April 30, 2012

Via Electronic Mail
(regs.comments@federalreserve.gov)

Ms. Jennifer J. Johnson
Secretary
Board of Governors of the Federal Reserve System
20th Street and Constitution Avenue, N.W.
Washington, DC 20551

RE: RIN 7100-AD-86; Docket No. 1438: Proposed Regulation YY – Enhanced Prudential Standards and Early Remediation Requirements for Covered Companies

Dear Ms. Johnson:

The RAA is the leading trade association of property and casualty reinsurers and life reinsurers doing business in the United States. RAA membership is diverse, including reinsurance underwriters and intermediaries licensed in the U.S. and those that conduct business on a cross border basis. We appreciate the opportunity to comment on the Board of Governors of the Federal Reserve System’s (Board) proposed Regulation YY (Proposed Rule) to implement the enhanced prudential standards and early remediation requirements set forth in sections 165 and 166 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank Act). The Proposed Rule would apply to U.S. bank holding companies with total consolidated assets of at least $50 billion and nonbank financial companies that have been designated as “systemically important financial institutions” (SIFIs) pursuant to section 113 of the Dodd-Frank Act and its associated rule (FSOC Final Rule).

As an initial matter, the RAA endorses the comments submitted by the American Insurance Association (AIA), which state that the Dodd-Frank Act compels a separate rulemaking for SIFIs and that any such rulemaking should not apply a “one-size-fits-all” approach that fails to differentiate among the financial sectors. The Proposed Rule’s standards are geared towards the banking sector, and the bank-specific provisions are not equally applicable to other, nonbank financial entities – particularly those in the insurance sector.

The RAA also believes that the FSOC Final Rule and interpretive guidance validate the widespread agreement among U.S. and international insurance regulators and the global insurance industry, that traditional insurance activities are not a significant source of systemic risk. The RAA has performed extensive analyses of the global reinsurance industry and have demonstrated on several metrics that
reinsurance activities are not a significant source of systemic risk. Attached is a presentation provided to the International Association of Insurance Supervisors (IAIS) in July 2011 and an article prepared by the RAA that address these issues. Also attached is a presentation dated February 1, 2012 entitled “Systemic Risk Discussion – Reinsurance Perspective” that was presented to the Reinsurance Subcommittee of the IAIS. These materials have also been presented or shared with the Treasury Department and the Federal Insurance Office.

These analyses clearly demonstrate that property casualty reinsurance is not a significant source of systemic risk given the small size of the industry’s outbound credit exposure in relation to the financial markets. The reinsurance industry does not have material interconnectedness with its ceding company counterparties, and there are substantial alternatives for substitute capacity in the event of the failure of one or more major reinsurers. Property casualty reinsurance obligations are illiquid in nature, are not callable and are uncorrelated with systemic risk events that could cause distress in other financial market segments. As such, this industry cannot be considered a material contributor to systemic risk in the U.S. or global economies. Our analysis demonstrates that, under the FSOC Final Rule First Determination Standard, no reinsurer would be determined to be a nonbank financial company whose material financial distress could pose a threat to the financial stability of the United States.

The property casualty (re)insurance business model is substantially different than that of banks and other non-bank financial institutions and therefore, systemic risk regulation of (re)insurers should focus only on those non-insurance activities that might involve systemic risk. Although we believe it is unlikely that a determination will be made designating any (re)insurer as a SIFI, to the extent that such a determination might be made, RAA believes that the Dodd-Frank Act compels a separate rulemaking. The Board should defer any such rulemaking until the Section 113 determination process is concluded and it is clear whether any insurance or reinsurance company is so designated. To the extent necessary, the Board at that time can address the substance and form of a separate rule that would reflect prudential and remediation differences in the insurance sector.

We appreciate the opportunity to provide comments on the Proposed Rule.

Sincerely,

Tracey W. Laws
Senior V.P. and General Counsel
EVALUATING SYSTEMIC RISK

Property & Casualty Reinsurance

IAIS Reinsurance Subcommittee and Reinsurance Transparency Subgroup

Toronto Canada
27, July 2011
Definitions of Systemic Risk

Financial Stability Board

- “The risk of disruption to the flow of financial services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy.”

- “Fundamental to this definition is the notion that systemic risk is associated with negative externalities and/or market failure and that a financial institution’s failure or malfunction may impair the operation of the financial system and/or the real economy.”
Definitions of Systemic Risk

Federal Reserve Chairman Ben Bernanke

“The possibility that the failure of a large interconnected firm could lead to a breakdown in the wider financial system; systemic risks threaten the stability of the financial system as a whole and consequently the broader economy, not just that of one or two institutions.”
The (re)insurance business model is not a source of systemic risk.

- It is fundamentally different from other financial institutions.
- Inverted production cycle: obligations are pre-funded at the inception of the policyholder relationship.
- Lack of leverage limits interconnectedness.
- (Re)insurance obligations are not callable. Cash outflows may only be triggered by an external insured event.
- Insured loss events are not correlated with financial crises or economic cycles.
FSB Systemic Risk Attributes

The FSB has identified four primary attributes for the evaluation of systemic risk

- Size
- Interconnectedness
- Substitutability
- Time / Liquidity
Size - Reinsurance recoverables are not systemic risk amounts relative to U.S. financial markets or economy.
Size - Small relative size / reinsurance credit risk is further reduced by offsetting amounts.

<table>
<thead>
<tr>
<th>U.S. P&amp;C Industry Exposure to Reinsurance Recoverables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2009 Results</strong></td>
</tr>
<tr>
<td>Total Assets</td>
</tr>
<tr>
<td>Reinsurance Recoverables on Paid Losses</td>
</tr>
<tr>
<td>Policyholders' Surplus</td>
</tr>
<tr>
<td><strong>Net Recoverables</strong> (Paid, Case &amp; IBNR, net of amounts owed to reinsurer)</td>
</tr>
<tr>
<td>Less Funds Held</td>
</tr>
<tr>
<td>Less LOCs, Trust Funds, &amp; Other Collateral</td>
</tr>
<tr>
<td><strong>Equals Net Net Recoverable</strong></td>
</tr>
</tbody>
</table>

**Recoverables Analysis**

| **Net Net Recoverable as % of PHS**                    | 18.4%         |
| **Net Net Recoverable as % of Total Assets**          | 6.3%          |
| **Recoverable on Paid Loss as % of PHS**               | 2.8%          |
| **Recoverable on Paid Loss as % of Total Assets**     | 1.0%          |
Interconnectedness - Insurance risk is spread broadly and globally. Reinsurance is a net credit enhancement for many cedents.

Top US P&C Groups

3rd Party Reinsurance Net-Net Recoverables Concentration

- Swiss Re: A+
- Berkshire Hathaway: AA+
- Munich Re: AA-
- Lloyd's of London: A+
- Nationwide: BBB*
- Everest Re: A+
- Transatlantic Re: A+
- Hannover Re: AA-
- XL Group plc: A
- Fairfax: A-
- All Other Reinsurers

*Note: Nationwide’s AM Best Rating = A+. Approximately 90% of this net-net recoverable is due from Nationwide Indemnity Co., an entity used to run off asbestos and environmental obligations.
Interconnectedness & Substitutability

P&C industry cessions to the global reinsurance market are only 20% of gross premium.

U.S. P&C Industry: Reinsurance Utilization Rates

[Graph showing the percentage of reinsurance utilization from 1996 to 2009]
Substitutability - Capital is quickly replaced following significant events. Alternative forms of capital have become more prevalent.

Post CAT-Event Capital Raised

<table>
<thead>
<tr>
<th></th>
<th>KRW</th>
<th>9/11 Events</th>
<th>Andrew</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Capital Raised</td>
<td>$52.2 B</td>
<td>$22.2 B</td>
<td>$7.0 B</td>
</tr>
<tr>
<td>Est. Loss Industry Wide</td>
<td>$65.0 B</td>
<td>$41.0 B</td>
<td>$15.5 B</td>
</tr>
<tr>
<td>New Capital % of Est. Loss</td>
<td>80.3%</td>
<td>54.1%</td>
<td>45.2%</td>
</tr>
</tbody>
</table>
New capital inflow into reinsurance shows high substitutability

Reinsurance rates increase for years following big catastrophes
- This attracts steady inflow of capital in the industry through new entrants or capital increases of existing reinsurers (including side cars and cat bonds)
- In addition, capital base of reinsurers is also progressively rebuilt after large natural catastrophes through the higher reinsurance rates

Reinsurance capacity has always increased after natural catastrophes – insurance capacity is highly substitutable

Source: Thomson, Guy Carpenter, AON Benfield, Dealogic, Oliver Wyman analysis
Substitutability - Catastrophe Bond Market Growth Continues

RISK CAPITAL ISSUED AND OUTSTANDING, 1997 – 2011 YTD

Source: GC Securities   As of May 31, 2011
Substitutability - Capital flows follow the reinsurance cycle. Reinsurance absorbs insurance industry volatility and adds stability.
Time/Liquidity - (Re)insurance obligations are not callable, significantly limiting the systemic risk potential.

US P&C Recoverables on Paid Losses Compared to Surplus and Assets

$14 Billion Reinsurance Recoverable on Paid Losses are the only amounts currently due. Reflects the illiquid nature of insurance and reinsurance obligations.
**Time/Liquidity** - Liability reinsurance losses emerge over many years.

**Historical Loss Development Paid Losses Excess Reinsurance**

![Graph showing historical loss development and paid losses with various categories over maturity years](image-url)

RAA Historical Loss Development Study, 2009 Edition
Reinsured property catastrophe losses also emerge more slowly than might be expected.
Assumptions Underlying A Global Reinsurance Stress Test Scenario
Reinsurer capital was minimally impacted by the financial crisis. It recovered quickly and remains adequate for demand.

Source: Individual Company Reports, Aon Benfield Analytics
Economic losses are 5 to 20 times greater than reinsured losses.

The Range can be impacted by:

- type of reinsurance (XOL v. QS)
- type of peril (take-up rate/exclusions)
  - e.g. Earthquake/Flood
- location (insurance penetration)
  - e.g. developed v. developing economies
- level of government participation in the reinsurance market
Natural Catastrophes in differently insured countries

Classification of the world by property insurance premium (non-life including health) per capita

Overall losses* 1980 - 2009
Total: US$ 2,750bn

Insured losses* 1980 - 2009
Total: US$ 690bn

Highly insured countries
(US$ >1,000 per capita)

Well insured countries
(US$ 101 - 1,000 per capita)

Basically insured countries
(US$ 11 - 100 per capita)

Inadequately insured countries
(US$ <10 per capita)

Source: MR NatCatSERVICE as at July 2010
Economic Losses are 5 to 20 Times Greater than Reinsured Losses

Reinsurance is not nearly as significant a source of risk compared to uninsured loss.

### Hurricane Katrina
- **Economic Loss**: 125
- **Paid By Reinsurers**: 22

### U.S. 1-in-250 Yr EQE
- **Economic Loss**: 109
- **Paid By Reinsurers**: 4

### 9/11/2001 Terrorist Attack
- **Economic Loss**: 200
- **Paid By Reinsurers**: 23

### Average of Significant Historical Events
- Economic Loss: 13.4%
- Paid By Reinsurers: 86.6%
Insured losses are a small portion of economic losses: Reinsurance loss is an even smaller portion.
Stress Test Scenario:
100% Solvency Ratio
Creating an extreme scenario: What would it take to bring down a major reinsurer?

- To start with: let’s focus on a leading global reinsurer to see what amount of losses would be needed to reduce its capital base to 100% of the solvency ratio. Let’s use published data for Munich Re and Swiss Re (the global TOP2) and think of this hypothetical reinsurer as a simple average of the two market leaders (thus all numbers used in this example will be based on a simple average of the respective Munich Re and Swiss Re number).

- Taking into account an average 2009 solvency ratio of 253% for this hypothetical reinsurer and available capital of $33.7 bn., a fall to the 100% solvency ratio level (capital at $13.3 bn.) would imply a cumulated loss event in the magnitude of $~20.4 bn.

- This would imply a loss more than ten times the loss from Hurricane Katrina (~$1.9bn. for Munich Re and Swiss Re on average), the by far largest (re)insured loss event in history.

- Thus, it would take such an extremely large loss event (or equivalently, a series of very large loss events taking place within a short period of time) just to bring the level of capital to 100% of the solvency margin. One should therefore extend this stress scenario to the entire industry to see what level of economic loss would cause the whole reinsurance industry’s capital to fall to a 100% solvency ratio level.

Source: Munich Re, Swiss Re
Extreme scenario at 100% solvency ratio shows: Respective economic loss would by far exceed the reinsurance industry loss.

- Assuming similar solvency ratios\(^1\) for the rest of the industry and using numbers on total industry capital\(^2\), it would take a loss to the reinsurance industry of $\sim 266.1$ bn. to create such a scenario that reduces industry capital to a 100% solvency ratio level.

- In contrast to these already very large numbers, the estimated total economic loss from such a series of extreme events is likely to be close to $1,986$ bn. (for comparison again: the economic loss from Hurricane Katrina was $\sim 125$ bn.).

- All of the Great Natural Catastrophes that have occurred World-wide from 1950 – 2010 amount to $2,100$ bn. (adjusted to 2010 values), which is about the size of loss from a series of events occurring in a single year that would be needed to bring industry capital down to a 100% solvency ratio.

- The respective total economic loss of this extreme scenario would by far exceed the reinsurance industry loss. Moreover at a 100% solvency ratio, the reinsurance industry would not see widespread default as the existing capital base and reserves would be sufficient to pay the claims.

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1) clearly a simplifying assumption, as solvency ratios differ between reinsurers; 2) taken from Aon Benfield’s estimate that global reinsurance capital is $440$ bn.

Source: RAA Analysis Based on Underlying Assumptions Provided by a Munich Re and Swiss Re Analysis
Great natural catastrophes worldwide 1950-2010

The total economic losses used in the global stress test are greater than all of the great natural catastrophes worldwide between 1950-2010.

Total Economic Loss of $2,100 Billion
(Adjusted to 2010 Values)

- $1,670 Billion (80%)
- $430 Billion (20%)

Source: Munich Re Nat Cat SERVICE, As of January 2011
Stress Test Scenario:
40% Solvency Ratio
### Extreme Stress Test Scenario Analysis

<table>
<thead>
<tr>
<th>Solvency Ratio</th>
<th>Swiss Re / Munich Re Combined</th>
<th>Global Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>253%</td>
<td>33.7</td>
<td>440.0</td>
</tr>
<tr>
<td>100%</td>
<td>13.3</td>
<td>173.9</td>
</tr>
<tr>
<td>40%</td>
<td>5.3</td>
<td>69.6</td>
</tr>
</tbody>
</table>

| Implied Cuml. Loss @ 100% | 20.4                          | 266.1           |
| Implied Cuml. Loss @ 40%  | 28.4                          | 370.4           |

### Economic Loss Scenarios Needed to Reduce Industry Capital to 100% of Solvency Ratio

<table>
<thead>
<tr>
<th>Example Type of Events</th>
<th>Global Re Loss</th>
<th>Global Economic Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reins Loss = 20% of Economic Loss</td>
<td>102.0</td>
<td>1,330.4</td>
</tr>
<tr>
<td>Hurricanes (U.S. /Developed Economies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reins Loss = 13.4% of Economic Loss</td>
<td>152.2</td>
<td>1,985.7</td>
</tr>
<tr>
<td>Mix of Global Events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reins Loss = 5.5% of Economic Loss</td>
<td>370.8</td>
<td>4,837.9</td>
</tr>
<tr>
<td>Earthquake/Flood w/low take-up rate</td>
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</tbody>
</table>

### Economic Loss Scenarios Needed to Reduce Industry Capital to 40% of Solvency Ratio

<table>
<thead>
<tr>
<th>Example Type of Events</th>
<th>Global Re Loss</th>
<th>Global Economic Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reins Loss = 20% of Economic Loss</td>
<td>142.0</td>
<td>1,852.2</td>
</tr>
<tr>
<td>Hurricanes (U.S. /Developed Economies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reins Loss = 13.4% of Economic Loss</td>
<td>211.9</td>
<td>2,764.4</td>
</tr>
<tr>
<td>Mix of Global Events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reins Loss = 5.5% of Economic Loss</td>
<td>516.2</td>
<td>6,735.2</td>
</tr>
<tr>
<td>Earthquake/Flood w/low take-up rate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Extreme scenario at 40% solvency ratio shows: Respective economic loss would by far exceed the reinsurance industry loss.

- Assuming similar solvency ratios\(^1\) for the rest of the industry and using numbers on total industry capital\(^2\), it would take a loss to the reinsurance industry of $\sim370.4\text{ bn.}$ to create such a scenario.

- In contrast to these already very large numbers, the estimated total economic loss from such a series of extreme events is likely to be close to $\$2,764\text{ bn.}$

- For comparison, a loss of $\$2,800\text{ bn.}$ equates to nearly twice the amount of economic losses from all hurricanes and earthquakes that occurred in the U.S. between 1900 and 2005 based on normalized loss statistics as published in studies by Dr. Roger Pielke—University of Colorado.

The respective total economic loss of this extreme scenario would by far exceed the reinsurance industry loss. Moreover the reinsurance industry's loss would largely be paid given their present $\$440\text{ bn.}$ in capital.

1) clearly a simplifying assumption, as solvency ratios differ between reinsurers; 2) taken from Aon Benfield's estimate that global reinsurance capital is $\$440\text{ bn.}$

Source: RAA Analysis Based on Underlying Assumptions Provided by a Munich Re and Swiss Re Analysis
Economic losses (not reinsurance losses) are the true source of systemic risk following extreme loss events.

Stress Scenario at 100% Solvency Ratio

- Economic Loss: 1,986
- Paid By Economic Reinsurers: 266

Stress Scenario at 40% Solvency Ratio

- Economic Loss: 2,764
- Paid By Economic Reinsurers: 370
U.S. Financial Institutions Impairment History and Implications for P&C Reinsurance Systemic Risk
Insurance impairments attributed to reinsurance as the cause of failure are historically insignificant.


- Deficient Loss Reserves/Inadequate Pricing: 40.3%
- Rapid Growth: 13.6%
- Catastrophe Losses: 7.8%
- Alleged Fraud: 7.1%
- Affiliate Impairment: 7.8%
- Investment Problems (Overstatement of Assets): 7.3%
- Misc.: 4.0%
- Sig. Change in Business: 3.6%
- Reinsurance Cause of Failure

Insurance impairments are insignificant compared to bank impairments in past crises and over several economic cycles.
Insurance impairments attributed to reinsurance failure are insignificant over the same period.

Adjusted to 2010 Dollars

Reinsurance failure is not a significant cause of insurance impairment and pales in comparison to the systemic risk in the banking industry. - View 1

Total Assets of FDIC Insured Failed Institutions Compared to P&C Insurer Impairments 1969-2010

- Impaired FDIC Insured Institutions: $5,630 Billion (98%)
- Impaired P&C Insurers: $115 Billion (2%)
- Reinsurance Cause of Failure: $113 Billion (98%)
- $1.8 Billion (2%)
Reinsurance failure is not a significant cause of insurance impairment and pales in comparison to the systemic risk in the banking industry. - View 2

FDIC Insured Failed Institutions Compared to P&C Insurer Impairments 1969-2010

Adjusted to 2010 Dollars

- Total Assets of Impaired FDIC Insured Institutions: 5,630 billions
- Total Deposits of Impaired FDIC Insured Institutions: 3,210 billions
- Impaired P&C Insurers' Total Assets: 115 billions
- Total Assets of Impaired P&C Insurers (Reinsurance Cause of Failure): 1.8 billions

Billions

- Total Assets of Impaired FDIC Insured Institutions
- Total Deposits of Impaired FDIC Insured Institutions
- Impaired P&C Insurers' Total Assets
- Total Assets of Impaired P&C Insurers (Reinsurance Cause of Failure)
Reinsurance failure is not a significant cause of insurance impairment and pales in comparison to the systemic risk in the banking industry. - View 3

Total Assets of FDIC Insured Failed Institutions Compared to P&C Insurer Impairments 1969-2010
Adjusted to 2010 Dollars

- Impaired FDIC Insured Institutions: $5,630 Billion
- Impaired P&C Insurers: $115 Billion
- Reinsurance Cause of Failure: $1.8 Billion
Reinsurance Association of America
www.reinsurance.org

Joseph B. Sieverling
sieverling@reinsurance.org
Reinsurance: not a systemic risk to the economy

by Joseph Sieverling and Scott Williamson, Reinsurance Association of America

Given the recent, and some would argue, ongoing crisis in the world’s financial markets, there is justifiable scrutiny of the financial services industry as regulatory authorities from around the world seek to identify and regulate systemically-risky components of the global economy.

Evaluation of systemic risk

The real estate bubble and related banking and investment instruments (securitisation of mortgage backed securities, leverage, etc.) were clearly major causes of the recent crisis. Now global financial regulators are looking more broadly than this recent economic meltdown in an effort to identify and mitigate systemic risk in order to prevent another crisis, or at the very least, limit its impact.

Federal Reserve Board Chairman Ben Bernanke has described systemic risk as "the possibility that the failure of a large interconnected firm could lead to a breakdown in the wider financial system; systemic risks threaten the stability of the financial system as a whole and consequently the broader economy, not just that of one or two institutions." The Financial Stability Board (FSB) and the International Association of Insurance Supervisors (IAIS) utilise four primary criteria to evaluate whether a non-bank financial institution or industry poses a systemic risk. Those criteria are size, interconnectedness, substitutability and time/liquidity. Based on an evaluation of these criteria, it is obvious that reinsurance, does not pose a material systemic risk to the financial system or to the overall economy.

Relative to the asset base of the industry reinsurers pose no risk to the financial sector

The combined global reinsurance industry is not large enough to pose a systemic risk to the US economy. For example, the US property/casualty industry's net credit exposure to uncollateralised reinsurance is only US$96bn, about the size of the market cap of pharmaceutical giant Merck which is but one component of the S&P 500 index. This US$96bn exposure to uncollateralised reinsurance recoverable is spread among hundreds of reinsurance groups around the globe. Additionally, each US insurer's share of the US$96bn is just a fraction of their respective assets and surplus. When compared to the US GDP of US$14.7 trillion, or the total assets of the FDIC-insured banks of US$13.3 trillion, or even the market cap of the S&P 500 US$11.9 trillion, it is clear the reinsurance industry does not have the size to pose a systemic risk to the economy.

Figure 1: Evaluating systemic risk - size

<table>
<thead>
<tr>
<th>Reinsurance recoverables are not systemic risk amounts relative to US financial markets or economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>US GDP</td>
</tr>
<tr>
<td>US FDIC insured banks - total assets</td>
</tr>
<tr>
<td>S&amp;P 500 market cap</td>
</tr>
<tr>
<td>US P&amp;C Industry total assets</td>
</tr>
<tr>
<td>US P&amp;C industry capital &amp; surplus</td>
</tr>
<tr>
<td>Global reinsurance industry capital &amp; surplus</td>
</tr>
<tr>
<td>Merck &amp; Co market cap</td>
</tr>
<tr>
<td>US P&amp;C net-net recoverable from reinsurers</td>
</tr>
</tbody>
</table>

Source: Reinsurance Association of America
While the industry is interconnected, this interconnectedness is limited

Reinsurance is not highly concentrated. Through the use of reinsurance, the risk of loss is spread and diversified around the world. As ‘insurers of insurers’, reinsurers are connected to the insurance industry, however this interconnectedness is unlikely to create or increase contagion risk. Contagion risk is increased when leverage is employed. Reinsurers, on the other hand, are in the business of risk transfer—diversifying the geographic concentration and line of business concentration of the ceding company thereby providing a stabilising effect.

The major reinsurance groups are highly rated, often having higher ratings than the insurers that cede insurance risk to them. In such cases, the insurance companies actually improve their credit worthiness, or claims paying ability and overall risk profile, by utilising reinsurance. Essentially, reinsurance provides a means for insurers not only to reduce volatility and obtain risk protection, but transform otherwise retained underwriting risk into a lesser credit risk.

Reinsurance is among several risk transfer options

In addition to purchasing reinsurance, insurers utilise other tools for risk mitigation. One such tool is to simply retain the business they write. US property/casualty companies actually cede only 20% of the business they insure, and retain 80% of the business. The 20% is spread among numerous reinsurance groups, the majority of whom are very highly rated.

Another source of risk capital is the capacity available from the capital markets. Significant capital market capacity has historically augmented traditional reinsurance capacity following large loss events such as 9/11, Hurricane Andrew, and Hurricanes Katrina, Rita and Wilma. In the past, this capital has flowed into the industry within a short time frame; usually within a year to 18 months, and is in place well before all of the claims from these major events are paid. These capital providers define and control their

![Figure 2: Evaluating systemic risk - interconnectedness](image)

**Figure 2: Evaluating systemic risk - interconnectedness**

![Figure 3: Evaluating systemic risk - substitutability](image)

**Figure 3: Evaluating systemic risk - substitutability**

Capital is quickly replaced following significant events. Alternative forms of capital have become more prevalent.
exposure to insurance risk and improve their overall risk profile by diversification into the reinsurance market which is uncorrelated with other financial risks.

Capital market options for alternative risk transfer include catastrophe bonds and side cars and other instruments that often offer a relatively high rate of return, limited downside and uncorrelated risk to improve investment efficiency.

Reinsurance has a positive time and liquidity character

The nature of the (re)insurance business model is fundamentally different from other financial institutions and is not a source of systemic risk. Insurers and reinsurers have an inverted production cycle in that obligations are pre-funded through receipt of (re)insurance premiums at the inception of the client relationship.

A major difference between the risk profiles of banks and (re)insurers has to do with timing and the illiquidity of (re)insurance obligations. Bank deposits and other investment vehicles are ‘callable’, which can contribute to a ‘run on the bank scenario’ during times of crisis. This is not the case with insurance or reinsurance. Reinsurers’ liabilities are not liquid. Instead, they are owed only when there is an insured loss event (something not usually correlated with stock market declines or economic cycles). Even then, (re)insurance obligations are not paid immediately. For example, in the case of the most short-tailed catastrophe coverage, reinsurance payouts typically do not reach 50% of the ultimate loss for nine months. And historically 90% of losses are not paid until three years following a catastrophe event. The time that is necessary to measure, adjust and settle claims gives reinsurers and the reinsurance market ample opportunity to recover and to obtain additional capital.

To illustrate this, recall we noted at the outset of this paper that the US property/casualty industry’s exposure to uncollateralised reinsurance is just US$96bn – of that US$96bn, only US$14bn of this amount is currently payable. The bulk of the remaining balance is estimated losses or incurred but not reported (IBNR) obligations that will be paid out only as these losses emerge over a number of years.

Conclusion

The (re)insurance business model is substantially different than banks and other non-bank financial institutions. Given the industry’s small size in relation to the financial markets, its lack of significant interconnectedness, the substantial alternatives for substitute capacity and the illiquid nature of its obligations, it cannot reasonably be considered a contributor to systemic risk in the US or global economies.

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Systemic Risk Discussion – Reinsurance perspective
Follow Up to 18 February 2011 presentation to the IAIS

Reinsurance Subcommittee
1 February 2012

Philippe Brahmin, Head Governmental Affairs and Sustainability, Swiss Re
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Agenda

1. Market concentration in reinsurance
2. Post-catastrophe pricing behaviour
3. Interconnectedness
4. Failure and resolution of a large global reinsurer
5. Conclusion
6. Appendix
Around 5% of global primary insurance premiums ceded to reinsurers

Global primary insurance premiums vs. reinsurance premiums (bn. USD), 2010

Non-life reinsurance premiums by country (% of World), 2010

Reinsurance in world perspective

Top ten reinsurers based on net premiums earned 2010 (bn. USD)

- Munich Re* 29.3
- Swiss Re 19.4
- Berkshire Hathaway* 14.7
- Hannover Re 13.7
- Lloyd’s* 9.8
- SCOR 8.1
- RGA 6.7
- PartnerRe 4.7
- Everest Re 3.9
- Trans Re 3.9

Top ten reinsurers based on net premiums earned 2010 (% of total net premiums)

- Munich Re* 28.1%
- Swiss Re 12.2%
- Berkshire Hathaway* 9.3%
- Hannover Re 8.6%
- Lloyd’s* 6.2%
- SCOR 5.1%
- RGA 4.2%
- PartnerRe 3.9%
- Everest Re 3.0%
- Trans Re 2.5%
- Other 2.5%

Source: Swiss Re sigma (primary & reinsurance business), Munich Re
Insurance risk is spread broadly – example USA

Example US P&C

Top US P&C Groups, 3rd Party Reinsurance Net-Net Recoverables Concentration

1 Net net recoverables definition: Reinsurance recoverables net of amounts owed to reinsurers and net of other collateral (LOCs, funds held, trust funds, …)

Source: RAA

Reinsurance in one local market perspective – example Canada

Canadian P&C insurance and reinsurance premiums (in % GWP), 2010

1 Reinsurance assumed from non-affiliates in % of total reinsurance ceded to non-affiliates

Source: MSA Researcher Online, Swiss Re
Reinsurance in another local market perspective – example Australia

Australian P&C insurance and reinsurance premiums (in % GWP)\(^1\), 2010

- Munich Re
- Swiss Re
- Hannover Re
- Gen Re
- SCOR
- Berkley
- Tokio Millennium Re
- TRC
- New India
- Other

| Source | APRA, Swiss Re |

\(^1\) Reinsurance assumed from non-affiliates in % of total reinsurance ceded to non-affiliates.

Competition in the reinsurance sector is high

Cumulative gross written premium

- Reinsurance sector remains strongly diversified with low rates of concentration
- No reinsurer has a monopoly in any material line of business
- No single institution plays a central market role such as clearing or acting as securities exchange

1. Based on the Top 35 global reinsurers (gross written premium 2008: $536 BN) and the total gross written reinsurance premium according to the AM Best Global Reinsurance Market Report 2009 ($519 BN) which is only considering reinsurers writing reinsurance in excess of $800 MM

2. Based on the Top 25 U.S. reinsurers (gross written premium 2008: $37.7 BN) of total U.S. gross written premium of $33.7 BN

Source: AM Best, IAIS Global Reinsurance Market Report 2009
Summary – Market concentration in reinsurance

- The reinsurance market is just a fraction of the primary insurance market
- Market concentration is low – on a global level, in the largest reinsurance market and in smaller local markets around the world
- No reinsurer has a monopoly in any material line of business

<table>
<thead>
<tr>
<th>Systemic Risk due to Market Concentration?</th>
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<tbody>
<tr>
<td>„Disruption to the flow of financial services“?</td>
</tr>
<tr>
<td>Yes No</td>
</tr>
<tr>
<td>„Serious negative consequences for the real economy“?</td>
</tr>
<tr>
<td>Yes No</td>
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Major nat cat events of the past 20 years

Global nat cat and man-made losses, 1990-2011
(mn USD, 2011 values)

- Hurricanes Katrina, Rita, Wilma
- Earthquake Kobe
- 9/11
- Hurricane Andrew
- Australia floods, Tohoku quake, Christchurch quake, Thailand floods

Source: Swiss Re

Capital inflow is one of the major drivers of reinsurance rates

New capital flows into reinsurance industry and global property cat rates

- Hurricanes Katrina, Rita, Wilma
- Australia floods, Tohoku quake, Christchurch quake, Thailand floods

Sources: Thomson, Guy Carpenter, AON Benfield, Deganis, Oliver Wyman analysis, Munich Re Risk Trading Unit
Local cat-events rarely cause price spikes in unaffected regions

Broker view of rate changes in the market

Property Cat Rol index, 1990 = 100

Australia floods, Tohoku quake, Christchurch quake, Thailand floods


Global historical P&C premium growth shows that the cycle is stronger (up-and down) in the re- than the primary insurance market

Global real growth P&C re- and insurance, 1990-2011e

Source: Munich Re Economic Research
How much of the reinsurance price increases affects the real economy via the primary insurance channel?

Historical example: What happened after Hurricanes Katrina, Rita, Wilma; Fall 2005?

<table>
<thead>
<tr>
<th>US reinsurance rates (renewals 1/1/2006 and overall 2006)</th>
<th>US primary insurance rates (Q1 and Q2-2006)</th>
<th>Real economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Substantial price increases for property cat reinsurance business</td>
<td>- Modest effect on US primary insurance rates</td>
<td>- No disruption of financial markets or real economy</td>
</tr>
<tr>
<td>- Per 1/1/2006 renewals US reinsurance property cat rates increased for...</td>
<td>- Most commercial lines had on average further rate declines</td>
<td>- Insurance premium is in most industries only a low percentage of total expenses</td>
</tr>
<tr>
<td>- ...loss hit accounts +30% to +100%</td>
<td>- Only commercial property rates increased in two quarters after Hurricane Katrina</td>
<td></td>
</tr>
<tr>
<td>- ...loss free accounts +5% to +10%</td>
<td>- Q1-2006: +2%</td>
<td>- Benefit for real economy: foreign (re)insurers made more than 60% of Wilma, Rita and Katrina total loss payments of USD 59bn</td>
</tr>
<tr>
<td>- The Guy Carpenter property cat rate on line index increased from '05 to '06...</td>
<td>- Q2-2006: +3%</td>
<td></td>
</tr>
<tr>
<td>- US +76%</td>
<td>- On average (i.e. over all lines) commercial rates decreased further between Q3-2005 and Q3-2006</td>
<td></td>
</tr>
<tr>
<td>- Mexico +129%</td>
<td>- Households: Additional effect of regulation on possibility of rate increases</td>
<td></td>
</tr>
<tr>
<td>- Rest of World +2%</td>
<td>- The world catastrophe reinsurance market, The Council of Insurance Agents and Brokers, Munich Re Economic Research, Sigma 5/2003</td>
<td></td>
</tr>
<tr>
<td>- ...global +32%</td>
<td>- Summary - Post-catastrophe pricing behaviour</td>
<td></td>
</tr>
</tbody>
</table>

Summary - Post-catastrophe pricing behaviour

- major nat cat events of the last 20 years
- Capital inflow is one of the major drivers of reinsurance rates
- Global historical P&C premium growth shows that the cycle is stronger (up and down) in the real than the primary insurance market
- This can also be seen if looked at historical rate developments in primary insurance and reinsurance, e.g. after Hurricane Katrina/ Rita/ Wilma (2005)

Systemic Risk due to Post-catastrophe pricing behaviour?

- "Disruption to the flow of financial services"?
  - Yes [ ] No [X]

- "Serious negative consequences for the real economy"?
  - Yes [ ] No [X]
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Various channels looked at in detail in this analysis

- Channel 1: Primary Insurance
- Channel 2: Reinsurance
- Channel 3: Other financial institutions

Real Economy
Insurance impairments attributed to reinsurance as the cause of failure are historically insignificant

Reinsurance failure is not a significant cause of insurance impairment and pales in comparison to the systemic risk in the banking industry

Total Assets of FDIC Insured Failed Institutions Compared to P&C Insurer Impairments 1969-2010

Adjusted to 2010 Dollars

Source: RAA

Scenario analysis: A large reinsurer's failure would have only a modest effect on shareholders equity of large primary insurers

On average, gross reinsurance recoverables are 27% of shareholder equity for a sample of 6 top primary insurers.

-4%-points

- Given an estimated share of wallet of the biggest reinsurer of 20%...
- and a loss given default ratio of 70%...
- its default would reduce shareholders equity by 3.8%

Stress-testing the scenario: If 2011 Nat cats coincided with 2008 capital market crash, this would lead to a 30% reduction in shareholders equity plus a loss of 4% due to a large reinsurer's failure

Creating a stress scenario on both sides of the balance sheet:
Development of 6 top primary insurers' capital positions on average [%]

-31%-points
From start to end, 2008 shareholders equity was reduced by 29% - mainly due to financial market stress

-4%-points
Even an additional reinsurance failure does not lead to a systematic failure of all large primary insurers
Summary – Contagion of a primary insurer through a reinsurer’s failure

- Historically, reinsurance failure is a minor contributor to primary insurance failures.
- Even after stress on asset and liability side of primary insurers' balance sheets, a reinsurance failure reduces shareholders' equity for primary insurers by just a small margin.
- Substitutability of reinsurance is given due to low barriers of entry.

Systemic Risk due to contagion of primary insurer?

- “Disruption to the flow of financial services”?
- “Serious negative consequences for the real economy”?

Various channels looked at in detail in this analysis

Source: Munich Re, Swiss Re
Retro-Premiums are a minor share of total insurance market

Global primary insurance vs. reinsurance\(^1\) and retrocession premiums\(^2\) (BN USD, 2010)

<table>
<thead>
<tr>
<th></th>
<th>Non-Life</th>
<th>Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance</td>
<td>4'338</td>
<td>1'818</td>
</tr>
<tr>
<td>Reinsurance</td>
<td>2'520</td>
<td>200</td>
</tr>
<tr>
<td>Retrocession</td>
<td>25</td>
<td>8%</td>
</tr>
</tbody>
</table>

Source: Swiss Re Economic Research & Consulting.

The London market had a historical retro-spiral case, but no systemic risk event

Reinsurance/retrocession spiral in the London market (example LMX spiral)

**What happened?**

- In the late 1980's, some firms in the London market underwrote their retroceded risks without being fully aware of their potential exposures.
- Significant cat losses were incurred by a few specialist excess of loss firms whose losses spiralled up and out of the top of their reinsurance programmes.
- Thus, instead of spreading the risk around the market, it was actually being concentrated within a small number of syndicates.

**Systemic risk event?**

**NO, because**

- ... eventually, all claims were paid
- ... regulatory rules and business practices are now in place to monitor and prevent the emergence of any such concentrations of risk spirals thus much less likely
- ... the overall proportion of retrocession is too small to cause a large multiplier effect that would impact the broader (re)insurance market.

Past spirals did have effects on the companies involved but did not cause a systemic risk event!
Reinsurers’ failures have never been due to another reinsurer’s failure in the last 15 years in the US


- Overstated assets
- Alleged fraud
- Affiliate failure
- Catastrophe losses
- Inadequate pricing/deficient loss reserves (DLR)

- Similar to primary insurance writers, inadequate pricing or deficient loss reserves are the leading cause of reinsurer insolvency.
- At this point, the similarity ends. Catastrophes represent the second largest cause of reinsurer insolvency, accounting for 16.2 percent of insolvencies, compared to 7.7 percent for primary writers.

* excl. Bermuda and offshore reinsurers
Source: AM Best, PAC/ICC (Nov 2008)

Summary – Contagion of a reinsurer through a reinsurer’s failure

Systemic Risk due to contagion of a reinsurer?

- "Disruption to the flow of financial services"?

Yes ☐ No ☒

- "Serious negative consequences for the real economy"?

Yes ☐ No ☒

Retro-Premiums are a minor share of total insurance market

The London market had a historical retro-spiral case, but no systemic risk event

Reinsurers’ failures did never occur due to an other reinsurer’s failure in the last 15 years in the US
Various channels looked at in detail in this analysis

Channel 2

Reinsurance

Primary Insurance

Channel 1

Real Economy

Channel 3

Other financial institutions

No impact on bank financing to be expected

- Short-Term Liabilities
- Short-Term Borrowing
- Securities sold with Repo
- Total Equity
- Deposits
- Other Long-Term Liabilities
- Long-Term Borrowing

Total Liabilities and Equity Top 50 global banks, 31.12.2009, bn EUR

Total insurance investments top 50 global insurers, 31.12.2009, bn EUR

Total investments into banks via bonds and cash, top 50 global insurers, estimate

Total investments into banks via bonds and cash, MR and SR

- Investments of reinsurers into banks are not significant for the refinancing of banks
- In addition to the low size of reinsurers – the most critical refinancing source of banks is the interbanking market, where reinsurers are not active!

1 Estimates based on information (as far as published) for selected large insurer of the Top 50 List - This percentage was used to estimate the share for the whole Top 50
Source: Bloomberg, Company information, Munich Re Economic Research
Bank channel: A hypothetical reinsurance failure would cause only modest effects on the banking sector

Credit exposures
- There is no indication for bank exposures to reinsurers being more risky or exhibiting higher correlation with the bank's other credit exposures
- Banks' loan and overdraft exposure to reinsurers is insignificant
- Credit exposures are largely contingent in nature, arising mostly through letters of credit, and are mostly secured
  - Compared to liquid assets, the amount of outstanding letters of credit is rather small
  - Reinsurers' liquidity is therefore sufficient to meet
    - the insurance claims guaranteed by the letters of credit
    - the reimbursement obligation in case the letters of credit are drawn

Holding company structures
- Potential risks within financial conglomerates only assume systemic proportions if...
  - a commercial bank is involved...
  - that is sufficiently big to trigger a bank run
- No holding company structure combines a reinsurer and a bank
  - In a hypothetical scenario of a reinsurance failure, a loss in confidence in the reinsurer does not automatically spread to other affiliates
  - There are no holding company structures supporting reputational contagion

Capital market channel: reinsurers hold only a negligible amount of markets' total debt and equity investments

<table>
<thead>
<tr>
<th>Aggregate capital market positions of reinsurers 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>(bn. USD)</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Equities</td>
</tr>
<tr>
<td>Bonds</td>
</tr>
</tbody>
</table>

- Reinsurers hold only a negligible fraction of the markets' total equity and debt investments
- Even if their portfolio were to be liquidated rapidly, the impact on capital markets would be very small

Source: company reports, World Federation of Exchanges, BIS
**Capital market channel: ILS exposures relatively small**

- Since 1999, the ILS market has increased by 640%
- Volume is still small compared to traditional insurance premiums
- Insurers' exposure to ILS as investors is fading: of new issuances in 2010, only 1% went to insurers
- As proceeds are generally used as collateral for potential losses, ILS do not represent a liquidity risk

2010 ILS volumes in relation to traditional insurance:
- ILS represent 0.055% of global insurers' invested assets (USD 25,000 bn)
- ILS issuance (4.42 bn in 2010) was equivalent to 0.1% of global insurance premium volume (USD 4,338 bn in 2010)

**Summary – Contagion of other financial institutions through a reinsurer’s failure**

- Reinsurers are negligible players on the international capital markets
- They are not active in the main refinancing channel for banks – the interbanking market
- They also are not a meaningful credit risk to banks
- ILS exposures are of no importance to capital markets

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<th>Systemic Risk due to contagion of other financial institutions?</th>
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<table>
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The failure of a large global reinsurer can happen but is highly unlikely

- **Scenario Analysis** - What would have happened to a global leading reinsurer if 2008 capital market stress would have met 2011 catastrophes?

  - In the scenario, the available and required capital base is considered and stressed via capital market and nat cat events.

  - The leading reinsurer is in our case created by the simple average of Munich Re and Swiss Re (the global TOP2 reinsurers).

  - For the analysis published capital data of 2008 is used and merged with major loss estimates of 2011.
Capital depletion would be significant but not fatal to the global reinsurer under such scenario

Creating a stress scenario on both sides of the balance sheet -
Development of Munich Re's and Swiss Re's capital positions on average [bn EUR]

Still room for major losses more than two and a half times 2011

Bankruptcies: In history reinsurance bankruptcies did occur without any systemic contagion

Number and premium volume of bankrupt reinsurers (run-off excluded) since 1980*

* No claim to completeness given limited availability of comprehensive information; reinsurers in run-off or restructuring have not been included.
Source: Swiss Re, Munich Re
Run-offs: Reinsurance run-offs occur rarely and without any systemic contagion

Prominent examples since 2000

<table>
<thead>
<tr>
<th>Company description</th>
<th>Reasons of run-off</th>
<th>Systemic Risk?</th>
</tr>
</thead>
</table>
| **Gerling Re** (run-off in 2002)
  - German reinsurer
  - Until 2002 number six among international reinsurers | 9/11 losses  
  - Fall of capital markets  
  - Asbestos and environmental damage claims |  
  - No disruption to the flow of financial markets
  - No serious negative consequences for the real economy |
| **Fortress Re** (run-off in 2001)
  - American aviation reinsurance agency
  - Rather small volume | 9/11 losses  
  - Sued by Sompo and other insurance companies |  
| **Scottish Re** (run-off in 2008)
  - Reinsurer of life insurance, annuities and annuity-type products | Problems with claims rates and investment performance |  

1. Gerling-Konzern Globale Rückversicherungs-AG (now GLOBAL Re)
Source: Swiss Re, Munich Re

A reinsurer fails

- A reinsurer is a counterparty risk for the insurer
  - The risk of insolvency, similar to probability of default
  - The recoverable part of the reinsurance claim, similar to loss given default
  - Unwillingness to pay → legal dispute (not dealt with in this presentation)

- Two main failure types
  - Voluntarily enters run-off, i.e., ceases to write new business and winds down slowly as claims are paid
  - Becomes insolvent, its liabilities are greater than its assets

- Voluntary run-off is more orderly, but still can cause disputes
  - To maximize returns to shareholders, companies in run-off have an incentive to delay claim payments or commute treaties.

Source: Swiss Re
A reinsurer fails

- When a re/insurer fails, the company generally still has substantial assets relative to its liabilities, so the failure is not disruptive to the industry
  - Reinsurers have no immediate need to pay out large amounts to clients even for losses already incurred
  - Thus, there are no "Runs" on reinsurance company assets
- Key mechanism for settling with a reinsurer is a "commutation"
- A commutation allows the insurance company to receive a cash settlement to invest for the payment of future claims. With the commutation, the reinsurer's commitment ends. There may be a "haircut" involved.
  - Since these are all private settlements, the average haircut is not known
  - But, both parties agree to the commutation so the haircut should depend on the relative strength of the reinsurer – its assets relative to its liabilities

Reinsurance counterparty credit risks are managed with advanced risk techniques

- Reinsurance industry has strong credit profile and resilience, experiencing extreme market events in the past
- Assessing reinsurance counterparties to be based on fundamental credit analysis and market indicators
  - CDS markets are volatile and do not adequately correlate to fundamental credit quality
- Counterparty risk assessment to be based on "best estimate", taking into account probability of default, average loss given default and multiple factors such as credit spread, rating, financial reporting, qualitative data
  - In Europe, Solvency II represents a real improvement in assessing counterparty credit risk
Reinsurers' balance sheets are built-in resilience to shocks

Reinsurance industry*, 9 months 2009

Assets matched to liabilities, often held to maturity

* Based on a sample of 27 leading reinsurance companies, excl. Berkshire Hathaway

Matching between assets and liabilities is key

Source: Swiss Re, Economic Research & Consulting

Timing – In case of insolvency or large claims, there is no urgent pressure on reinsurers

Timing of World Trade Center insurance claims payments (%)

Estimated US Insurers' payments and reserves for asbestos, 1994-2008 (USD BN)

Even in case of failure, impact is stretched over time as...
- reinsurers have no immediate need to pay out large amounts to clients...
- even for losses already incurred

⇒ No „Runs“ on reinsurance companies

Source: RAA (Catastrophe Loss Development Study), Insurance Information Institute, AM Best, Oliver Wyman Analysis
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Conclusions

- **Low market concentration and dynamic competition**
  - The reinsurance market is just a fraction of the primary insurance market
  - Market concentration is low – on a global level, in the largest reinsurance market and in smaller local markets
  - No global reinsurer has a monopoly in any material line of business

- **Post-catastrophe pricing behaviour**
  - In the last 20 years major nat cat events occurred
  - Capital inflow is one of the major drivers of reinsurance rates
  - P&C cycle is stronger (up- and downward) in the reinsurance market than in the primary market

- **Impact of a reinsurers failure on primary insurers is not systemic**
  - Historically, reinsurance failure minor contributor to primary insurance failures
  - Even after stress on asset and liability side of primary insurers balance sheet, a reinsurance failure reduces shareholders equity for primary insurers by just a small margin
  - Substitutability of reinsurance is given due to low barriers of entry

- **Impact of a reinsurer's failure on reinsurers is not systemic**
  - Retro-Premiums are a minor share of total insurance market
  - The London market had a historical retro-spiral case, but no systemic risk event
  - Reinsurers' failures did never occur due to an other reinsurer's failure in the last 15 years in the US

- **Impact of a reinsurers failure on other financial institutions is not systemic**
  - Reinsurers are negligible players on the international capital markets
  - They are not active in the main refinancing channel for banks – the inter-banking market
  - They also are no meaningful credit risk to banks
  - ILS exposures are of no importance to capital markets
One example for a bigger reinsurer in run-off is Gerling Re (Sixth largest reinsurer at the time)

What happened?
- Until 2002, the then Gerling-Konzern Globale Rückversicherungs-AG (now GLOBAL Re) was number six among international reinsurers and employed 1,200 people around the world.
- In 2002, it was decided to discontinue writing new non-life reinsurance business and to start a run-off of existing portfolios.
- Four factors triggered this decision:
  - 9/11 resulted in a loss exceeding mn. EUR 600.
  - the fall of capital markets resulted in write-offs amounting to more than bn. EUR 1.
  - continuous asbestos and environmental damage claims of unexpected size stressed the US companies.
  - Constitution Re, the US subsidiary, did not meet profit targets.

Systemic risk event?
No, because:
- ... the strategic decision to start a run-off was taken before the company was insolvent.
- ... the entire company was restructured to quickly adapt to the new situation.
- ... the run-off is successful; last major relationship commuted in 2009, reducing the loss reserves of the group from EUR 9.5 bn in 2001 to EUR 423 mn in 2009.

Noteworthy to mention...
- Moved from EUR 100 net deficit in 2002 to EUR 285 equity surplus in 2009
- since 2006, GLOBAL Re has acted as a service provider and offers their far-reaching experience gained in one of the largest run-offs ever.

The run-off did have effects on the companies involved, but did not bring down another re/insurer and did not cause a systemic risk event.
Fortress Re: Inability to pay

What happened?
- Fortress Re was a privately held Managing General Agent (distributor) for three insurers, Nissan Fire and Marine (26%), Tasei Fire and Marine (26%) and Aioi Insurance Co. Ltd (48%).
- Fortress Re wrote the reinsurance business on aviation that the three pool members assumed.
- All four planes that went down on Sept. 11 were ultimately reinsured by the pool.
- Tasei became insolvent, but the others merged into Sompo Insurance Co.
- Factors triggered this decision:
  - USD 2.5 bn loss after 9/11
  - Fortress Re was sued by Sompo and ordered to pay USD 1.12 bn.
  - Fortress Re sued by various pool members for allegedly using accounting gimmicks to hide losses prior to 9/11

The case did have a significant effect on the business partners, leading to the failure of one of them

Systemic risk event?
No, because:
- Fairly small, but did cause another insurance company to go bankrupt
- Total insured losses from 9/11 were USD 23.1 bn (in 2010 dollars), Katrina was USD 72.3 bn. These were both very large events, but neither caused widespread reinsurance failure.

One example for a large life reinsurer in run-off is Scottish Re

What happened?
- In 2008, Scottish Re ceased writing new business and went into run-off.
- It had grown quickly, but it had problems with claims rates and investment performance.
- It was partially re-capitalized in 2007, but this was insufficient for it to convince its clients that it could continue to write new business, so it went into run-off. The re-capitalization was structured to gain ownership.

The run-off is not having any noteworthy impact on the insurance or reinsurance industries

Systemic risk event?
No, because:
- This company might have taken a long time to run-off, but it is winding down rapidly by selling blocks of business, eg to Hannover Re
- Nearly USD 13 bn in assets at end-2007, now down to USD 4 bn (Sept 2011)
- The run-off is proceeding in an orderly fashion.
- Net income in 2008 was negative, but it was positive in 2009 and 2010, but negative through first 9 months of 2011.
P&C prices in reinsurance markets are driven by demand and supply

Illustrative: How the reinsurance cycle works

In past years cycle hardening wasn’t strong as capital inflow happened too fast

Limited supply of aviation insurance because the 9/11 terror attack – cause was not missing capacity but temporarily uninsurability

Historical example: Temporary limitation in aviation cover after 11 September 2001

What happened?

- As a consequence of the 11 September 2001 attacks aviation insurers cancelled coverage of war hazards and granted new third-party liability cover only with an upper limit of USD 50 million per year. Premiums for hull coverage against war hazards rose by 500% or more
- Since leasing and other agreements as well as government regulations forbid airlines to fly with a third-party liability cover limited to USD 50 million, governments provided additional coverage
- Government coverage was only needed for a limited period

Systemic risk event?

NO, because

- the potential claims arising out of terrorist attacks suddenly rose sharply and became incalculable, putting the insurability of such risks (temporarily) into question
- the absence of insurance cover was only temporary
- insurance companies did not cause the crisis

Temporarily uninsurability equals not systemic risk
Besides the industry, also rating agency S&P argues against systemic riskiness of reinsurers

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).