

# **INTERNATIONAL ASSOCIATION OF INSURANCE SUPERVISORS**



## **GLOBAL REINSURANCE MARKET REPORT 2009**

**23 DECEMBER 2009**

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### GRMR Highlights

- Reinsurers, faced with a doubly challenging years from a) a historically depressed investment environment and b) a turbulent storm season, returned an overall positive result in 2008, indicating industry strength.
- The third most costly year in insured losses materialised over 2008 demonstrating again the importance of reinsurers to provide cover for extensive risks.
- The adverse global environment caused impairment to capital positions; nevertheless the 21% reduction was managed from strong early year positions and did not threaten business viability.

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### GRMR Highlights

- Gross premiums assumed more than doubled in Latin America and Africa, Near and Middle East as the global market continued to spread geographically, while still predominantly centred on North America and Europe.
- The reinsurance industry remained net protection sellers of collateralised debt obligations and credit default swaps, and more general exposures to other financial entities remained relatively small compared to that between industry players.
- Up to November 2009, systemic default risk in the reinsurance business has sharply declined, eased by improved risk profiles and less codependence between industry players.

### GRMR Spotlight Development: Mutual Recognition within the European Union

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**Peter Braumüller,**  
Chair, IAIS Executive Committee



Peter Braumüller

I am very pleased to introduce the 6<sup>th</sup> edition of the Global Reinsurance Market Report (GRMR). The significance of the GRMR is particularly clear in these years of financial uncertainty. Over the past years, the Reinsurance Transparency Group (RTG) of the IAIS, together with other international bodies and leading market participants, has been actively monitoring the global reinsurance market, tracking trends, identifying inter-linkages, and importantly, detecting, establishing and communicating the emergence of new risks. In short, the RTG has been exercising sound macroprudential surveillance of the global reinsurance market, reflecting key IAIS concern with financial stability, systemic risk and transparency.

This 6<sup>th</sup> edition of the GRMR builds on the unique data provided by 51 leading global reinsurers, which have been actively engaged with the IAIS in sharing knowledge on reinsurance in order to help authorities better understand, regulate and supervise this key segment of the financial sector.

The GRMR shows that, despite the ongoing financial turmoil, the global reinsurance market has demonstrated robustness and resilience, contributing to both the stability of the global insurance markets as well as ultimately the security of individual insurance customers. Although reinsurance does not appear to have played a role in the current crisis, it has been affected by it, due to the many inter-linkages at play among financial market participants. Some of these are discussed in this GRMR.

Finally, as the process of reform of the international financial architecture continues to gather pace, we hope that this IAIS report and its unique range of supporting data will be further developed to even more effectively contribute to promoting financial stability.

### **Al Gross**

Chair, IAIS Technical committee



Al Gross

The reinsurance market is a genuinely global one, with global regulatory implications. As the current crisis has shown, it is not enough for supervisors to gain comfort at a firm-level only. Macro-level risks constitute a different kind of risk and as such, they necessitate different regulatory and supervisory tools. The Global Reinsurance Market Report (GRMR) aims to contribute to such a tool kit.

This 6<sup>th</sup> edition of the GRMR is a valuable source of knowledge for insurance and reinsurance supervisors, providing them with data regarding the resilience of global reinsurance. In particular, I am pleased to see that the GRMR continues to cover issues beyond the confines of reinsurance supervision, like credit risk transfer activity between reinsurers and banks. This shows the increasing focus of the international insurance supervisory community on cross-border and cross-sector risks which could affect global financial stability.

**Jeremy Cox,**  
Chair, IAIS Reinsurance Transparency Subgroup



Jeremy Cox

I am delighted to give you a warm welcome to the 2009 Global Reinsurance Market Report (GRMR). This is the 6<sup>th</sup> edition of the report, which I take it to be a clear sign of commitment to continuing providing reinsurance market transparency, something that the RTG, in particular, and the IAIS general are specially keen on.

This year, for the first time since the creation of the RTG in 2003, the GRMR comes with a companion, the Midyear Edition of GRMR. In fact, in August 2009, we published the report *Developments in (Re)Insurance Securitisation*. The Midyear edition, which this time focused on securitization, is helping us to be in direct contact with the public more frequently, in order to get our messages across more timely and as close as we can to the unfolding of events in the reinsurance market.

As it has been the case with the previous five editions of the GRMR, we conduct the analysis of data drawing largely from a unique set of figures coming from a survey for the year 2008 conducted by the RTG. The results of this analysis are assessed to evaluate reinsurance market stability as at year-end 2008.

As discussed in Chapter I, reinsurers appear to have so far weathered the storm robustly. For example, reinsurers suffered comparatively less damage on the asset side of their balance sheets, when compared to other financial sectors. And importantly, different from 2007, the year of 2008 proved to be a particularly active one in relation to occurrences of catastrophes. In fact, looking at the data gathered by RTG since 2003, 2008 showed worse level of losses than 2001, and came only second to 2005. In short, despite the combination of sustained cat losses and depressed asset values, the global reinsurance market did not add to the systemic risks that manifested during the unique year of 2008.

In Chapter II we look at the critical issue of inter-linkages between the reinsurance sector and other financial sectors. Particular attention is dedicated to the transfer of credit risk from the banking sector to the reinsurance sector. Importantly, and in line with the generally sound approach to risk management identified in our pool of respondents, cross-sectoral risk transfer appeared satisfactorily diversified within the overall risk taking by re-insurers.

I would like to close my opening remarks by commending the drafting team within RTG, all other contributing international organizations, as well as the fifty plus reinsurance companies taking part in this study. The GRMR is a genuinely global effort and we are very proud of it.



Happy reading and don't miss the highlights!

# CHAPTER I



## ASSESSING REINSURANCE MARKET STABILITY

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### Introduction

The Global Reinsurance Market Report (GRMR) constitutes the main output of the Reinsurance Transparency Subgroup of the IAIS (RTG). This 6th Edition of the GRMR adds to the work that the RTG has been developing over the years in relation to identification and surveillance of risks at a macro level, that is, those risks that manifest themselves in aggregate and that often escape the pincers of firm level supervision.

Like in the previous five editions of the GRMR, the analysis developed here draws heavily on data from a unique survey of reinsurers for the year 2008 conducted by the RTG. The results of this analysis are assessed to evaluate reinsurance market stability as at year-end 2008, and to better understand the position of the reinsurance industry within the current, challenging overall market environment.

In our previous edition of the GRMR we argued that the reinsurance sector showed resilience with respect to the detrimental effects set in motion by the financial crisis. In particular, we concluded that reinsurers had featured comparatively better than other financial sectors. At the root of this was a variety of critical factors, amongst which, the relative conservativeness of reinsurers' investment strategies and the continued focus of comprehensive risk management strategies, policies and practices with respect to conducting reinsurance business. Reinsurers, we discussed in last year's edition, suffered comparatively less asset deterioration than other financial sectors. In addition, they enjoyed the benefits of a relatively calm catastrophe year. We concluded that although the turmoil generated by the crisis did affect reinsurers, the impact was limited and of no systemic consequences.

Overall, the resilience manifested by reinsurance sector in 2007 did verify in 2008 as well. Importantly, reinsurers appear to have so far robustly weathered the financial crisis. Again, reinsurers suffered comparatively less damage on the asset side of their balance sheets, when compared to other financial sectors. This is a key element, as it has to be understood in the context of uniquely challenging investment environment, as compellingly shown in the data on stock performance, spreads and interest rates provided in Graphs I-1, I-2 and I-3 below.

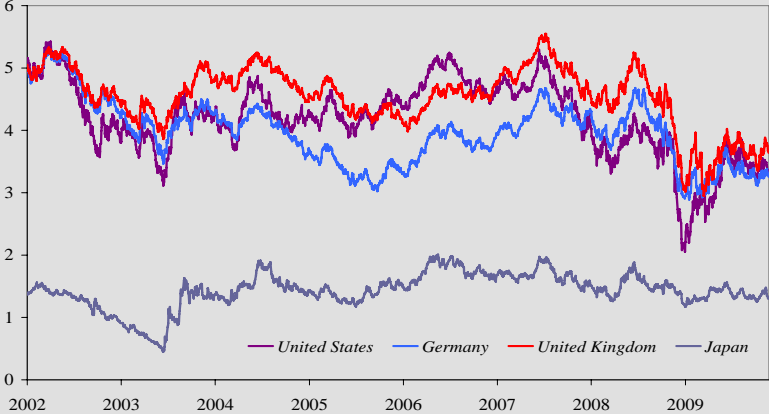
Importantly, different from 2007, the year of 2008 proved to be a particularly active one in relation to the occurrences of catastrophes. In fact, looking at the data gathered by RTG since 2003, 2008 showed worse level of losses than 2001, and came only second to 2005. In short, despite the combination of sustained cat losses and depressed asset values, the global reinsurance market did not add to the systemic risks that manifested during 2008.

As it was the case in 2007, during 2008 reinsurers maintained their focus on comprehensive risk management in addition to dedicated attention to impact minimization in relation to asset-side deteriorations. As discussed in detail in this report, although the crisis and the active cat year affected the reinsurance sector, especially in relation to capital levels, we found no evidence of this negative impact translating into systemic issues of concern. With respect to underwriting risks, reinsurers continued to show a dedicated focus on diversified risk taking, drawing on the fundamentals of the reinsurance business in order to navigate a particularly turbulent year for the economy in general, and the financial services in particular.

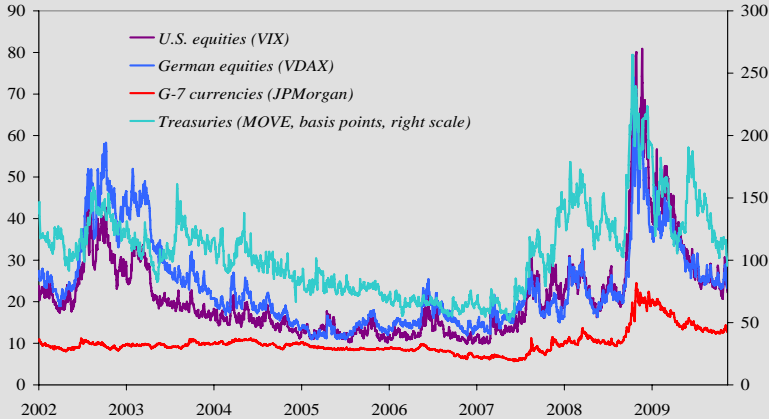
As a consequence, global reinsurers succeeded in achieving a comparatively smaller diminution of shareholders value when compared to other financial sectors. Moreover, there are already indications that the loss in shareholder value sustained during 2008 was reversed during 2009.

Indicators

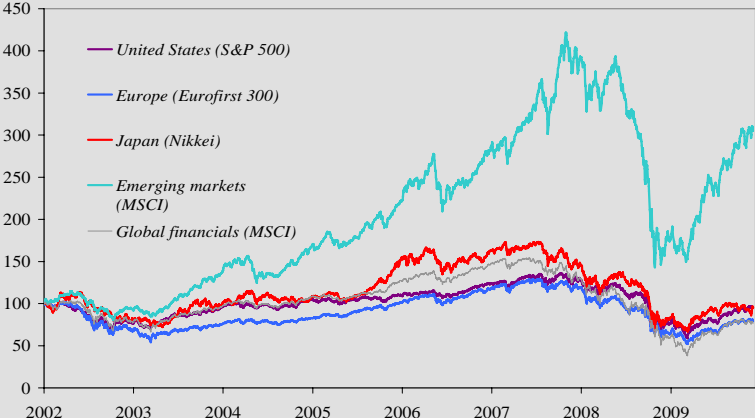
Graph I-1: Long-term Interest Rate Indices  
Source: Bloomberg



Graph I-2: Volatility Indices  
Source: Bloomberg



Graph I-3: Major Stock Indices  
Source: Bloomberg



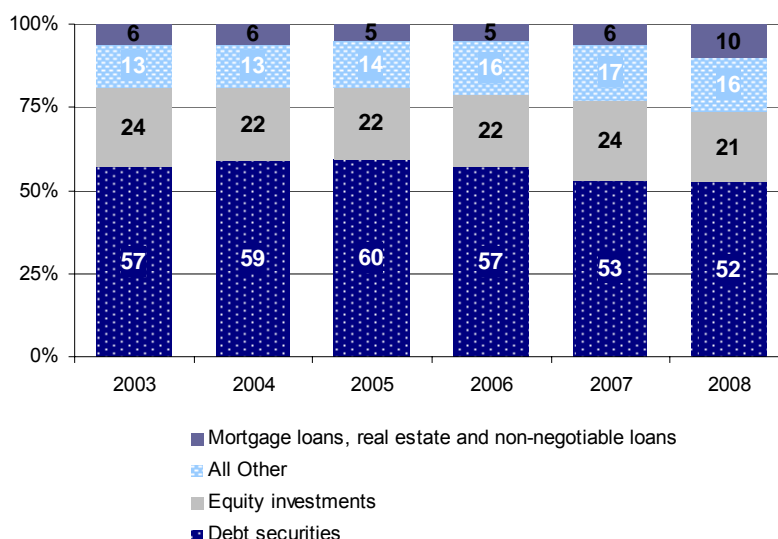
High quality investments help stabilize the asset base of Reinsurers



A common evidentiary source to the claim that reinsures are well situated to withstand financial market turbulence, and in particular capital market depreciation, points to conservative investment portfolios that favor highly rated fixed income securities and quality stocks. This orientation minimizes exposure to, for example, credit default swaps and mortgage-backed securities. While the affects of losses from the latter has affected the reinsurance sector, the GRMR survey reinforces the notion that balance sheet positions of reinsurers do offer some protection from market uncertainty. However, in 2008 investment losses amounted to over 10% of end 2007 shareholder funds. In that sense the reinsurers' asset distribution did not offer that much protection from darkening markets.

Reinsurers participating in the GRMR survey reported total invested assets of US\$ 927 billion in 2008 compared to US\$ 787 billion in 2007. The allocation of assets shows stability in debt securities, notwithstanding a minimal decline for the third straight year, with a small but observable shift from equities to other asset classes, highlighted below.

**Graph I-4: Asset Composition**  
Source: IAIS



*Investment in debt securities ...*

Reinsures holdings of debt securities climbed 17% to US\$ 485 billion in 2008, fractionally off the pace of the overall asset growth rate. Bonds and other securities made up over half of the aggregated portfolio; while this traditional position illustrates the industry's stable asset foundation, it is vulnerable to widening credit spreads. Q4 2008 saw spreads on investment grade debt approach 100% higher than the five year moving average, impairing liquidity supply to banks and corporate borrowers.

*...equities ...*

Shares and other equity investments were at their lowest level – in relative terms – in the six year period of the survey. Asset allocation in equities stood at 21%, a 3 point drop from 2007. The US\$ 199 billion total equity investment was 6% more – in absolute terms – than the prior year's amount, but was the slowest growing asset category. 65% of equity exposures was to "insurers", plus 10% to "financial institutions". Meanwhile, notional exposures in derivatives for hedging was up 60%, while non-hedging derivatives decreased only 15%.

*... mortgage loans and real estate ...*

Investment in mortgage loans and real estate and other non-negotiable loans reached its highest level – in asset share (10%) and dollar amount (US\$ 94 billion) – in the time of the survey. Investment in the asset grouping grew 116% over 2007.

*... all other asset classes*

All other asset classes grew 6% to US\$ 149 billion, comprising 16% of the asset base. While “all other assets” includes a wide range of instruments including derivatives and loans and other alternative investments, cash and cash equivalents appears to have been the main driver of growth within the asset category. Industry reports indicate an increase in allocations of cash over the long term, and likely pursued by reinsurers along with other short-term investments to generate greater flexibility in the face of the maturing financial crisis during 2008.

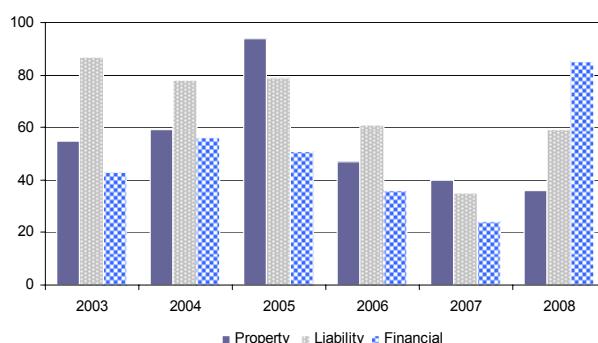
**Profitable results conclude turbulent year**

The financial performance of reinsurers should be considered doubly: first from a stand-alone business perspective and second from within the matrix of forces signified by the global economic downturn, that is, from (1) an underwriting function and (2) an exposure to market instability.

*Business performance*

From an underwriting perspective 2008 was a challenging, yet manageable year: Atlantic<sup>1</sup> hurricane storms Ike and Gustav were major insurance loss events - US\$ 24 billion combined. Comparatively, this loss was one-quarter of the 2005 Atlantic hurricane season when storms Katrina, Wilma and Rita combined to incur record catastrophic losses on the industry. The GRMR survey returned a 75% loss ratio on the year, the second highest (2005: 84%) in the 6-year survey and 6 points above the 69% average. However, the loss ratio for property lines alone (note: ratios by lines of business are drawn from reinsurance business assumed only) was at a survey-low 36%. Financial and liability lines are discussed below.

**Graph I-5: Loss Ratios by Line of Business**  
Source: IAIS



The overall loss ratio result – 19 points above 2007 and 17 above 2006 – though serious, may appear disproportionately alarming in light of the extraordinarily low levels of loss experienced in

<sup>1</sup> Additional information on the hurricane seasons 2008 and 2009 is to be found in the respective text below.

2006 and 2007. Looking forward in respect to property business, the relationship between the already long term trend of escalating natural catastrophe episodes and the incremental growth in insurance penetration will be of increasing importance to reinsurers' core business.

Moving to other books of business, the loss ratio for financial lines was 85% as the fallout of the global downturn was not isolated to investment portfolios. Though a significantly high ratio, the net claims incurred for financial lines represented a relatively small one-tenth of the non-life total. This was balanced by a low loss ratio of 59% for liability lines, 7 points below the 6-year average.

At the operational level, reinsurers were able to effectively reduce business costs. Net operating expenses fell 30% or US\$ 15 billion from 2007, nearly all from non-life business, driving the expense ratio to a new low of 24%. This kept the combined ratio in double digits at 99%, below 2004 and 2005 and registered precisely at the 6-year survey average. However, overall business performance benefited in some cases from releases of reserves accumulated in the previous years.

**Graph I-6: Combined Ratio**

Source: IAIS



*Core business strategy overcomes poor investment performance*



**GRMR HIGHLIGHT**

The GRMR has well documented the familiar link between investment income and profitability to show the former at about one-quarter of net premiums earned. After remaining stable between 2006 and 2007, investment income dropped 20% to US\$ 38 billion in 2008 and dipped to 19% of net premiums earned. However, a strict correlation to profitability did not materialize. Rather, reinsurers reported US\$ 81 billion in overall profit that was nearly one-third more than in 2007. While industry's investment profile mitigated market impacts, the core (underwriting) business performance of reinsurers and notably the flexibility to facilitate leaner operational models buttressed profit.

**A Core Book of Business Analysis: Natural Catastrophes in 2008 and 2009**

We now turn to a closer analysis of a primary business concern of the reinsurance industry: insurance cover for natural disaster. Here we look at the overall storm environment spanning 2008 and 2009, with particular attention to heavily reinsured catastrophes, their impacts on the industry and finally, at the micro level, we take a careful forward look at the prospect of insurance cover for developing markets.

Weather catastrophes can be divided into meteorological, hydrological, and climatological events.

The category of meteorological events includes tropical cyclones (hurricanes, typhoons, cyclones), extratropical cyclones (winter storms) and local storms (severe storms, thunderstorms, hailstorms, snowstorms and tornadoes). Hydrological events include floods (general floods, flash floods, storm surges/coastal floods) and wet mass movements (landslides, avalanches). Climatological events include extreme temperatures (heat waves, cold waves, extreme winter conditions), droughts, and wildfires (forest fires, bush/brush fires, scrub/grassland fires, urban fires). For weather catastrophes, 2008 was the fifth most expensive year on record. They caused losses in the amount of US\$113bn for national economies and US\$41bn for the insurance industry.

### *Claims Development in 2008*



#### **GRMR HIGHLIGHT**

Tropical cyclones and the earthquake in Sichuan (China) made 2008 one of the most devastating years on record. Overall losses from 750 natural catastrophes came to US\$ 200bn (2007: US\$ 82bn). Insured losses totalled US\$ 45bn (2007: US\$ 30bn). On the basis of figures adjusted for inflation, 2008 was the third most expensive year on record for overall and insured losses. The overall losses were only exceeded in the very strong hurricane year 2005 and in 1995, the year of the Kobe earthquake in Japan. In Europe, the costliest natural catastrophe was Emma, a winter storm that crossed large parts of Europe at the beginning of March with wind speeds of over 150 km/h, causing insured losses of US\$ 1.5bn and overall losses of US\$ 2bn. In 2008 four events were defined as great natural catastrophes: the winter damage in China in January and February, the earthquake in Sichuan (China) on 12 May, Cyclone Nargis, which hit Myanmar in May and Hurricane Ike, which caused havoc in the Caribbean and the United States.

### *Event development through 2009*

The natural catastrophe figures for 2009 (up to October) were marked by high losses due to severe weather in areas with a high insurance density. Insured losses were US\$ 17.5bn, somewhat above the average for the same period in the past ten years. Overall losses from January – October totaled to US\$ 37bn. The loss figures include a substantial number of weather-related natural catastrophes in Europe and the USA, which explains the relatively high ratio of insured to economic losses. Up to October more than 180 events like severe weather, tornadoes, hail storms and a number of natural catastrophes – floods, wild fire and winter damage – hit the United States and caused insured losses of estimated US\$ 10bn. The percentage distribution of the number of global natural catastrophes in 2009 shows that North America and Asia were mainly affected.

**Graph I-7: Insured natural catastrophes losses as a percentage of total non-life premiums average 1970 - 2008**

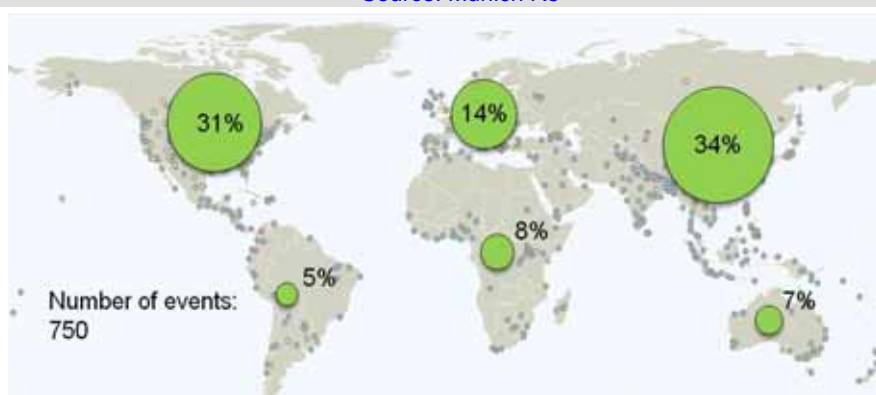
Source: Swiss Re<sup>2</sup>



The above graph is based on data for the period 1970 - 2008. To calculate 2008 ratios when premium data were not available, insured natural catastrophe losses are expressed as a percentage of the previous year's total direct non life premiums. This results in an upward bias to absolute ratios, but does not affect the relative numbers across countries. For catastrophes which hit several countries, the same average loss-to-premium ratio was applied to each country.

**Graph I-8: Percentage Distribution of Worldwide Natural Catastrophes through September 2009**

Source: Munich Re<sup>3</sup>



Key to the 750 different shaded small dots:

- Geophysical events (earthquake, tsunami, volcanic activity)
- Meteorological events (storm)
- Hydrological events (flood, mass movement)
- Climatological events (temperature extremes, drought, wildfire)

<sup>2</sup> Compare: Swiss Re, sigma, No 2 / 2009, page 9, figure 4

And also: <http://www.swissre.com/pws/research%20publications/research%20and%20publications.html>

<sup>3</sup> For more information compare also: Munich Re, Topics Geo

And also: [http://www.munichre.com/en/ts/geo\\_risks/natcatservice/annual\\_statistics/default.aspx](http://www.munichre.com/en/ts/geo_risks/natcatservice/annual_statistics/default.aspx)

*Hurricane Seasons 2008 and 2009*

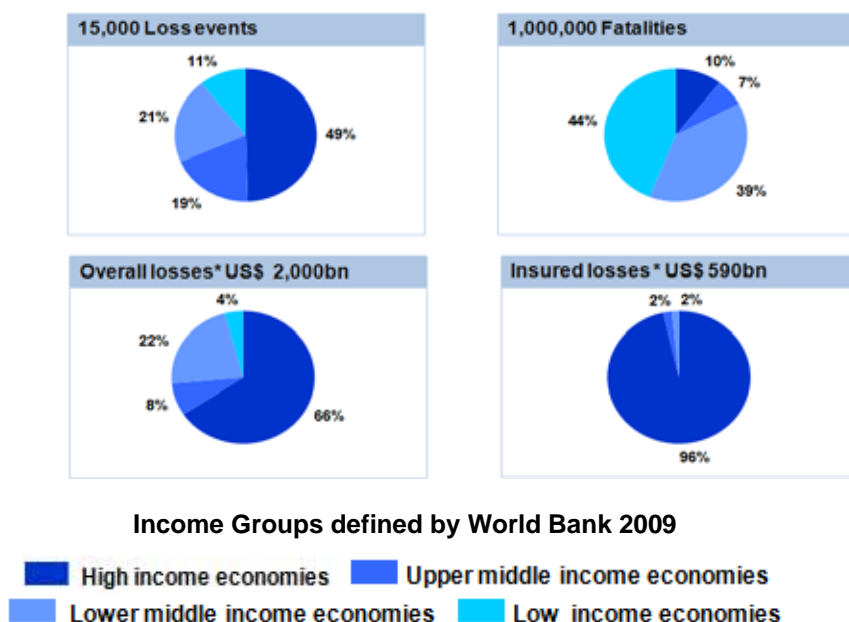
The 2008 hurricane season, with 16 tropical storms including eight hurricanes, was well above the 1950-2007 long-term average. This increased activity was also reflected in the number of tropical storms and hurricanes that made landfall on the US coast. For the first time on record, six consecutive tropical storms (Dolly, Edouard, Fay, Gustav, Hanna and Ike) made landfall. Three of them were Category 3 hurricanes (Dolly, Gustav and Ike), the long-term average being only two. Cuba was hit for the first time in one season by three major hurricanes (Category 3-5 on the Saffir-Simpson Scale). There were five major hurricanes (Category 3 and above) in 2008, again well above the long-term average (2.7). Overall losses in the 2008 season exceeded US\$ 50bn, insured losses totalling US\$ 23bn. This makes 2008 one of the most expensive hurricane years ever for the insurance industry.

Up to the end of October 2009 the hurricane season in the Atlantic Ocean was below the average of 10.3 tropical storms and 6.2 Atlantic hurricanes per season (long term average from 1950-2007): 9 named tropical storms developed in the Atlantic Ocean, thereof 3 with hurricane force (Cat 1-5). of the hurricanes were major storms (Cat 3-5).

*Long-term catastrophe frequency trending up, disproportionately affects developing areas*

The analyses of natural catastrophes shows that the number – especially the number of weather events – has been increasing constantly since the 1980s. A breakdown of weather events by income groups shows that 49% of the events happened in the high income economies. 83% of all fatalities came from lower middle and low income groups. More than 65% of the overall losses and 95% of the insured losses affected the high income economies. For the people in developing and emerging countries, natural catastrophes often result the total loss lead to them losing their basis of existence and their perspectives for the future. Appropriate insurance protection can be of assistance.

**Graph I-9: Percentage Distribution of Global Weather Events 1980-2008 for Income Groups**  
Source: World Bank, Munich Re



### *Microinsurance and increasing insurance penetration*

The worldwide integration of economies and financial markets is increasing, and a sound and vibrant insurance and reinsurance industry is needed to sustain global economic growth. There is a growing consensus in emerging markets that increased participation of an extended range of individuals, households, and firms in the process of economic empowerment is important to sustain and accelerate the growth momentum. The G20 Pittsburgh declaration has reaffirmed its commitment to meet the Millennium Development Goals and leaders have pledged to cooperate to improve access to food, fuel, and finance for the poor. What is also worth noting is the thrust given in the communiqué for promoting successful regulatory and policy approaches and elaborating standards on financial access, financial literacy, and consumer protection. The development of microinsurance is a central element not only for the promotion of inclusive financial systems but also for equitable mitigation and management of risks both *ex ante* and *ex post*.

Secure and high quality savings and accessible and affordable insurance services and pension schemes are financial services demanded by all. It also has an important role to play in helping communities in emerging markets to adapt to climate change and encouraging investment in sustainable projects by providing a tool to reduce their vulnerability to external shocks, and natural disasters and catastrophes. With reduced transactions costs, reduced barriers to entry and massive expansion in terms of geographical outreach, access to insurance is bound to increase tremendously. The challenge before the IAIS is to improve the knowledge and understanding of the insurance supervisors for taking advantage of the opportunities in the form of innovative products and distribution channels as well as through special risk transfer projects, without exposing customers to unnecessary risks and costs.

### *Innovation in practice: an Indonesian exemplar*

For example an Indonesian insurance company, together with a reinsurance company and some government agencies are launching a pilot product offering low income households in the Indonesian capital Jakarta the opportunity to insure against the direct economic losses and social risks caused by severe flooding. Based on a feasibility study on catastrophic risks in Indonesia, a pilot region of 23 sub-districts in Jakarta was selected for testing an innovative trigger-based microinsurance product against flood risks. It is the first microinsurance flood product worldwide. Flood and inundation are a recurring threat to the livelihood of many people in Jakarta. The direct financial and social impact of flooding, such as property damage, loss of income, higher medical expenses and rising food prices, constitutes a heavy burden to low income households. The idea behind the joint project is to offer affordable, easily understandable and non-bureaucratic insurance cover specially adapted to this segment of the population. Instead of a lengthy policy document, the insured will receive a simple protection card, similar in size to a telephone card. One card costs 50,000 Indonesian rupiahs and guarantees a one-off payment of IDR 250,000 if the waters rise to or above 950cm (Alert 1) at the Manggarai Water Gauge ate in Jakarta.

### **Capital management regimes trended conservative as 2008 matured**



**GRMR  
HIGHLIGHT**

As discussed above, 2008 presented an extraordinary circumstance for the reinsurance industry: unprecedented investment losses were anticipated following capital market dislocations in Q4 2007, and the third most costly catastrophe season played out over the year. Capital deployment was already a priority at the beginning of the year with dividends and share repurchases widely on offer. Decelerating the active capital management regimes of the recent past, strategies turned to safeguard existing positions as loss occurrences began to mount throughout the year.

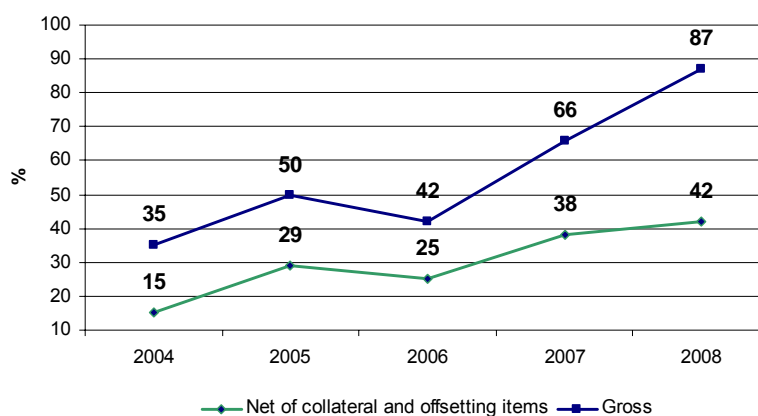
Well capitalized positions framed the ability of the industry to withstand negative impacts on multiple fronts. In 2007, the GRMR survey recorded a total base of US\$ 330 billion of which US\$

122 billion was required by regulators (US\$ 192 billion surplus). By the close of 2008, capital levels were reduced 21% to US\$ 248 billion of which 45% (US\$ 112 billion) was a regulatory requirement.

As a result the reinsurance industry has been resilient amid the financial crisis - in almost all cases even without government assistance.

**Graph I-10: Gearing Ratios**

Source: IAIS



Gearing ratios for the year reflected the overall capital impairment. Gearing ratios measure reinsurers' dependency on reinsurance (for direct business) and retrocession (for assumed reinsurance business) by taking recoverables compared to total available capital. 2008 saw a gross gearing ratio of 87% and a gearing ratio net of collateral and offsetting items of 42% - each represented 6-year highs. This movement was directly related to the reduced capital position as recoverables from reinsurance and retrocession – in both gross and net terms – remained relatively level from 2007.

#### The global reinsurance market contracted in 2008

Turning from financial performance, we now focus on the business size and composition of the reinsurance industry – in what areas of coverage and by what amount did reinsurers concentrate their portfolios?

The global reinsurance market contracted by one-fifth in 2008, to under USD 160bn in gross premiums written. Life reinsurance sharply reversed its rapid growth of previous years; life reinsurance retrocession more than doubled. Non-life reinsurance fell off markedly.

Life reinsurance remained at one-third of the global market in gross premium terms, although it fell to one-fourth in net terms. In gross terms, North America's share in the global market fell well

<sup>4</sup> 51 major reinsurers from 9 developed countries; selection criteria and list in Appendix II. Gross reinsurance premiums written, retrocessions to participating and other entities, net reinsurance premiums assumed; entity-specific (non-consolidated), nominal as of end 2008, USD million at year-end exchange rate. Data source: end-2008 reports by 51 entities, aggregated by domicile jurisdictions and, globally, IAIS Secretariat.

<sup>5</sup> In 2008, global (direct) insurance premiums fell 3.5%, to USD 4 270bn, with life premiums decreasing by 3.5%, non-life 0.8%. World GDP growth slowed down to 2.3%. Source: Swiss Re, Insurance in 2008.

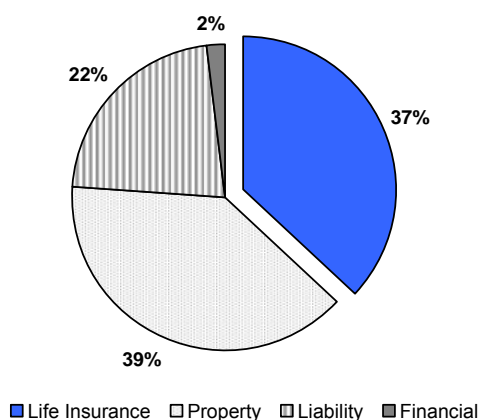


under half; Europe's remained stable at well over a third. Emerging markets' share grew strongly to over one-tenth.

Data by the reinsurers taking part in the GRMR (i.e. all those reinsurers writing in excess of USD 800 million gross unaffiliated reinsurance premium) show that in 2008 reporting reinsurers wrote 19% less gross premium than in 2007 (USD 159 billion in 2008; USD 190bn in 2007) <sup>4</sup>. Premiums in life reinsurance were down 17%, to USD 57 billion. Non-life reinsurance premiums decreased 21%, to USD 102 billion.<sup>5</sup> Property reinsurance fell 12%, liability reinsurance 27%, but financial lines reinsurance remained almost unchanged.

**Graph I-11: Gross Reinsurance Premiums Assumed by Line of Business**

Source: IAIS



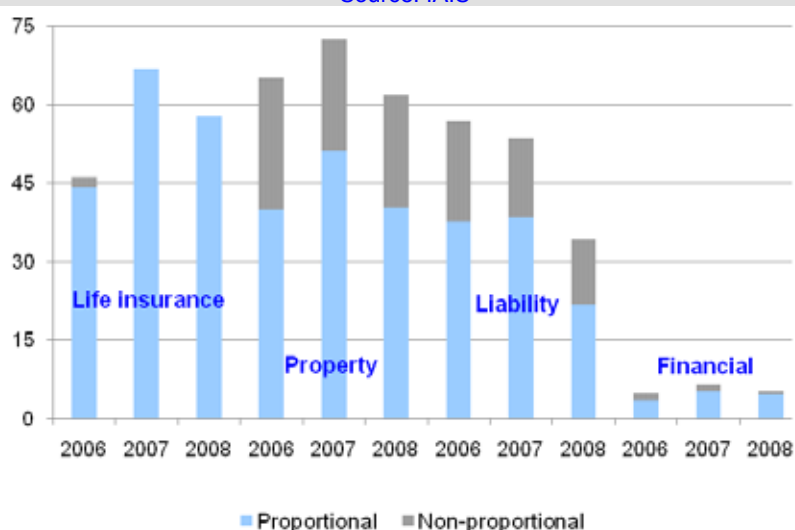
The gross premium decline was accompanied by even steeper falls in net reinsurance premiums and by a marked increase in life reinsurance retrocession to the reporting entities. Net premiums assumed by the reporting entities decreased overall 29% in 2008, to USD 99 billion. Net life reinsurance premiums fell 46%. Non-life reinsurance premiums declined 19%: property reinsurance fell 12%, liability reinsurance 29% and financial lines reinsurance 6%.

Significantly, retrocession to the reporting entities increased 242% in life reinsurance, but merely 10% in non-life reinsurance. Retrocession to other entities grew 37% for life reinsurance but declined 24% for non-life reinsurance.

The class structure of the global reinsurance market remained in 2008, in gross premium terms, about one-third life reinsurance and two-thirds non-life reinsurance. In net premium terms, however, life reinsurance reduced its part from one third in 2007 to one fourth in 2008. Whether or not the 46% decline in net life reinsurance in 2008 durably reversed its expansion of previous years - plus 90% in 2007 - will likely depend on future capital markets, financial innovation and regulatory and tax developments.

**Graph I-12: Reinsurance Premiums Assumed by Class of Business and Contract Type (US\$ millions)**

Source: IAIS



On the net reinsurance premium basis, the reporting entities<sup>6</sup> in 2008 assumed USD 25.4bn of life risk and USD 73.5bn of non-life risk. The 2008 1:3 life to non-life ratio shows a decline from the 1:2 ratio of 2007, reverting towards the 1:4 ratio of 2006.

There was a significant increase in retrocession in 2008. Overall, the reporting entities that year retroceded 38% of gross premiums assumed, compared with 27% in 2007 and 31% in 2006.

A mirror image of the retrocession growth, the retention decline occurred almost entirely in life reinsurance. Risk retention decreased sharply in 2008 in life reinsurance, to 45% (71% in 2007, 56% in 2006), it remained stable in non-life reinsurance, at 72% (74% in 2007 and 2006). In 2008, as in 2007 and 2006, there was significantly less retrocession to the reporting entities than to other entities.

In both gross and net premium terms, in non-life reinsurance the reporting entities assumed significantly more property risk than liability risk in 2008, as to the previous years. For non-life, on the gross reinsurance premium assumed basis, in 2008 the reporting entities assumed under proportional contracts 66% of total risk, vs. 77% in 2007, 64% in 2006. In 2008, 64% of property risk, 64% of liability risk and 90% of financial lines were written on a proportional basis.

#### *The use of premium figures explained*

While risk may be defined as probability of an occurrence times its effect, there is no direct measure of risk in insurance or reinsurance. Indicators - proxies - have to be used to quantify risk.

Prospectively, the most common risk indicators in reinsurance are premium figures, typically further broken down by gross/net premiums, class and line of business, geographical region, and by type of treaty (proportional vs. non-proportional). Premiums may be biased by factors extraneous to the risks assumed (e.g. macroeconomic variables, commissions)

<sup>6</sup> Selection criteria and list in Appendix II.

Ex post facto, claims can serve to assess the risk that had been assumed by reinsurers. While claims may not be an accurate predictor of future losses, they can be useful for profiling – by extrapolation – the risk being assumed. Risk profiles may, however, change very quickly: loss patterns may shift and new risks may emerge, for example in casualty lines. In reinsurance of low frequency/high severity events (e.g. natural catastrophes) claim statistics alone are of little value and need to be supplemented by further expertise e.g. geosciences and actuarial calculations

### **GRMR Spotlight Development: Reinsurance Regulation in the United States**

There have been a number of new federal legislative proposals that were submitted during 2009 with respect to U.S. reinsurance regulation and the reinsurance market. These include the reinsurance regulatory modernization efforts supported by the National Association of Insurance Commissioners (NAIC), as well as various other federal regulatory reform initiatives.

#### **NAIC sponsored efforts**

On September 23, 2009, the NAIC Government Relations Leadership Council adopted the Reinsurance Regulatory Modernization Act of 2009 (RRMA), and agreed to submit the draft legislation to the U.S. Congress for its further action. This proposed federal legislation is based on the Reinsurance Regulatory Modernization Framework Proposal (Framework Proposal), which the NAIC adopted during its Winter 2008 National Meeting. The NAIC is currently seeking sponsorship of the RRMA in Congress.

Under current state law, in order for U.S. ceding companies to receive reinsurance credit within the statutory financial statements, the reinsurance must either be ceded to U.S. licensed reinsurers (authorized) or secured by collateral representing 100% of U.S. liabilities for which the credit is recorded (unauthorized). In 2006, the NAIC Reinsurance Task Force was given a charge to consider the adequacy and appropriateness of the current U.S. collateral requirements regarding unauthorized reinsurers and to consider the design of a revised reinsurance regulatory framework. The 2008 Framework Proposal and the subsequent RRMA were developed in response to this charge.

The proposed federal legislation would create two new classes of reinsurers in the U.S., National Reinsurers (U.S.) and Port of Entry Reinsurers (non-U.S.). In order to transact assumed reinsurance business in the U.S., National Reinsurers would be certified through a single Home State, while Port of Entry reinsurers would be certified through a single Port of Entry State. Reinsurers would continue to have the option of operating under the existing state regulatory approach.

The legislation also provides for the establishment of the Reinsurance Supervision Review Board. The Board would have the power to (1) evaluate states to determine whether they qualify as Home State or Port of Entry Supervisors; (2) evaluate the reinsurance supervisory systems of non-U.S. jurisdictions to determine whether their reinsurers may seek certification as Port of Entry Reinsurers; and (3) develop supervisory recognition agreements and information sharing and regulatory cooperation agreements for use by Port of Entry Supervisors and Qualified Non-U.S. Jurisdictions. The Board is a federal entity with Board directors subject to appointment by the President with the advice and consent of the Senate. The Board would be comprised of 10 state insurance regulators and five federal regulators. The NAIC would submit a list of state regulator nominees to the President for consideration.

The federal legislation provides the opportunity for significantly reduced collateral requirements. Home State and Port of Entry Supervisors would be responsible for evaluating their respective National and Port of Entry Reinsurers to establish an appropriate supervisory rating. A Port of Entry Reinsurer's collateral requirements for contracts entered into or renewed under the

legislation would be determined by its assigned supervisory rating in accordance with a five-tiered rating matrix, with collateral levels ranging from 0%-100%. National reinsurers in the top three rating tiers would be exempt from collateral requirements.

### Other Legislative Developments

The Nonadmitted and Reinsurance Reform Act of 2009 was passed by the House of Representatives, and similar legislation has been introduced in the Senate. In addition to addressing surplus lines insurance, it would prohibit the extraterritorial application of credit for reinsurance laws and other kinds of reinsurance requirements by any state other than the ceding insurer's domestic state. It also reserves to a reinsurer's state of domicile the sole responsibility for regulating the reinsurer's financial solvency if such state is either NAIC-accredited, or has financial solvency requirements substantially similar to NAIC. This legislation was also included in the Senate's Restoring American Financial Stability Act of 2009, which was recently released as a discussion draft bill.

Senate and House versions of The Homeowners' Defense Act of 2009 were introduced which would establish a non-profit corporation, the National Catastrophe Risk Consortium, to allow eligible state insurance programs to voluntarily pool their catastrophic property insurance risk and transfer that risk to the capital markets through the issuance of insurance-linked securities. The Senate version of the bill directs the Department of the Treasury to develop direct federal liquidity and catastrophic loan programs for qualified state catastrophe reinsurance programs. The House bill differs in that it (1) establishes a federal natural catastrophe reinsurance fund within the Department of the Treasury to provide reinsurance coverage to eligible state programs; creates a catastrophe obligation guarantee program by authorizing the Department of the Treasury to guarantee debt issued by eligible state programs, and (2) directs the Department of Housing and Urban Development to provide for mitigation grants to state and local governments.

Legislation was introduced in the House currently referred to as the Neal Bill (H.R. 3424), that proposes to amend the Internal Revenue Code to disallow the tax deduction for affiliated offshore reinsurance premiums covering U.S. risks to the extent that the premium exceeds industry averages. This follows the introduction of nearly identical legislation in the House during 2008. The Senate released a related discussion draft for public comment during 2008, as well; however, no corresponding legislation has been introduced in the Senate during 2009.

### Literature

Aon Benfield (2009), The Aon Benfield Aggregate, "FY 2008 Reinsurer Capital Maintenance";

Guy Carpenter (2009), "Reinsurance Market Review 2009";

Munich Re (2009), Topics Geo, "Natural Catastrophes 2008: Analysis, assessment, positions";

Swiss Re (2009), Sigma No. 2, "Natural catastrophes and man-made disasters in 2008: North America and Asia suffer heavy losses".

# CHAPTER II



## ASSESSING LINKAGES OF THE REINSURANCE SECTOR

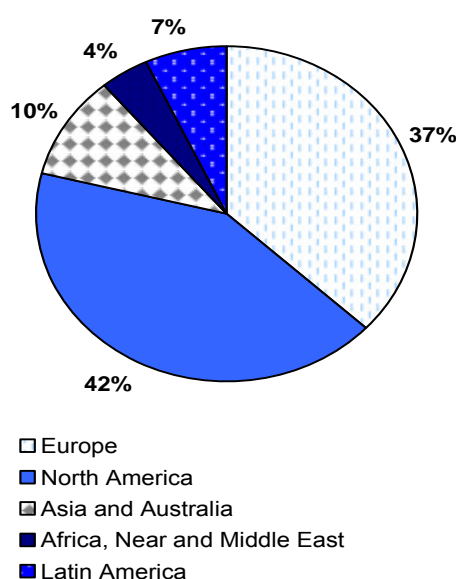
A long standing goal of the IAIS, manifested particularly through the Reinsurance Transparency Group and here, through the GRMR, has been to thoroughly understand and make transparent the linkages between financial sectors, especially as it impacts and relates to the exposures of reinsurers. We discuss in this chapter the ways in which the reinsurance market interrelates with other financial sectors. We begin with a more primary form of relatability: the geographic breadth of the reinsurance industry.

**Geographic structure of the global reinsurance market**

Differences in regional dynamics affected the geographical structure of the global reinsurance market in 2008. Notwithstanding rapid growth in emerging markets, North America, albeit with a reduced share, and Europe remained largely dominant.

**Graph II-1: Gross Premiums Assumed by Region of Ceding Insurer**

Source: IAIS



**GRMR HIGHLIGHT**

In particular, the 33% fall in gross regional premiums assumed from cedants in North America (to USD 66bn), reduced North America’s share of the global reinsurance market to 42%, down from 52% in 2007. Europe’s part remained at 37% in 2008, despite a 15% decline in gross premiums assumed in the region (to USD 59 billion). The 10% rise in gross premiums assumed in Asia and Australia in 2008 (to USD 16 bn) increased the region’s share in the 2008 global market to 10%, from 7% in 2007. While gross premiums assumed more than doubled in Latin America (plus 120%) and Africa, Near and Middle East (plus 143%), those regions still accounted for small parts of the global market, 7% and 4% respectively.

*Profile of risk, by proxies of gross premiums assumed and premiums ceded, by region<sup>7</sup>*

Data in Graph II-1, which show gross reinsurance premiums assumed by region of ceding insurer, produce the following profile of risk assumed and ceded by the reporting entities, as well as net balances, by region. In 2008, 42 % of the global risk was assumed in North America (down from 52% in 2007), 37% in Europe (unchanged), and 10% in Asia and Australia (versus 7% in 2007). Risks assumed in Latin America and Africa, which more than doubled in 2008, respectively accounted for 7% and 4% of the risk assumed worldwide.

Data in the new Table below, show gross reinsurance premiums assumed and ceded by, and net positions of, the reporting entities, by region of domicile. (The GRMR reporting entities are domiciled in Europe, United States and Bermuda ("North America") and Japan ("Asia and Australia"). None are domiciled in Africa, Near and Middle East and Latin America. The premiums assumed in those regions have been assumed by European, US and Japanese entities.)

**Graph II-2: Premiums by Region: Gross, Ceded and Net Positions**

Source: IAIS

	(1) Gross assumed by reporting entities US\$m	(2) ceded to reporting entities US\$m	(1)– (2) Net position US\$m
Europe	93'675	(64'148)	29'527
North America	77'466	(74'440)	3'026
Asia and Australia	2'273	(16'145)	(13'872)
Africa, Near and Middle East	-	(7'420)	(7'420)
Latin America	-	(11'261)	(11'261)

The Table shows that European entities are net insurance risk takers, assuming nearly 30 billion more risks than the risks ceded. North American (US and Bermuda) entities also assume more than what they cede, but the net position is considerably smaller, i.e. 3 billion (It should be recalled that in 2007 North American entities ceded 53% of global premiums, with the net position of minus USD 12bn.)

The above suggests, prima facie, that while European entities remain the largest gross and net reinsurer in the global market, the sourcing of the premiums/risk they assumed outside Europe had shifted from North America to other regions, mainly Asia and Latin America. Furthermore, while the share of North America (US and Bermuda) in the global reinsurance market shrunk significantly (From 52% in 2007 to 42% in 2008, Table 1.2), North American entities more than balanced their premiums assumed vs. premiums ceded position in 2008.

It should be noted that interpretation of the data is constrained by the number of reporting entities being limited, the effects of intra-group transactions, and the approximation in the allocation of assumed premiums by region. In addition, one must caution that the above data may not show the actual extent of the risk transfer from North American to European reporting entities or, indeed from North America to Europe. The analysis of unaffiliated nationally-aggregated data (on a group basis) would be required to assess more accurately life and non-life risk transfers among regions, assuming there is no risk transfer among reporting groups located in the same jurisdiction, which may not be a valid assumption. Moreover, since risks differ by class and line, analysis of entity-level data would be necessary for completeness of such an analysis. Cross-regional flows of funds in respect of claims payments are likely to show a different pattern. Advanced analysis of geographical risk transfer is likely to prove difficult.

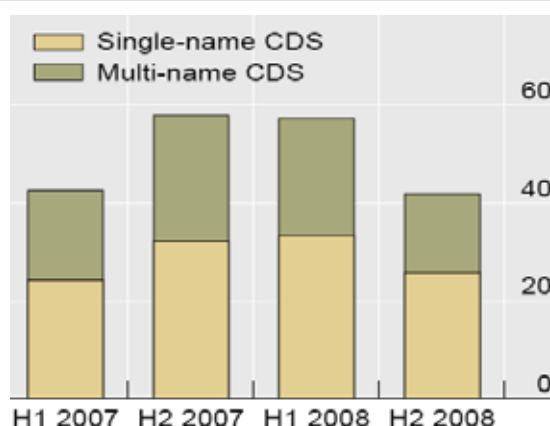
### Setting the scene: the overall market for derivative financial products

Switching gears to the linkages of the reinsurance sector instigated by financial vehicles, this section analyses ways in which the reinsurance sector can have an impact on the wider financial economy. We look here at both the assumption of risk from other financial sectors, principally credit risk, as well as the transfer of insurance risk to other capital markets entities.

2008 marked a significant turnaround in the market for credit derivatives, as notional amounts fell by year end from 2007 levels, inverting the growth trend of the past few years. This was apparent in major market surveys, i.e., by the Bank for International Settlements (BIS) and the International Swaps and Derivatives Association (ISDA), notwithstanding some differences in aggregate figures. For instance, year-end figures by ISDA (ISDA year-end 2008 Market Survey, ISDA <http://www.isda.org/>) indicate that the notional amount outstanding of credit default swaps (CDS) – the most widely used credit derivative – was \$38.6 trillion, 29% lower than the \$54.6 trillion at mid-year 2008. The fall in notional amount outstanding of CDS accelerated in the second half of the year, after a drop by 12% to \$54.6 trillion in the first half of 2008. For the year as a whole, the amount of CDS notional outstanding fell 38%, from \$62.2 trillion at year-end 2007. The \$38.6 trillion notional amount was approximately evenly divided between bought and sold protection: bought protection notional amount was \$19.5 trillion and sold protection was \$19.1 trillion, with a net bought notional amount of \$400 billion. The contraction in 2008 is remarkable by comparison with sustained growth rates in the previous few years, slightly over 100% in 2005 and 2006, and 81% in 2007. ISDA data for the first half of 2009 confirm the contraction in notional amounts, although at a more contained pace: notional amount outstanding fell 19% in the first six months to \$31.22 trillion. The fact that decrease was higher among major dealers – 21.2% – suggests that it at least partly reflects continuing efforts at portfolio compression. But although efforts to improve multilateral netting of offsetting contracts has been contributing to the decline in nominal figures since 2007, (See Credit default swaps and counterparty risk, ECB, August 2009 (<http://www.ecb.int/pub/pdf/other/creditdefaultswapsandcounterpartyrisk2009en.pdf>)) severely strained credit markets accelerated the fall in notional market values in 2008.

**Graph II-3: Notional Amount Outstanding of CDS (US\$ trillions)**

Source: BIS



A similar picture emerges from the BIS data (See *OTC derivatives market activity in the second half of 2008*, BIS, May 2009 ([http://www.bis.org/publ/otc\\_hy0905.pdf](http://www.bis.org/publ/otc_hy0905.pdf))), according to which, in 2008, notional amounts of OTC CDSs outstanding decreased by more than 26%, to \$42 trillion. The drop took place primarily in the second half of the year, while in the first half total notional values remained broadly unchanged from the end of 2007, a year when the market continued to experience some expansion, at least in the first six months. The BIS data also cover gross market values. In normal times, because gross market values measure the cost of replacing all existing contracts, they are a better indicator of derivatives related exposures. However, market strains in 2008 make the reading of gross market data less straightforward: these values were markedly higher in 2008 due to significant price movements. At the end of the year, gross market values stood just above \$5.6 trillion, more than the double the corresponding figure – \$2 trillion – at the end of 2007. Overall, this increase suggests that risks stemming from exposures to the credit derivative market did not fall in 2008, but this conclusion is not fully warranted due to high market



volatility.

The decline in notional amounts can also be analyzed in relation to type of contracts, reference entity and counterparties. In 2008, the decline was significantly more pronounced in multi-name (37%) than single-name (22%). This difference possibly reflected a shift away from products that were perceived to be more complex and therefore more problematic in the context of the recent crisis. A shift away from risk-taking was also suggested among single-name CDSs by the larger drop in notional amounts in contracts on firms below investment grade or non-rated (24%) than on those of investment grade (18%).

**Graph II-4: Credit Default Swaps (by institution)**

Source: BIS

Credit default swaps	end-2008		
	Notional amounts outstanding		Gross market value
	Protection Bought	Protection Sold	
<i>Breakdown by institution (end-December 07; US\$ bn)</i>			
With reporting dealers	25,033	25,010	3,177
With other financial institutions	8,526	7,826	2,377
<i>Banks and securities firms</i>	5,841	5,505	1,575
<i>Insurance and financial guaranty firms</i>	284	115	58
<i>Other</i>	2,401	2,207	744
With non-financial customers	306	188	98
Total	33,866	33,024	5,652
<i>of which: multi-name CDSs (% of total CDSs)</i>			
Reporting dealers	36.6	37.1	33.8
Other financial institutions	41.4	41.1	35.6
<i>Banks and securities firms</i>	43.0	45.0	36.6
<i>Insurance and financial guaranty firms</i>	34.9	22.6	25.9
<i>Other</i>	38.2	32.4	34.4
With non-financial customers	35.9	37.8	36.7
Total	37.8	38.0	34.6

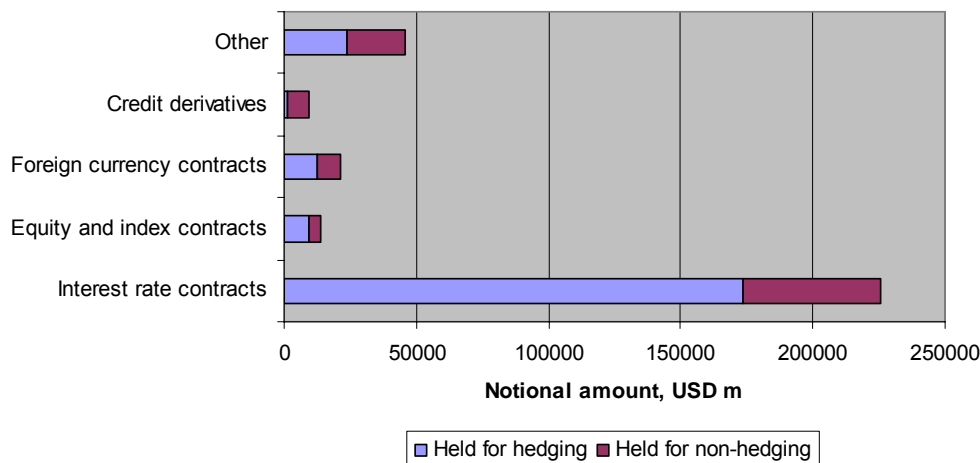
The composition of market activity across counterparties also changed in 2008. Outstanding contracts between dealers and other financial institutions as well as between dealers and non-financial institutions fell considerably relative to the inter-dealer market. Concerning the insurance sector, notional amount outstanding of CDSs with insurance firms remained a very small portion of the market, at less than 1% of the total. According to the BIS survey, in 2008 the notional amounts outstanding of credit protection sold that insurance firms bought fell by 34% in comparison to 2007, to \$115 billion, against a fall in credit protection bought that insurance firms sold of only 13% – to \$284 billion–, but this may simply reflect a relative readjustment after the disproportionate increase in the purchase of credit protection by insurance firms in 2007. Against the fall in notional amounts of credit protection bought or sold involving insurance firms, corresponding gross market values increased three-fold in 2008. This increase was of the same order of magnitude as that for banks and securities firms, and below that referring to reporting dealers, suggesting some uptick in risk exposures for insurance firms as for banks and securities firms.

**The interplay of the reinsurance market and the market for financial derivatives**

The data in the GRMR survey continues to track reinsurers’ participation in the markets for a variety of different derivative financial products. Some of these are held by reinsurers for hedging purposes (against, for example, currency risk) whilst others are held as investments. The reporting entities held a total of almost USD316bn of derivative financial instruments at year-end 2008, the largest category of which related to interest rate contracts.

**Graph II-5: Financial Derivatives Holdings**

Source: IAIS



In total, just under 70% (by notional amount) of the participating reinsurers’ holdings of financial derivatives were for hedging purposes. This is broadly consistent with the position seen in previous years.

**CDOs and CDSs**

As well as financial derivatives more generally, the survey tracks reinsurers’ participation in specific types of credit risk transfer (CRT) activity. For a number of years, participating reinsurers have provided details of their activities relating to collateralised debt obligations (CDOs) and credit default swaps (CDSs). The 2008 data is shown below, alongside 2007’s values for comparison purposes.

**Graph II-6: Participation in CDs and CDOs (US\$ millions)**

Source: IAIS

Type of contract		2008 (notional amount USD m)	2007 (notional amount (USD m)
CDSs, of which	Protection bought	2,050	3,534
	Protection sold	7,188	9,093
CDOs, of which	Protection bought	130	66
	Protection sold	980	1,302
Total protection bought		2,180	3,600
Total protection sold		8,168	10,395

The reinsurance industry remains a net protection seller, and to an increasing extent. In 2007, 74% of contracts (by notional amount) were on a protection sold basis, increasing to 79% in 2008. This trend is probably not hugely significant, and it would be wrong to attempt to read too much into it, given the ongoing significant disruption to the markets in credit derivatives. Overall participations have fallen, and again this is probably indicative of the high levels of market disruption, and attempts by counterparties to de-risk their positions.

In last year's report we made a number of comments relating to reinsurers' controls over this type of activity. In particular we said that 'in the case of the insurance industry, wherever firms are exposed to risk via complex financial products, it is especially important that firms adequately provide for the potential costs stemming from these operations, upgrade their risk management systems and review the case for entering new and potentially riskier business lines' IAIS, Global Reinsurance Market Report 2008, December 2008, [www.iaisweb.org](http://www.iaisweb.org)). It may be that the reduced levels of exposure highlighted above are part of a wider industry trend to assess and manage risk more thoroughly, and to take a more rigorous approach to non-core activities. It will be interesting to see whether this trend continues during the next twelve months, or whether increasing market stability and economic recovery will lead to a restoration of activities to 'pre-crisis' levels.

In the past, we have highlighted certain deficiencies in the data, and these continue to be a feature which makes very meaningful trend analysis somewhat difficult. It should be borne in mind that not all types of credit risk transfer instruments would necessarily be captured by the survey, and also that notional value is not always the most accurate indicator of the precise levels of credit risk associated with a given instrument. Gross market values, however, remain extremely volatile and are probably a much less accurate measure of the total exposure. Finally, it should be noted that the data refers to reinsurance carrying legal entities only, and does not capture exposures held by other parts of reinsurance groups.

### Reducing systemic risk in OTC derivatives markets

More in general, the market for credit derivatives is undergoing some structural changes that are expected to reduce the level of risk in this market segment. The driving factor is the recognition that lack of transparency in the OTC market increased the level of systemic risk associated with it. One insurance-related example for instance was the case of AIG, which had very sizeable one-way exposures to the credit derivatives market as a protection seller via CDSs. However, lack of transparency on the size and direction of its exposures complicated their monitoring and forced an emergency response by the US authorities in September 2008.

The regulatory community has recently adopted a number of measures to reduce systemic risks in OTC derivatives markets (See FSB *Improving Financial Regulation*, September 2009 ([https://www.financialstabilityboard.org/publications/r\\_090925b.pdf](https://www.financialstabilityboard.org/publications/r_090925b.pdf))). In particular, the official sector has committed to strengthen capital requirements to reflect the risks of OTC derivatives and further incentivise the move to central counterparties and, where appropriate, organised exchanges. For the banking sector, this work will be carried out in 2010 by the Basel Committee on Banking Supervision (BCBS), but regulators will also provide equivalent rules outside of the

banking sectors. Authorities have also agreed to strengthen standards for central counterparties by mid-2010 to address the issues specific to clearing OTC derivatives, and develop international recommendations for OTC derivatives trade repositories, working through the Committee on Payment and Settlement Systems and the International Organization of Securities Commissions (IOSCO). They will also coordinate efforts to oversee and apply international standards to OTC derivatives central counterparties and trade repositories, and identify legal or other impediments to implementing the OTC derivatives market reforms, which regulators or legislative authorities will then take action to resolve.

The official sector has also demanded that the private sector take strong action to strengthen the credit derivatives market (See FSB *Improving Financial Regulation*, September 2009 (cfr)). In particular, authorities expect the private sector to meet its commitments to supervisors to expand central clearing of OTC derivatives trades; improve risk management for trades that are not cleared, meet increasingly stringent targets for operational improvements and report data on their performance to their regulators; and report all non-cleared trades to regulated trade repositories.

**Counterparty linkages and exposures more generally**

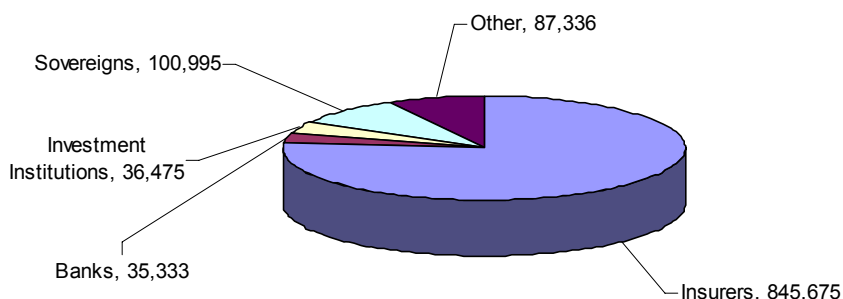


**GRMR HIGHLIGHT**

Whilst financial and credit derivatives are a very specific way in which the reinsurance industry can assume risk from other parts of the financial economy, the survey also tracks more generally the participating reinsurers' exposures to other financial counterparties. This has helped to assess the inter-connectedness more generally of the reinsurance market, and consider the way in which reinsurers are part of the financial system as a whole.

**Graph II-7: Total Exposures by counterparty type (US\$ millions)**

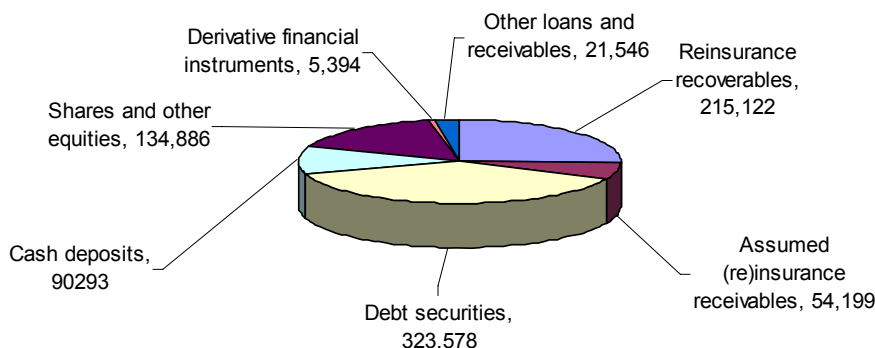
Source: IAIS



Unsurprisingly, the reporting reinsurers' largest exposures remain to other insurance entities. Whilst significant parts of these are 'trade' exposures (i.e., those arising from the operation of a reinsurance business, exposures within the reinsurance sector are wider than these.

**Graph II-8: Exposure to Insurance Entities by Type (US\$ millions)**

Source: IAIS



Exposures to other financial institutions are much smaller, at less than 10% of the exposure to insurance entities, and broadly equivalent to the industry's exposure to 'other' (i.e., non-financial) counterparties.

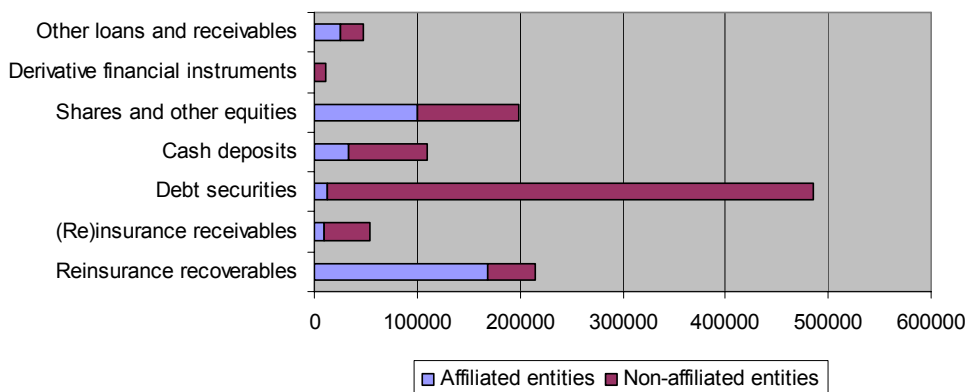
Exposures to Sovereigns is comprised entirely of debt securities and other loans, and the presence of such a large exposure (greater than that to non-insurance financial institutions) reflects the reinsurance industry's ongoing relatively conservative approach to investments and appetite for gilt-edged securities.

**Affiliation**

The final aspect of the survey's approach to counterparty exposure is to look at the affiliation of counterparties to the reporting reinsurers. This information is broken down below.

**Graph II-9: Affiliation of Counterparty by Investment Type (US\$ millions)**

Source: IAIS



In total, about one third of the industry’s counterparty exposure is to affiliated counterparties. The largest proportion exists in reinsurance (and retrocession) recoverables, which may indicate a relative slowness to collect reinsurance recoverables from within the same corporate group. Also, a relatively high proportion (50%) of equity investments are in affiliated companies, which is likely to reflect investments in subsidiaries.

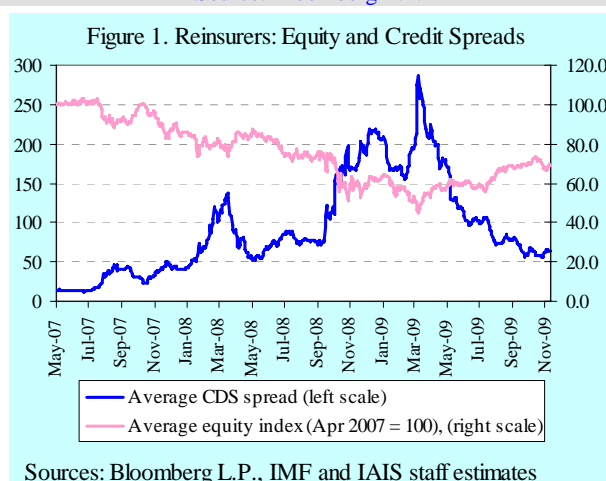
**Systemic default risk decreases**

By way of concluding remarks and to sum the cross-sector impacts of the reinsurance industry, we discuss briefly how the industry is positioned for the medium-term and the improvement witnessed via systemic default risk.

The global financial system and, with it, the financial conditions of the largest re-insurers have improved considerably since the 2008 GRMR. Extreme tail risks seem to have abated. Financial markets have rebounded, including the largest emerging markets. Financial institutions have improved their capital positions and net income, including most firms in the re-insurance business, and liquidity and funding conditions have improved in most markets.

**Graph II-10: Equity and Credit Spreads**

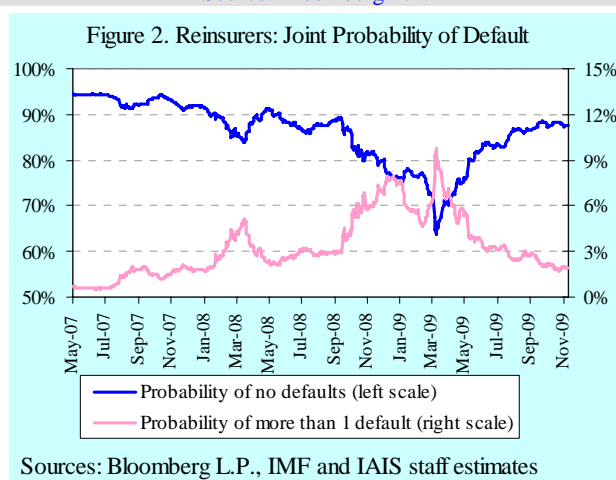
Source: Bloomberg L.P.



In the last quarter of 2008 and first quarter of 2009, the continuation of high asset price volatility and elevated credit spreads, had been felt in the re-insurance industry. Large exposures to complex structured products by some firms, especially the largest Swiss Reinsurer, re-kindled stability concerns towards the end of the first quarter of 2009. These receded in the second and third quarter of 2009, evidenced by re-insurers’ equity values and credit spreads returning to pre-September 2008 levels (Figure 1). Reinsurers’ improving net income and capitalization reflect not only better economic and financial conditions but also improving core re-insurance business in a year with relatively limited natural catastrophe claims.

**Graph II-11: Reinsurers Joint Probability of Default**

Source: Bloomberg L.P.

**GRMR HIGHLIGHT**

To measure the systemic default risk in the reinsurance business, Figure 2 presents the market-implied probability of joint defaults obtained from a CDS basket containing seven of the world's largest re-insurers (See Box 2-1 in Chapter 1 of 2007 RTG, for a description of the methodology. See also IMF Working Paper 06/105 by Avesani, Garcia Pascual, and Li. The CDS basket includes five European companies, one North American/Bermudan company, and one Asian company). Based on mid-November 2009 data, the probability of no defaults has increased sharply to levels similar to the summer of 2008. More importantly, the probability of observing more than one default (i.e., a severe tail event) has significantly dropped to less than 2 percent, from nearly 10 percent in the first quarter of 2009. The drop in systemic risk is both the result of an improvement in the individual risk profile of each re-insurer, as well as a significant drop in their default codependence—the average equity return correlations between reinsurers dropped from over 50 percent in November 2008 to nearly 25 percent in November 2009.

### GRMR Spotlight Development: Mutual Recognition within the European Union

Due to the different approaches of implementing Article 49 of the Reinsurance Directive (2005/68/EC) within the European Union, CEIOPS' Members agreed on the need for coordination at CEIOPS level regarding the assessment of the equivalence of a third country supervisory regime in September 2007.

Therefore the "Equivalence Subcommittee" was established in October 2007. In particular, the Equivalence Subcommittee was mandated to conduct a stocktaking of any existing assessments by CEIOPS Members and to present a proposal on the methods and procedures to be applied in the assessment of the equivalence under the Reinsurance Directive.

In 2008, CEIOPS circulated a survey to examine the regulatory and supervisory treatment of third country reinsurance undertakings and existing equivalence procedures. The report on the findings was published in January 2009. In addition CEIOPS published a database on the regulatory and supervisory treatment of third country reinsurance undertakings and existing equivalence practices in September 2009. Compared to the report the database provides detailed information on the regulatory and supervisory treatment of third country insurer and reinsurer in every Member State.

Furthermore CEIOPS developed a methodology and criteria for the assessment of third country supervisory equivalence under the Reinsurance Directive and the equivalence of professional secrecy standards under the Reinsurance, Consolidated Life and Third Non-Life Insurance Directives. These criteria, which were published in January 2009, provide a basis for specific equivalence assessments of third country regimes, and, where appropriate, the agreement of Memoranda of Understanding with relevant third country competent authorities.

Moreover the Solvency II Directive includes Articles concerning Equivalence for third country solvency or prudential regimes regarding the supervision of reinsurance activities and group supervision. This might cause further work for CEIOPS in respect of equivalence assessments under Solvency II.

### European reinsurance market evolution

The continuous opening of local European subsidiaries by many Bermudian reinsurers – as a result of the European Reinsurance Directive 2005/68/EC – indicates that their involvement in the region is expected to grow in the future. In recent years, Bermudian reinsurers have launched subsidiaries or opened offices in Europe, particularly in Ireland and Switzerland. Bermudian based reinsurer PartnerRe Ltd. announced in July 2009 the purchase of Paris Re. This acquisition boosted PartnerRe Ltd. into the top ten global reinsurance groups. Increased competition in the European market could be the consequence of such a development.

The Reinsurance Directive has also made it easier to move reinsurance business portfolios within the European Union. This option is occasionally used for portfolios which are intended to be put into run-off. Increased activities in the run-off sector might be observed in the upcoming years, as companies might seek to unlock capital in preparation for Solvency II requirements.

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# APPENDICES



## Participants in Reinsurance Transparency Subgroup (RTG)

### Participating jurisdictions

Bermuda  
 France  
 Germany  
 Japan  
 Luxembourg (new)  
 Spain  
 Switzerland  
 United Kingdom  
 United States

### Reinsurance Transparency Subgroup (RTG) members

Jeremy Cox (Chairman)	Bermuda Monetary Authority, Bermuda
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Fabrice Pesin	Ministère de l'Economie de l'Industrie et de l'Emploi, France
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Annick Felten	Commissariat aux Assurances, Luxembourg
Pablo Muelas Garcá	Dirección General de Seguros y Fondos de Pensiones, Spain
Stefan Senn	FINMA, Switzerland
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### Representatives of RTG members

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Aiko Tatsumi	Financial Services Agency, Japan
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Industry representatives

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Leila Medeiros	Association of Bermuda Insurers and Reinsurers
Hans-Jürgen Säglitz	GDV, Germany
Hildegard Stuke	Hannover Re, Germany
Klaus Schampel	General Re, Germany
Ralph Vogelgesang	Munich Re, Germany
Matthias Kubicek	Munich Re, Germany
Masaaki Nagamura	Tokio Marine & Nichido Fire Insurance Co. Ltd, Japan
Makoto Hori	Tokio Marine & Nichido Fire Insurance Co. Ltd, Japan
Katsuo Matsushita	General Insurance Association of Japan
Alastair Evans	Lloyd's, United Kingdom
Carolyn Cobb	Law Office of Carolyn Cobb, United States
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Brad Smith	American Council of Life Insurers, United States
Tracy Laws	Reinsurance Association of America, United States
Martin Carus	AIG, United States
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Secretariat

The IAIS Secretariat provides support to the Reinsurance Transparency Subgroup, with involvement, as necessary, from the FSF Secretariat and IMF staff, and staff of other financial stability organisations.

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## Methodology and list of reporting reinsurers

### *Structure of the statistics*

As for the previous report, the method of gathering, processing and releasing the data submitted by reporting reinsurers is based on a three-level approach, with each level of data requiring different treatment and confidentiality rules:

- A-level data (legal entity-based information)
- B-level data (nationally aggregated data)
- C-level data (global data).

Using reinsurer-specific information (A-level data), and using a consistent template, participating supervisors have compiled aggregate reports (B-level data) for their respective jurisdictions. Supervisors have then transmitted the aggregate reports (B-level data) for their respective jurisdictions to the IAIS Secretariat. Based on the aggregate reports received from the supervisors the IAIS Secretariat has compiled the data into global tables (C-level data).

### *Coverage and selection criteria*

To obtain a significant coverage of the global reinsurance market, criteria were agreed upon for the selection of globally significant reinsurers ('reporting reinsurers') to be included in the statistics.

The selection criteria, which are unchanged from the previous year, are based upon unaffiliated business only, to avoid the inclusion in the statistics of those reinsurers whose significant reinsurance transactions are intra-group only. The criteria are as follows:

- Gross unaffiliated reinsurance premiums assumed of US\$ 800 million (US\$ 20 million for monolines); or
- Gross unaffiliated technical reserves of US\$ 2 billion (not applied to monolines); with
- Discretion of the national authority to recommend certain entities to be excluded, with a final decision by the group.

This has resulted in a total of 51 major reinsurers from the 9 participating jurisdictions meeting the selection criteria for inclusion in the 2009 global reinsurance market statistics are as follows:

### **Bermuda**

1. Allied World Assurance Company Ltd
2. Arch Reinsurance Ltd
3. Axis Specialty Ltd
4. Catlin Insurance Company Ltd
5. Everest Reinsurance (Bermuda) Ltd
6. Partner Reinsurance Company Ltd
7. Renaissance Reinsurance Ltd
8. XL Re Ltd

### **France**

1. Axa Re (Paris Ré)
2. Caisse Centrale de Reassurance
3. Scor
4. Scor Global Life
5. Scor P&C

### **Germany**

1. Swiss Re Frankona Rückversicherung AG
2. E+S Rückversicherung AG
3. Hannover Rückversicherungs-AG
4. Kölnische Rückversicherungs-Gesellschaft-AG
5. Münchener Rückversicherungs-Gesellschaft-AG
6. Swiss Re Germany AG

### **Japan**

1. Toa Reinsurance Company Ltd
2. Tokio Marine & Nichido Fire Insurance Co. Ltd

### **Luxembourg**

1. Swiss Re Europe S. A. (new)

### **Spain**

1. Mapfre Re

**Switzerland**

1. European Reinsurance Company of Zurich
2. Swiss Reinsurance Company, Zurich
3. SCOR Switzerland AG

**UK**

1. Aspen Insurance UK Ltd
2. Lloyd's

**US**

1. Ace America Insurance Company
2. Agri General Insurance Company (new)
3. American Agricultural Insurance Company
4. Employers Reassurance Corporation
5. Everest Reinsurance Company
6. Firemans Funds Insurance Company
7. General Reinsurance Corporation
8. Hannover Life Reassurance Company of America
9. Lincoln National Life Insurance Company
10. MBIA Insurance Corporation (new)
11. Metropolitan Life Insurance Company (new)
12. Munich American Reassurance Company
13. Munich Reinsurance America Inc
14. National Indemnity Company
15. Odyssey American Reinsurance Corporation
16. Partner Reinsurance Company of the US
17. RGA Reinsurance Company
18. Rural Community Insurance Company (new)
19. Security Life of Denver Insurance Company
20. Swiss Reinsurance America Corporation
21. Swiss Re Life & Health America Inc
22. Transamerica Occidental Life Insurance Company
23. Transatlantic Reinsurance Company

### **Collection, aggregation and presentation of the data disseminated in this report**

Before using individual items of data from the tables, readers should be aware of some of the limitations which arise from the compilation of the information. These are issues of detail, and we do not believe that they detract in any material way from the broad conclusions that can be drawn from the data. For details on individual tables, please refer to the explanatory notes that accompany the final data sets in Appendix I.

First, it should be noted that the data is a composite of information provided by reinsurers based in different jurisdictions. This gives rise to issues relating to the accounting treatment of certain items (such as deferred acquisition costs), as well as posing difficulties because of different standards of disclosure in different countries. Wider international developments will hopefully lead to convergence of such accounting standards over time, but the extent of this issue at present should not be underestimated. It should also be noted that whilst in most reporting jurisdictions the accounting reference date is the calendar year end, in Japan it is 31 March.

Second, readers should be aware that the data is compiled on a legal entity basis. There are good reasons for doing this, including the fact that group failures are triggered by failures at legal entity level, insurers are supervised primarily on a legal entity basis, and this method facilitated the maintenance of confidentiality and addressed practical considerations around the gathering of data. However, doing so distorts the effect of intra-group reinsurance transactions, which may lead to greater stability at group level but possibly overstate levels of reinsurance dependency at entity level.

It should also be noted that approximations have been used in some parts of the data where the appropriate underlying information is unavailable or compiled on a different basis. Also, comparisons with previous years may provide some misleading results because of (a) changes from year to year in the population of reinsurers who qualify for inclusion; and (b) currency fluctuations.

Finally, it should be noted that the method of compilation of the data is designed to protect the confidentiality of the participating reinsurers at each stage. For this reason it is not possible for any one person to verify the data produced at each stage and, as such, there is greater potential for error than would normally be found in a report of this nature. Nevertheless, it is of course the case that all parties have endeavoured to produce valid data.

The remaining appendices can now be found on the IAIS website, in the area which is accessible to IAIS members and observers, under: Committees, Subcommittees and working parties, Reinsurance Transparency Subgroup, Reference documents.