ENTERPRISE RISK MANAGEMENT

ERM

Symposium

Where Cutting Edge Theory Meets State of the Art Practice

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Solvency II
Implementation Issues
Procyclicality

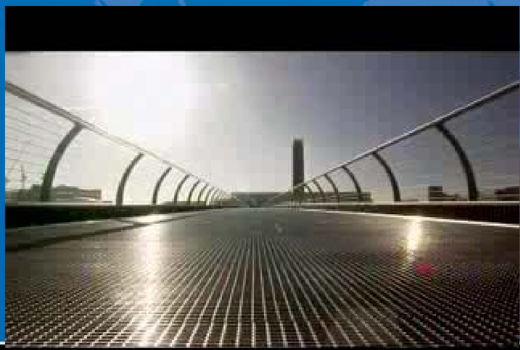
Masashi Kikuchi

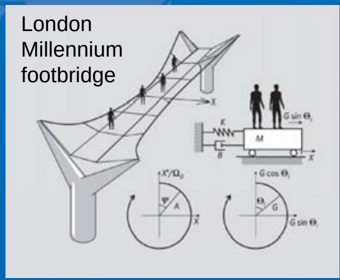
Procyclicality

- Solvency II is a risk sensitive regulation, it means that equilibrium between risk profile and risk aversion of control structures (including risk officers, board and regulators) will determine the solvency requirements of the entity.
- Related to market risk, Basel II has demonstrated (even before fully implemented) that when capital is more expensive it shows a greater need of capital, and conversely on the growing cycle, it shows less need of capital than prudent.
- As Solvency II implies full recognition of market risk, if the general risk profile of an entity shows a significant correlation with market risk then the solvency requirement will be market procyclical.
- On the other hand, traditional investment in government paper expose entities to sovereign and exchange risks, as the 2011 crisis showed.

Procyclicality

- From a whole insurance market perspective, if insurance companies are subject, at the same time, to an urgent need of capital mainly because they use identical risk measures, then it could cause a resonance problem derived from the risk sensitive system.

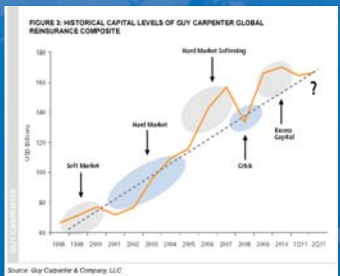


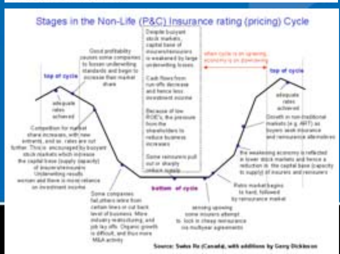


London Millennium Bridge Opening

http://www.youtube.com/watch?v=gQK21572oSU

How are the insurance cycles?

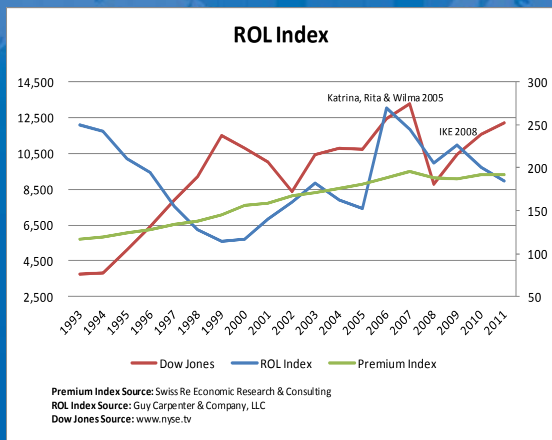




There are some works that could be downloaded from the net:

- Fabian Tarr, *An investigation into the existence of Underwriting Cycles in the South African Primary Marine Insurance Market: 1925-2006*
- Alice Underwood, Willis, *Loss ratio uncertainty and the market cycle*
- Scott E. Harrington, *Tort Liability, Insurance Rates and the Insurance Cycle*
- Munich Re, *Understanding and projecting the U/W cycle – Insurance and Reinsurance*. *May, 2010*
- Ursina B. Meier, J. François Outreville, *The Reinsurance Price and the Insurance Cycle*
- Guy Carpenter, *World Catastrophe reinsurance market review, September, 2011*

Cat risk reinsurance ROL



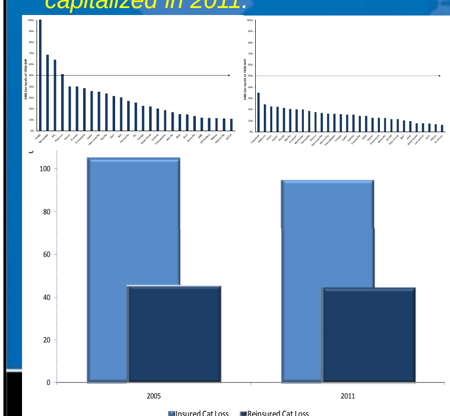
- Negative correlation (-23%) between Dow Jones and Rate on Line, indicates that when the market is growing reinsurance entities sacrifice price, however, a big catastrophe can change this rule easily.
- Good correlation between Dow Jones and Premium Index (84%) shows that insurance companies depend on economic cycle (with less volatility) and that they are institutional investors.

2012 perspective

Guy Carpenter

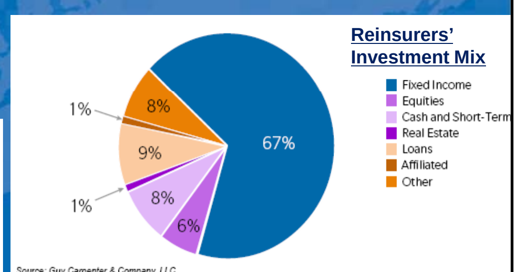
Reinsured Proportion of Losses: 2005 and 2011

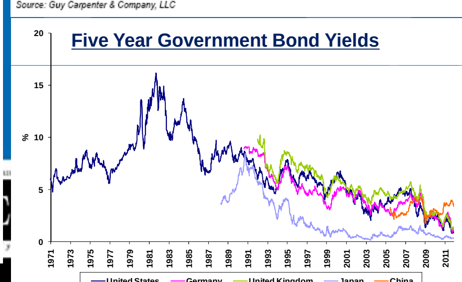
Reinsured loss was similar to 2005 but reinsurers were much better capitalized in 2011.



Macro-economic Factors

- Reinsurers cannot rely on investment income to support underwriting





2012 perspective (Guy Carpenter)

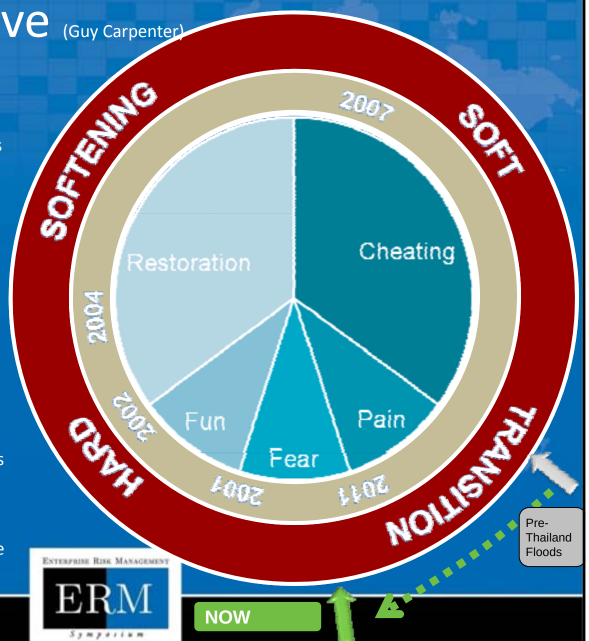
Market drivers

The market faced difficult and uncertain conditions leading up to the renewal

- Significant catastrophe reinsurance losses throughout the past two years; Thai floods the latest
- Vendor Model Change and effect of "unmodelled" perils
- Adverse macro-economic, financial indicators

Reinsurers reacted by withdrawing/reducing capacity and re-evaluating pricing processes

- The benefit of "diversification" was called into question
- Very limited additional capacity was available for property cat – reinsurers were not willing to increase participations
- This meant that lost capacity was difficult to replace
- Some programmes were re-priced after the first marketing attempt did not secure placement



Source: Dowling & Partners, Guy Carpenter

Procyclical measures

- Use longer time frame, containing at least one entire cycle
- Greater appreciation of correlations
- Equalization reserves
- Capital reserves

Can historical patterns preview prospective environment?

Do we have enough data and knowledge?

Tax authorities, stakeholders and rating agencies agree?

Is capital surplus well determined and efficiently used?

Procyclicality

"The essential problem is that our models — both risk models and econometric models — as complex as they have become, are still too simple to capture the full array of governing variables that drive global economic reality,"

Alan Greenspan,
"We will never have a perfect model of risk"
Financial Times March 16, 2008

If the probability of an event changes according to time or other not easily measurable scale like exposure, monetary policy stability, country risk, etc. then our models have a very limited forecast capacity, specially for extreme events. It´s even worse when this model is compulsory because the law will tend to synchronize the responses and stress the whole system.

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"Financial regulation is inherently procyclical. Our view is that this set of proposals will, overall, exacerbate this tendency significantly. In so far as the purpose of financial regulation is to reduce the likelihood of systemic crisis, these proposals will actually tend to negate, not promote this useful purpose."

An Academic Response to Basel II
Jón Daníelsson, Paul Embrechts,
Charles Goodhart, Con Keating, Felix Muennich,
Olivier Renault and Hyun Song Shin
2001

This is related to Basel II.
What about Solvency II?

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