 billion stemmed from the catastrophes in Australia and New Zealand. The remainder was mostly related to the Japan earthquake losses.

Munich Re and Swiss Reinsurance Company Ltd.

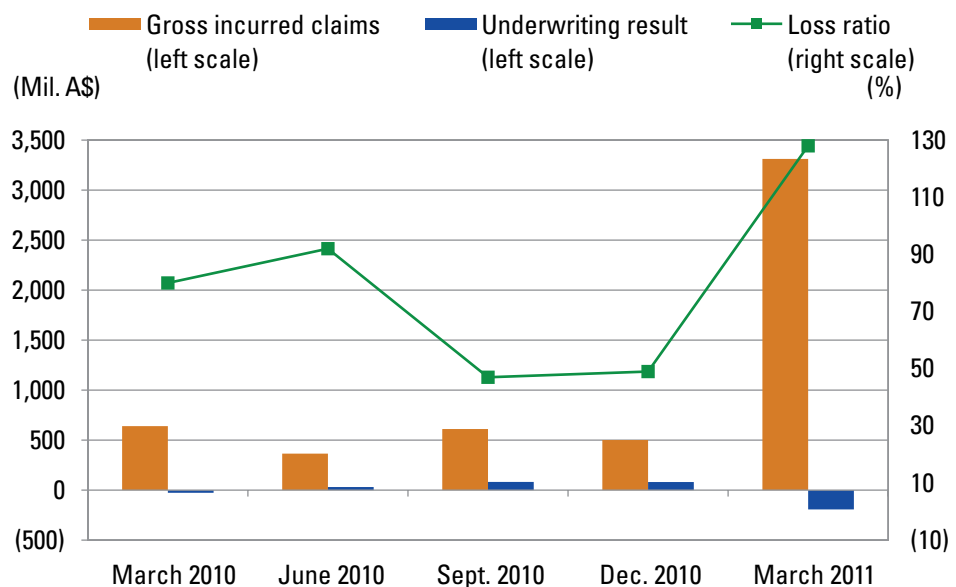
dominate the Australian reinsurance sector. They collected around 80% of reinsurance premium revenue in the 12 months to June 30, 2010. In the first quarter of 2011, reinsurers operating in Australia made an underwriting loss of A\$193 million (US\$175 million). Group retrocession mitigated the sector's net loss ratio, which stood at 128%, from a gross loss ratio of 616% for the first quarter of 2011. The sector's combined ratio was 152% and strong investment returns actually contributed to a net profit after tax of A\$194 million. Capitalization of reinsurers operating in Australia remained sound; the aggregate solvency coverage ratio stood at 1.85x on March 31, 2011, compared with 1.82x on Dec. 31, 2010.

### Capital strength and reinsurance protect Australia's primary sector

Australia's rated non-life primary insurance sector is well placed to meet the cost of the natural disasters that battered the nation between December 2010 and February 2011, in our view. While the spate of recent domestic natural disasters is bound to pull earnings down in the short term, we expect the sector's capital strength and reinsurance protection to limit negative rating pressure, although the cost of that protection will rise.

Australia and New Zealand have had their worst catastrophe season for 40 years in the past nine months. Data for December 2010 to February 2011 released by the Insurance Council of Australia indicate gross Australian-based claims of around A\$4.08

**Chart 1: Reinsurers' Quarterly Operating Performance For Australia**



Source: Australian Prudential Regulatory Authority.

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billion (180,410 individual claims) have been received. Around 90% of these relate to the State of Queensland floods and cyclone. We expect claim costs to continue to rise.

#### *New Zealand earthquakes remain uncosted*

The significant number of earthquakes and aftershocks in New Zealand over the past nine months has created uncertainty in the country's insurance markets. The ultimate claims cost of these ongoing events remains uncertain, as does the effect claims and higher reinsurance pricing will have on primary insurers' earnings. Despite the uncertainty, we do not expect any downward rating action on insurers. We believe capital is adequately protected by reinsurance and there will continue to be sufficient reinsurance capacity available for our rated insurers. While reinsurance price rises are likely, we expect them to be largely passed on to policyholders.

New Zealand's Canterbury region was hit by two major earthquakes in the space of six months: the first on Sept. 4, 2010, and the second on Feb. 22, 2011. AIR Worldwide estimates that the first event could result in claims costs of between US\$2.0 billion and US\$4.5 billion. The second event was focused on the country's second largest city, Christchurch, and could cost up to US\$8.0 billion in claims. The Sept. 4 earthquake was the first of 12 earthquakes classified for insurance purposes in New Zealand. The most recent aftershocks were on June 13, 2011. At the time of writing, it was too early to determine likely claims costs, but it seemed likely to be lower than the Sept. 4 and Feb. 22 events. The overwhelming majority of the costs will be borne by global reinsurers and the government-owned Earthquake Commission (AAA/Stable/-).

The most notable insurer facing difficulty as a result of the recent earthquakes is New Zealand's second-largest residential insurer, AMI Insurance (not rated). Although the company eventually gained support from international reinsurers to increase its reinsurance capacity, it approached the government on March 9, 2011, concerned that its reserves and reinsurance might not be adequate to cover earthquake claims. Based on public information, the company had NZ\$600 million per catastrophe event reinsurance protection, which was adequate to cover the impact of the September 2010 earthquake but not sufficient to cover the February 2011 event. As a result, the company will have to use some of its NZ\$350 million reserves. The government provided a support package that will only be activated if the company exhausts its own reserves. Under the package, the government would invest up to NZ\$500 million in AMI and have the right to take ownership and control of the company.

Prices for property catastrophe reinsurance cover in Australia and New Zealand rose sharply at the July 1 renewal and could increase further at the Jan. 1, 2012 renewal, partly because of the catastrophe events across the region. Reinsurance pricing in Australia

and New Zealand was historically favorable to reinsurers compared with other regions globally. Rates have benefited from underwriting discipline among local primary insurers and the previously benign climatic conditions and seismic activity. Indeed, until 2010, some primary insurers had not claimed on their reinsurance programs for many years, which was reflected in reduced rates.

For Australia, we expect to see property catastrophe premiums increase by 15% or more. In New Zealand, rates for New Zealand-only programs increased by around 100%, and have more than tripled in some cases. The increase was nearer 50% for joint Australian/New Zealand programs. However, we see no evidence that noncatastrophe cover premiums are hardening in the wake of these increases in the cost of property catastrophe cover. We expect rated primary insurers to be able to pass on reinsurance price increases to policyholders in full because other major insurers have already put through price increases of about 20% for property-related cover and seen no material loss of customers.

Standard & Poor's anticipates that rated primary insurers in Australasia will retain their access to adequate levels of property catastrophe reinsurance. However, reinsurers are likely to push primary insurers to carry higher retention levels; these have been low relative to other regions.

We have not observed any significant withdrawal of global reinsurers from either the Australian or New Zealand markets, despite the catastrophe losses. We anticipate that global reinsurers will continue to be attracted to the Pacific region. It adds diversity to their books of business and it operates a more-disciplined marketplace than some other parts of Asia. Indeed, given the prospects for improved pricing, Australasia's attractiveness to global reinsurers may increase. That said, smaller or more concentrated insurers that only serve New Zealand, especially those with large Canterbury exposures, could find it difficult to obtain affordably priced reinsurance cover in the current environment.

#### **Asia Could See Prices Hardening**

Japan was the only area in Asia to suffer significant catastrophe claims during the past 12 months. Reinsurance markets remained competitive, especially in lines that are not prone to catastrophes. Fast-growing and competitive primary markets tend to counteract the effect of tightening reinsurance capacity globally. However, the spillover effect of price increases from property catastrophe lines has already affected the region; most catastrophe-prone markets reported increased reinsurance prices in this business line.

It is not clear how much reinsurance capacity will be available at the January 2012 renewal, which we view as a critical point when the market will determine pricing direction. Reinsurers expect that a shortage of capacity in the retrocession market will cause the

market to tighten, but pricing may also be influenced by the availability of reinsurance capacity and the bargaining power of insurers.

Given the high catastrophe exposure in the Philippines, India, and Indonesia, it seems surprising that prices should remain competitive. However, in our view, these markets are likely to underinsure for catastrophe risks, especially those markets such as China and India that are growing most rapidly. We have seen that insurers in these markets have managed the effect of the recent catastrophe claims. However, if they continue to assess catastrophe risks inadequately, using insufficient market data and less-stringent risks assessments, we could see future catastrophes having a bigger impact on insurers' financial profiles.

Insurers in many Asian markets use proportional treaties that tie the reinsurer to the performance of the primary market and its pricing adequacy. However, in the past five years, we have observed a trend toward excess-of-loss coverage. This has increased insurers' premium retention.

Standard & Poor's believes that reinsurance pricing in markets like China and India will remain competitive, provided retention levels remain relatively high. However, reinsurers and insurers' performance could face high volatility in markets such as China, where catastrophe risk exposure may not be adequately priced, given the rapid urbanization and build up of assets. In India, it is generally recognized that pricing is inadequate, given the large underwriting losses of recent years.

In reinsurance markets such as Taiwan, the Philippines, Hong Kong, and Singapore, the primary markets are catastrophe-prone or have long-term liabilities risk. As a result, reinsurance is used more extensively. Also, regulators have introduced risk-based capital measures or increased paid-up capital requirements in several markets (e.g., Thailand and Malaysia). This has increased the need for reinsurance to prevent a capital shortfall under these regulatory regimes.

In Taiwan, non-life reinsurance premium growth in 2010 remained stagnant. We observed that local Taiwan non-life insurers continued to increase their retention because of satisfactory underwriting results and a change in reinsurance protection to excess-of-loss programs in recent years. The result has been pressure to offer consecutive reductions on premium rates due to fierce industry competition. Given that retrocession and reinsurance capacity in the international reinsurance markets could shrink, we could see the soft pricing in Taiwan's non-life reinsurance market harden, especially for catastrophe risks.

Korean Reinsurance Co. (Korean Re), as the only domestic reinsurance player in Korea, dominates Korea's reinsurance market. We expect it to require only limited price increases this year, because it had limited exposure to the recent catastrophes. Given its 65% share of the market, the market as a whole is likely to harden slightly in 2011 as a result. We expect

competition to remain limited. As long as claims in 2011 prove to be relatively benign, profitability is likely to be adequate. We anticipate that Korean Re's combined ratio will remain below 100%.

### Reinsurers In The Worst-Hit Areas Could See Prices Harden, But Elsewhere There Is Resistance To Rate Rises

There are still a number of markets in Asia-Pacific where recent events have had a limited impact on pricing. The reasons are varied: some markets have rapid momentum for growth (e.g., China and India), some have good underwriting results (e.g., Taiwan and Hong Kong), and some are not prone to catastrophes (e.g., Thailand, Singapore, and Malaysia). However, it is still unclear whether reinsurers will be able to raise prices in these markets as the amount of available reinsurance capacity is uncertain.

The unprecedented number of catastrophes in Asia-Pacific recently has caused much damage to reinsurers' underwriting results. We therefore anticipate further price increases in property catastrophe lines and those markets affected by catastrophe losses in recent years (e.g., Australia, New Zealand, and Japan). We expect the increase in reinsurance prices to assist in supporting underlying profitability of reinsurers. ■

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