

Think Tank Reinsurance

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Agenda

- Thesis
- Transformation which already occurred
- Transformational Event Spotting
- Wrap-up

Thesis:

Game, set and match...

transformational change is on its way

The risk taking industry faces numerous challenges of which a few carry the potential to become transformational events

Fait accompli

Transformation which already occurred

Facts from the past for the future



Hamburger Feuerkasse founded in 1676 claims to be the world's first insurance company.

The big fire (conflagration) event in Hamburg in 1842 combined with the limited diversification of Hamburger Feuerkasse required the State of Hamburg to rescue the insurer and lead into the set-up of a reinsurance company... Kölnische Rück.



Kölnische Rück founded 1846 claims to be the world's first international reinsurance company.

The big fire in Hamburg was most likely the first transformational event on record and many other followed:

- **Loss (liability) events**
 - Natural catastrophes... hurricanes, earthquakes, hail, flood
 - Man-made catastrophes... terror, conflagration
- **Investment (asset) events**
 - The blow-out of the new economy bubble in 2002/3
 - The financial crisis followed by the sovereign debt crisis 2008
- **Other events**
 - Competition, new technology, changes in legislation

Transformation never rings a bell

Transformational Event Spotting

A variety of transformational drivers were discussed ...

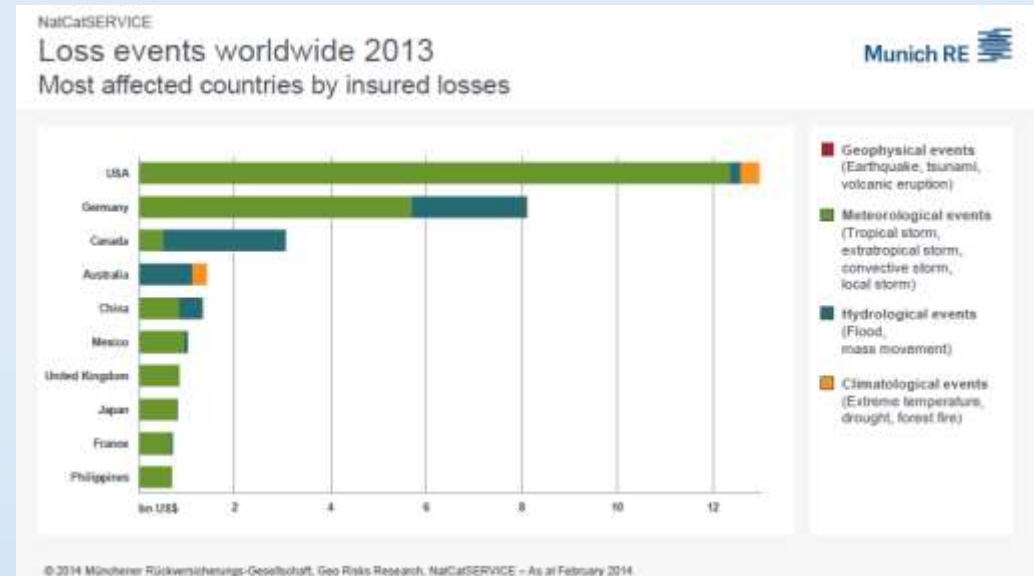
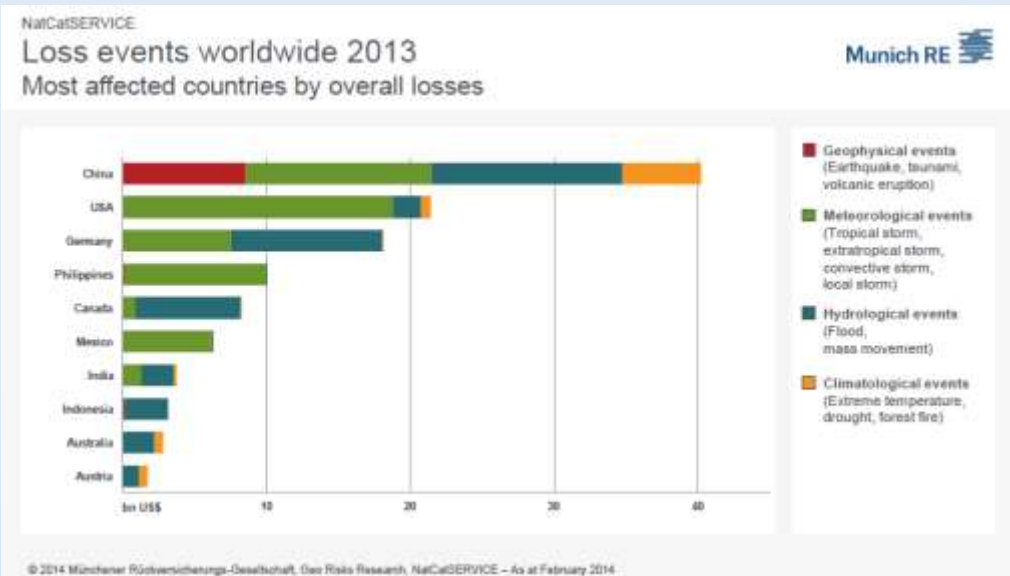
Transformational loss events

Insured loss ^{2M} (in USD m, indexed to 2013)	Victims ^{2M}	Date (start)	Event	Country
80373	1836	25.08.2005	Hurricane Katrina; storm surge, levee failure, damage to oil rigs	US, Gulf of Mexico, Bahamas, North Atlantic
37665	19135	11.03.2011	Earthquake (M _w 9.0) triggers tsunami; aftershocks	Japan
36890	237	24.10.2012	Hurricane Sandy; storm surge	US et al
27594	43	23.08.1992	Hurricane Andrew; floods	US, Bahamas
25664	2982	11.09.2001	Terror attack on WTC, Pentagon and other buildings	US
22857	61	17.01.1994	Northridge earthquake (M ^w 6.6)	US
22751	136	06.09.2008	Hurricane Ike; floods, offshore damage	US, Caribbean, Gulf of Mexico et al
17218	181	02.09.2004	Hurricane Ivan; damage to oil rigs	US, Caribbean, Barbados et al
16519	124	27.07.2011	Floods caused by heavy monsoon rains	Thailand
16142	815	22.02.2011	Earthquake (M _w 6.3), aftershocks	New Zealand
15570	35	19.10.2005	Hurricane Wilma; floods	US, Mexico, Jamaica, Haiti et al
12510	34	20.09.2005	Hurricane Rita; floods, damage to oil rigs	US, Gulf of Mexico, Cuba
11594	123	15.07.2012	Drought in the Corn Belt	US
10313	24	11.08.2004	Hurricane Charley; floods	US, Cuba, Jamaica et al
10031	51	27.09.1991	Typhoon Mitella/No. 19	Japan
8924	71	15.09.1989	Hurricane Hugo	US, Puerto Rico et al
8876	662	27.02.2010	Earthquake (M _w 8.8) triggers tsunami	Chile
8648	95	25.01.1990	Winter storm Daria	France, UK, Belgium, Netherlands et al
8426	110	25.12.1999	Winter storm Lothar	Switzerland, UK, France et al
7856	354	22.04.2011	Severe storms, tornadoes	United States (Alabama et al)

Within the top 20 most costly insured loss events (1970–2013) you will find just one man-made loss which is 9/11.

Source: Swiss Re Sigma 1/2014, page 43

The Loss Event Challenge



Emerging markets carry a significant loss potential which is still underinsured. Once this gap is starting to close the largest insured disasters will be recorded in today's emerging markets and these losses might be much larger than today's insured losses on record.

This effect is one of the most significant challenges for the insurance and reinsurance industry and requires for prudent as well as forward looking risk management techniques.

The Capital Challenge – What if?

Key assumptions:

USD 322bn dedicated capital

USD 190bn P&C gross reinsurance premium

USD 15bn average P&C UW profit in benign cat year

USD 39bn average pre-tax income in benign cat year

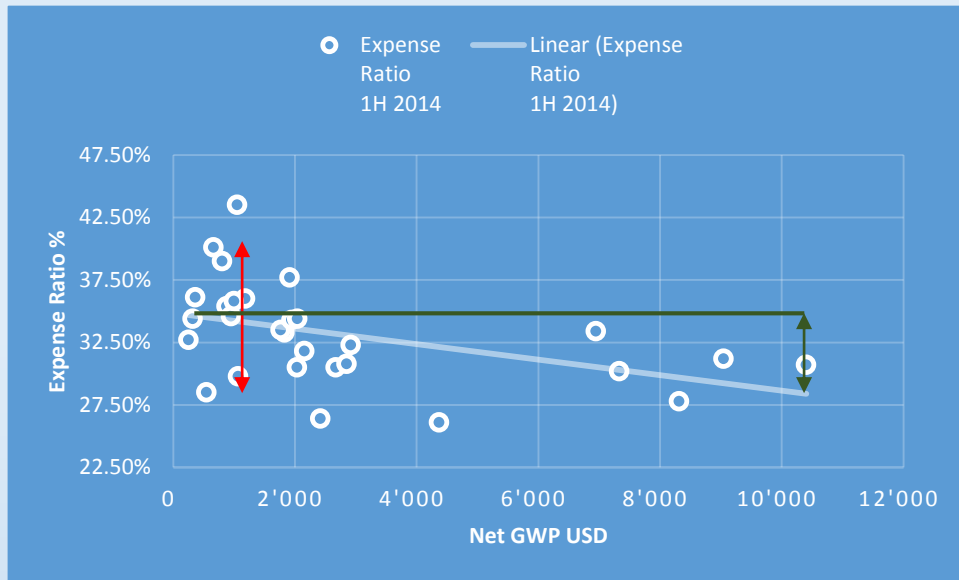
USD 32bn average net income in benign cat year

What if reinsured cat loss(es) occur?

USD 20bn	Earnings hit still and positive net income	No cycle change
USD 40bn	Earnings hit and at least break even net income	No cycle change
USD 60bn	Slight capital hit of approx. USD 20bn, i.e. 6.5% of global reinsurance capital	Very likely no cycle change
USD 80bn	Capital hit of approx. USD 40bn, i.e. 13% of global reinsurance capital	Likely no systematic cycle change when cat loss incurred in well modelled areas and no surprise effect; alternative capital will float market opportunistically
USD 100bn	Capital hit of approx. USD 60bn, i.e. 19% of global reinsurance capital	Very likely cycle change, market dislocation and market exist; rating agencies will take action on individual players and industry; capital replenishment might take time
USD 130bn+	The size of loss will adversely affect the investment side as well (asset crisis following liquidity needs)	Cycle change; market dislocation; market exits; capacity crisis

Source: Self-Assessment by HJG

The Business Model Challenge



Differences in business model, company size and overall organizational efficiency are driving forces for the expense ratio.

↕ The regression analysis underlines the importance of economies of scale, i.e. size.

↕ However efficiencies and business model trim seems to be equally important as within the same GWP bracket the spread between lowest and highest expense ratio amounts to more than 10%age-points.

Source: The Aon Benfield Aggregate, Results for the six months ended June 30, 2014, HJG linear regression analysis

New normal: Facing change

Wrap-up

Transformational Challenges turn into Change

Growth

Loss event

Modelling

Capitalization

Margin

Business Model

Location

- Asia will become the strongest premium pool
- Asian exposures will outweigh existing portfolio diversification, i.e. Asian exposure growth will translate directly into additional reinsurance capital needs.
- Growth in new territories will add to “white spot risk”. Unprecedented loss events tend to be under-modelled and therefore mispriced.
- Continuous oversupply of capital will fuel an unprecedented aggressive competition
- New capital is more likely originating in Asia.
- Long-lasting margin depression will cause for business model changes which look for improved profitability through cost cutting and efficiency gains
 - M&A will consolidate the market and let survivors meet minimum scale requirements
 - A new generation of lean and specific return period focused reinsurers will enter the market place with reduced capital costs and improved investment income
 - Existing business model needs for re-engineering.
- Company structure will transition from straight line into matrix and ultimately into networked organizations.
- New start-ups will likely be based within growth regions, i.e. Asia.