Introduction to:
“Whyte DaiMin Model” Solutions for Catastrophe and Agriculture Risk Transfer and Recovery Finance

for

China’s Catastrophe Insurance Pilot Project Models
China’s Catastrophe and Agricultural Risk Exchange Model
China’s Health Insurance Exchange Model
ASEAN RE Catastrophe Recovery Model
BRICS RE Agriculture Loss Financing Model
China Special Economic Zone Development Model

Whyte Daimin Investments Limited
Whyte Daimin Reinsurance and Finance Center
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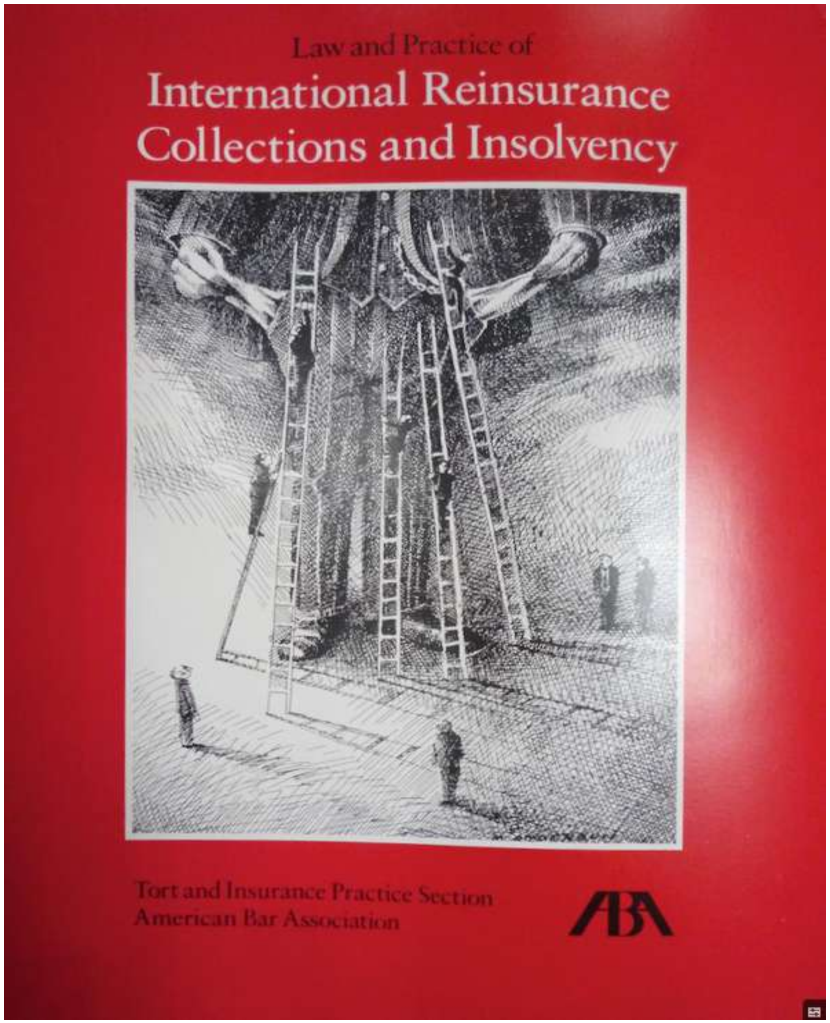
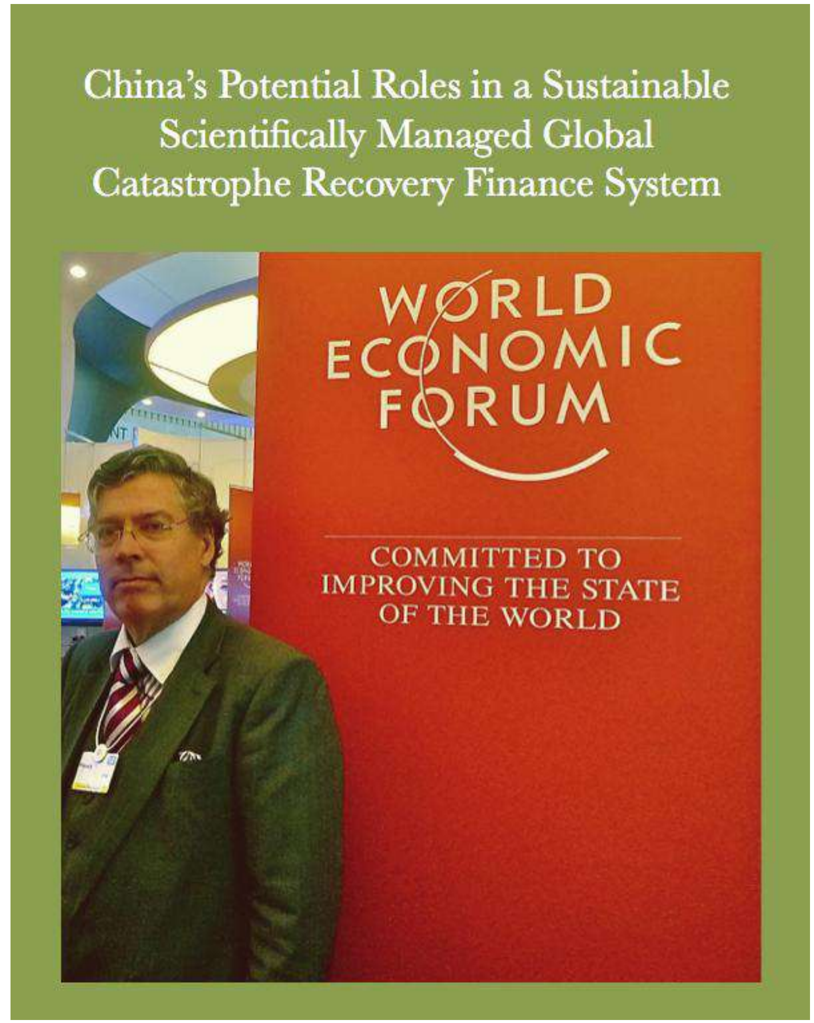
Milligan-Whyte's 1988 and Whyte DaiMin's 2015 textbooks explain and provide solutions to reinsurance market crises.





Whyte Daimin Investments Limited and its two think tanks have worked for 10 years with China's national, provincial and municipal government entities, think tanks, universities and companies implementing economic development reforms and insurance, reinsurance and financial strategies aligned with China's needs and President Xi Jinping and Premier Li Keqiang's goals.

In this presentation:

PART 1. **su**mmarizes why government-reinsurers partnerships relying on coverage from the reinsurance and catastrophe bond markets cannot reliably protect lower per capita income nations.

PART 2. summarizes the crises in the international reinsurance market, unreliable credit worthness of reinsurers and of the pricing, terms and availability of coverage provided by catastrophe bond investors.

PART 3. introduces the Whyte Daimin Catastrophe and Agricultural Loss Recovery Finance Framework and Models for China's Insurance Pilot Projects.

PART 4. Whyte Daimin Models for farmers' income security in China's Agriculture Insurance Pilot Projects and Consumer Food Price Security and BRICS RE.

PART 5. introduces Whyte Daimin recommended advanced working models for China's Agricultural and Catastrophe Risk Exchanges.

PART 6. introduces a working Model for China's Health Care Exchanges

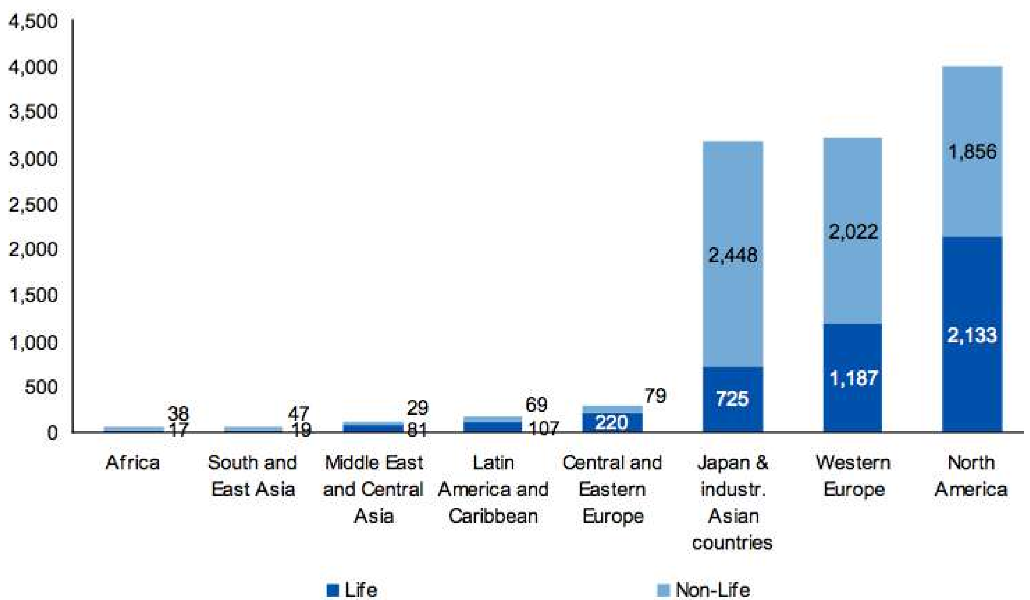
PART 7. introduces the Whyte Daimin Model for ASEAN RE

PART 8. introduces the Whyte Daimin Model for China's Free Trade Zones based on proven success of Bermuda's Economic Development Model

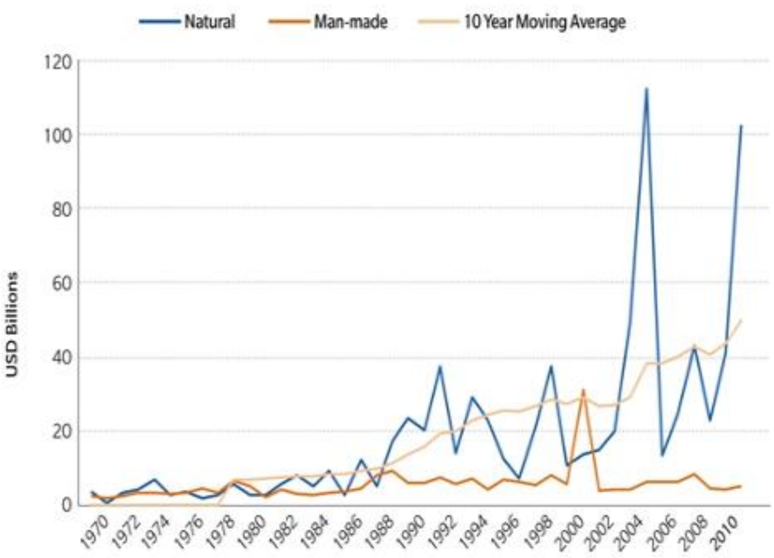
PART 1

Why the reinsurance and catastrophe bond markets <u>cannot</u> <u>reliably</u> protect lower per capita income nations.

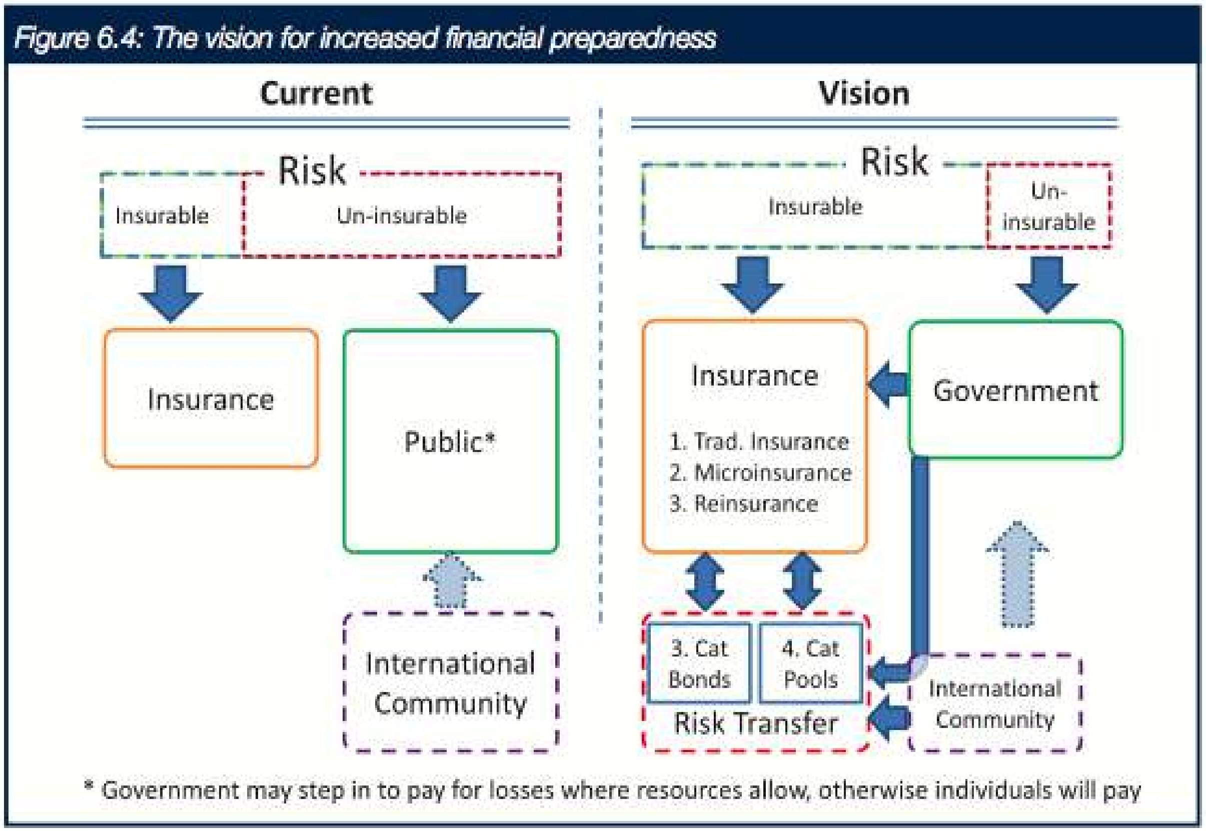
Nations with lower per capita incomes have increasing catastrophe recovery costs without the developed insurance sectors in high income nations.
Below charts reveal the insurance premium levels worldwide in 2008 and increasing insured catastrophe losses.



ource: Swiss Re Facts and Figures 2008



The key problem is that reinsurers provide the only models for catastrophe risk transfer and recovery finance and promote this “vision for increased financial preparedness” for catastrophes:



Reinsurers seek "partnerships" in which businesses and consumers provide <u>or governments subsidize</u> reinsurers new profits in lower income nations.

Reinsurers propose governments promote businesses and consumers buy insurance through education programs and making insurance mandatory or building insurance premiums into bank loan provisions etc. In nations not providing profitable premium levels, governments would subsidize premiums and reinsurers' profits on lower layers of catastrophe coverage reinsurers provide typically through uncollateralized reinsurance treaties. That exposes domestic insurers to the credit risk of international reinsurers' insolvency or disputing claims.

Reinsurers distribute risks they assume in the reinsurance markets and to catastrophe bond investors. Governments and the public continue to suffer the massive economic losses from <u>peak layers</u> of catastrophe risks. Reinsurers will not cover and cannot transfer peak losses to catastrophe bond investors.

Reinsurers will not provide reliable catastrophe recovery protection. Japan is a revealing case study

Japan's per capita income is US$ 37,800 and, "The Japanese property and casualty insurance industry is the third-largest behind the U.S. and Germany with more than $100 billion in premiums written in 2009. The earthquake in 2011 may cost more than $100 billion, but insurers may cover as little as $12 billion because of big coverage gaps in the country's insurance market. The ultimate impact may be closer to $190 billion.

But many quake risks are covered by the government, or they aren't covered at all. Government is the big backstop against residential losses.

Quake is a special coverage many companies opt not to take because it's so expensive. Up to 30% of households have coverage, but take-up rates in some regions are as low as 10%.

Insurers limit the amount of coverage available. There could be a $10 million catastrophe sublimit on a policy that protects a commercial building worth $100 million. If there was a total loss on a policy like this, the policyholder would only get $10 million."

"Japan's insurance market leaves major gaps," *Market Watch*, March 18, 2011

Although reinsurers and catastrophe bond investors cannot provide long-term commitments to provide adequate or affordable catastrophe coverage, if they can build nations' dependence on them they can then increase prices, decrease coverage terms or refuse to reinstate coverage after major loss years when it is most needed to protect nations' economic growth. They are profit driven and <u>cleverly limit and provide coverage only in 1 to 3 year periods</u>.

It is far better and safer for countries to rely on trade support based, long-term government to government sponsored partnerships. That is why we designed and are assisting in implementing a new paradigm of Whyte Daimin Models for Catastrophe Recovery Finance.

M7.2 earthquake close to the trigger of MultiCat Mexico 2012 cat bond

Share 22

A magnitude 7.2 earthquake which struck Mexico on Friday 18th April in the south-western state of Guerrero, came very close to the magnitude and location required to breach the parametric trigger of the <u>MultiCat Mexico Ltd. (Series 2012-1)</u> catastrophe bond.

The M7.2 quake, which was located not far from the beach resorts of Acapulco, shook the region with residents of Mexico City almost 280km away reporting strong shaking from the earthquake as well.

Friday's earthquake was one of the largest felt in the Mexican capital in a number of years, perhaps due to the relatively shallow nature of the quake. The USGS initially recorded it as a M7.5 quake event, with a depth of 24km. It was subsequently downgraded to a M7.2 magnitude.

Pacific Catastrophe Reinsurance Pool Mulls New "Tools" After Country Drops Out

The Pacific Island catastrophe risk pool managed by the **World Bank** is working with private sector insurers to develop new programs following the departure of one of the founding country participants

The World's Bank's **Disaster Risk Financing and Insurance Program** (DRFI) is looking to shift its focus in its **Pacific Catastrophe Risk Insurance Pilot** initiative, according to **Samantha Jane Cook**, a financial sector specialist with DRFI.

"The new tools are being developed according to the demand from the countries, preliminary discussions have focused on the development of a new regional insurance tool targeted to cover more frequent and less severe events," Cook said in response to emailed questions. "The discussions with the Pacific Island Countries regarding any new structure are ongoing. We are keen to ensure that any new structure developed is suited to the needs of the countries and their unique disaster risk financing and insurance requirements."

The changes come following the departure of the **Solomon Islands** from participating in the facility last year. "[The] Solomon Islands experienced two disaster events which were not eligible for a payout and withdrew from the pilot. This has created the impetus to develop new DRFI tools to cover these layers of risk," a recently released World Bank review of the program stated.

PART 2

The reinsurance market crises and unreliable catastrophe bond coverage

All four major rating agencies (Standard & Poor, Bests, Fitch and Moody's) have "negative outlook" warnings on the global reinsurance sector

Goldman Sachs stated in 2014, "The sun may have set on traditional reinsurers' business model with capital markets able to efficiently enter and exit the market, the opportunity for reinsurers to extract excess returns has substantially diminished and is unlikely to re-emerge. Low levels of catastrophe losses in recent years are masking the effect for reinsurers, but in more average loss years the impacts on reinsurers' profitability will be more apparent to their shareholders seeking profits."

The Whyte Daimin Catastrophe Recovery Finance Models provide an essential paradigm change because:

1. **Catastrophe risk models are useful but not reliable**. Actuarially predicting and pricing catastrophe risks based on projecting past loss history into the future are not reliable because of the the "new unpredictable normal" of rapidly changing frequency, severity and locations of catastrophes and current limited ability of the geophysics and climatology sciences to predict catastrophes.
2. **Reinsurers catastrophe coverage and credit worthiness are unreliable.** They have had unsustainable underpricing of catastrophe reinsurance since 2005, low investment returns in bonds since 2008, and dangerous increased from 4% to 34% of reinsurers assets into stock markets since 2013.
3. **Reinsurers and insurers should not write catastrophe risks unless** they can accurately model risk exposures and have adequate aggregate limit, premiums and assets.
4. **Catastrophe bonds availability, pricing and terms are unreliable.**
5. **Catastrophe risks should be transferred and financed in the huge capital and commodity hedging markets instead of the small reinsurance markets.**

Whyte DaiMin Model's

"One Solution for Two Big Sets of Problems "

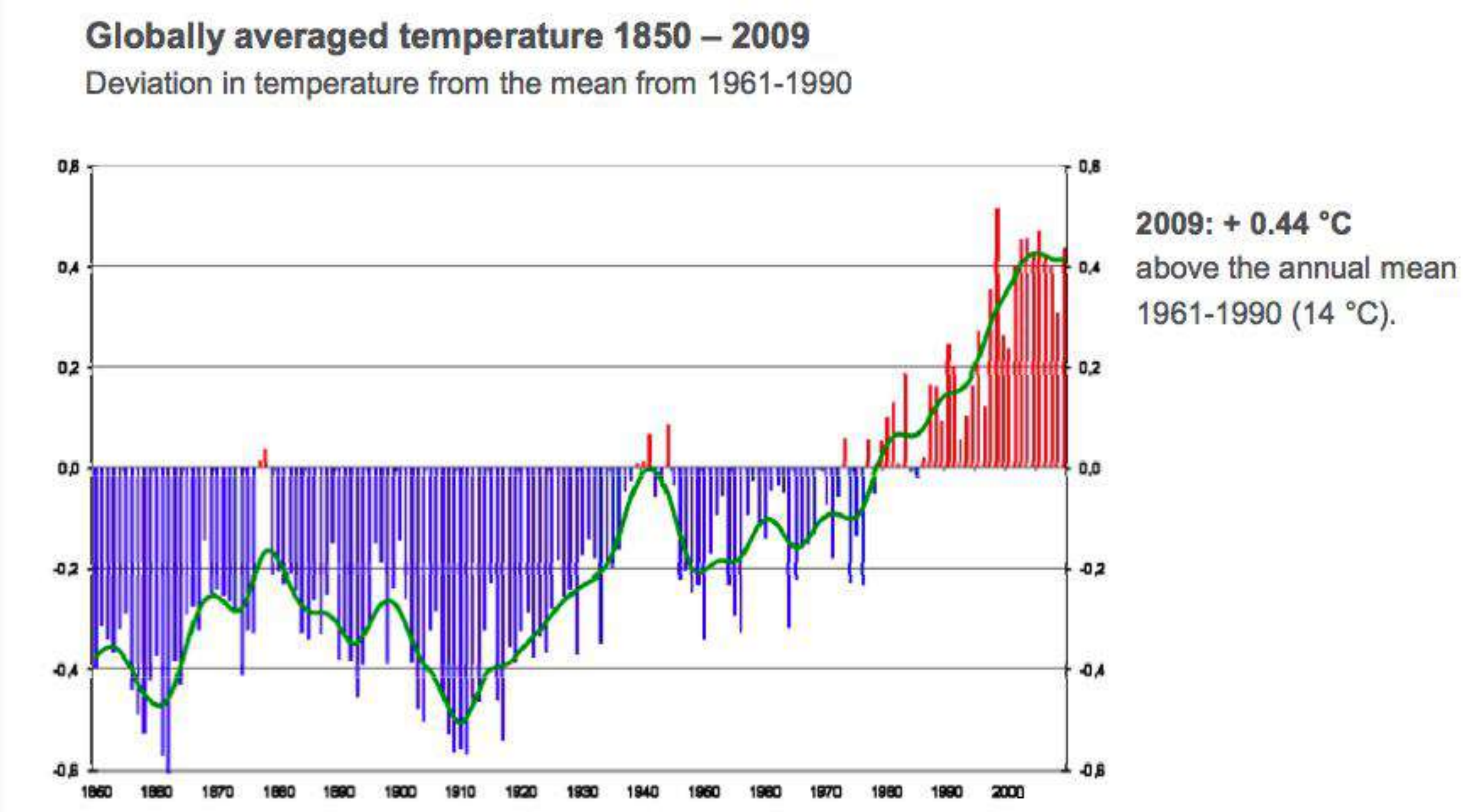
Global Reinsurers' Problems:

1. increasing severity and frequency of insured and reinsured catastrophe losses crises
2. too little capital crisis
3. inadequate pricing and investment return crises
4. underwriting and risk modeling uncertainty crises
5. existing reinsurers' strategic business model crisis
6. pending insolvency crisis that can cripple China's trading partners

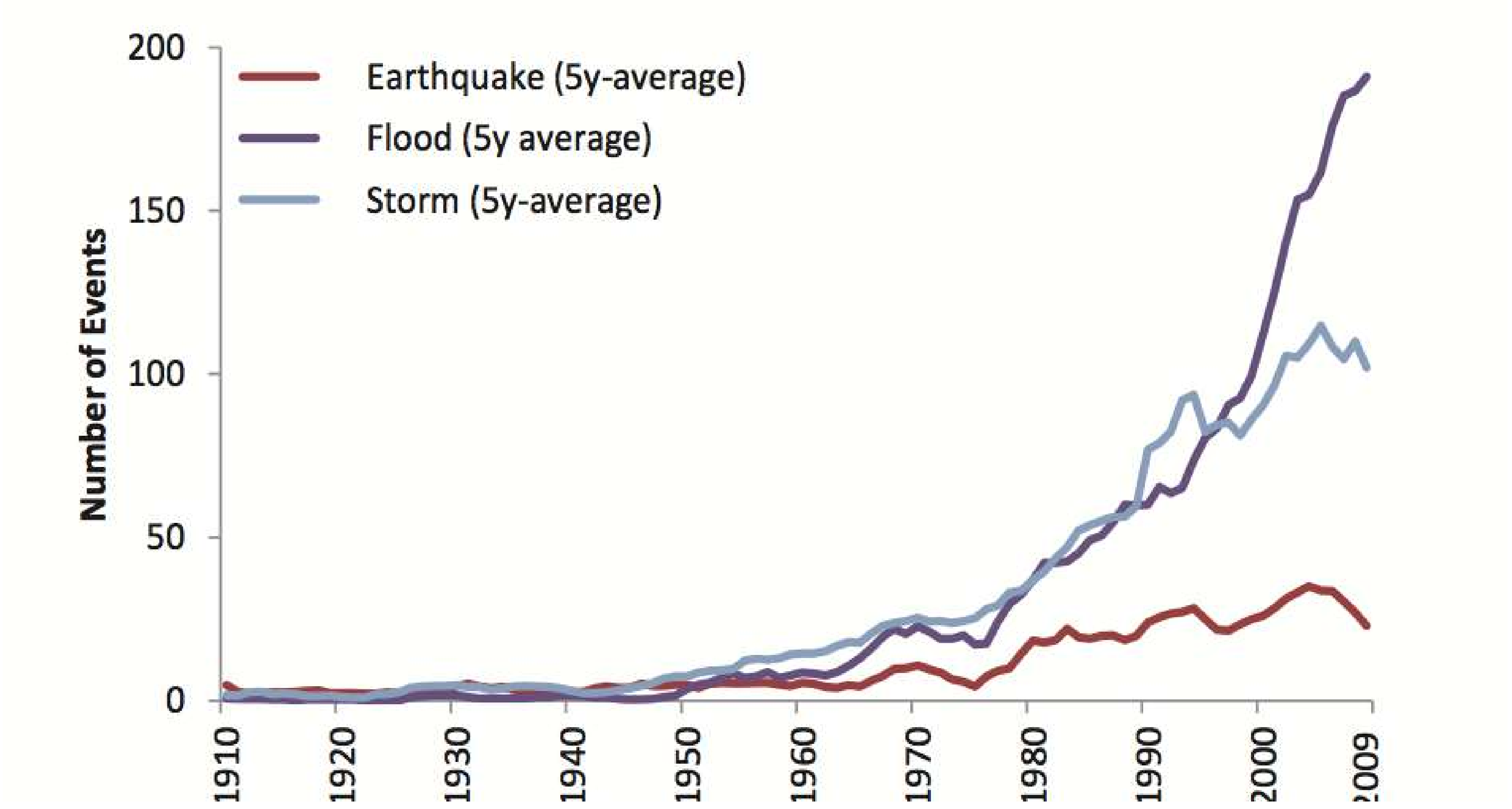
China's Problems :

1. increasing severity and frequency of uninsured catastrophe economic losses crisis
2. too much foreign currency invested in rapidly depreciating foreign debt
3. is not adequately allowed to invest in foreign companies equity and assets
4. self-insures 22% of mankind's catastrophe recovery costs
5. needs to sustainably develop and control its own financial industries services, reinsurance and insurance
6. wants to win friends in ASEAN, Asia, Africa, America and globally

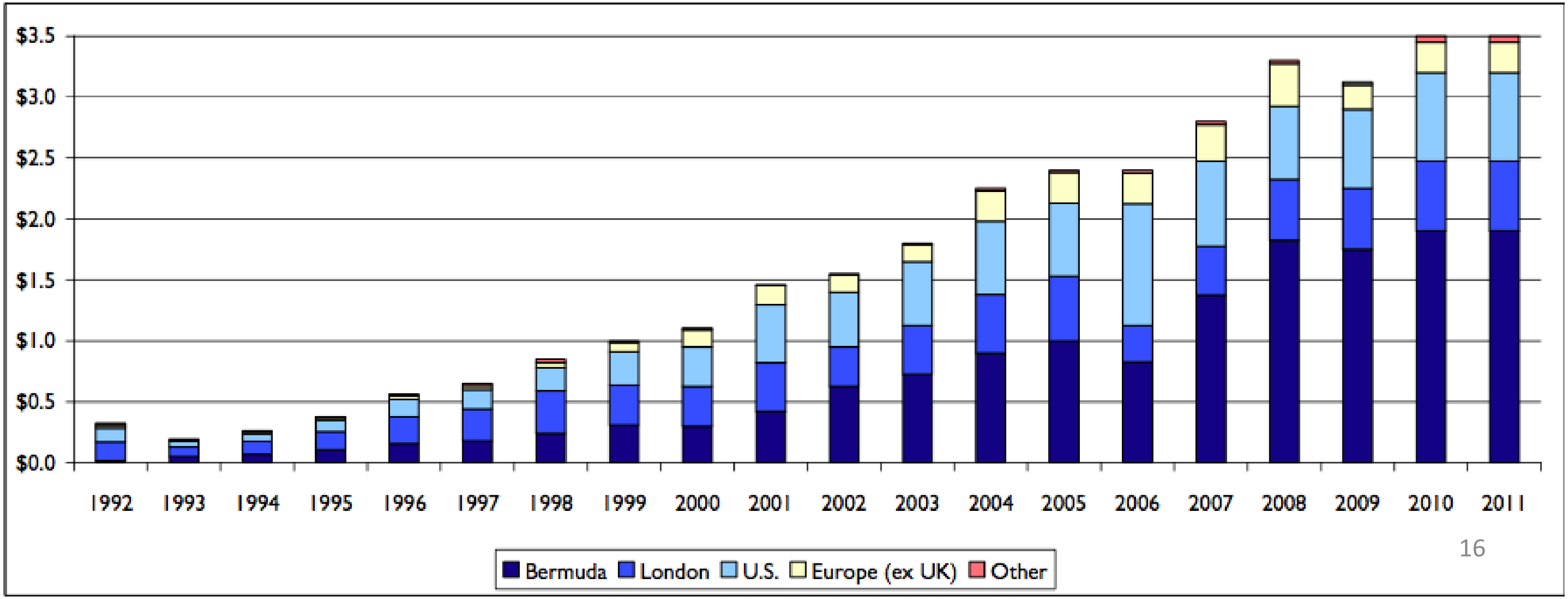
This chart reveals the new era of global average temperature deviation from historic mean temperatures increasing worldwide



This chart reveals the increasing frequency of catastrophes.

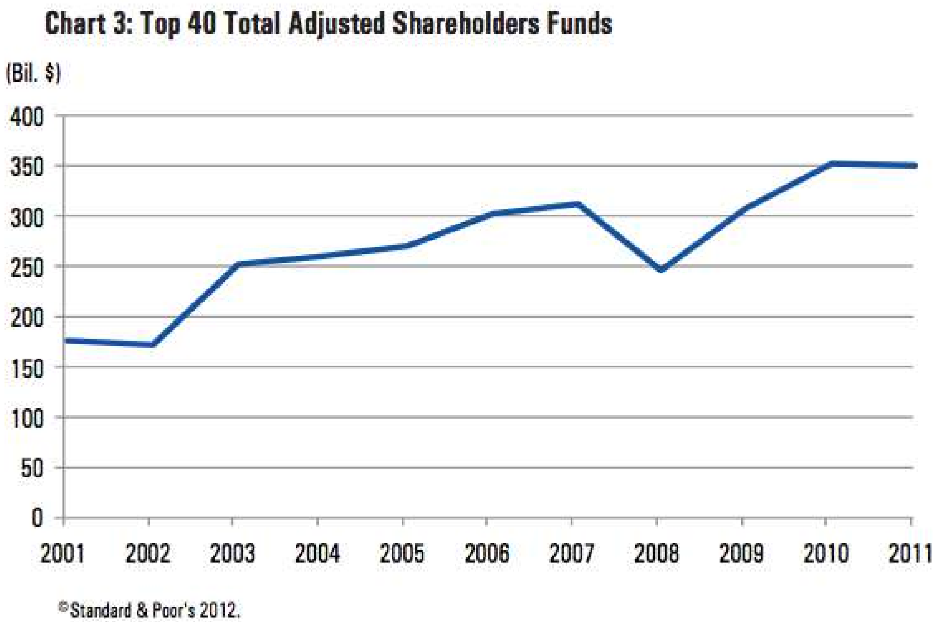


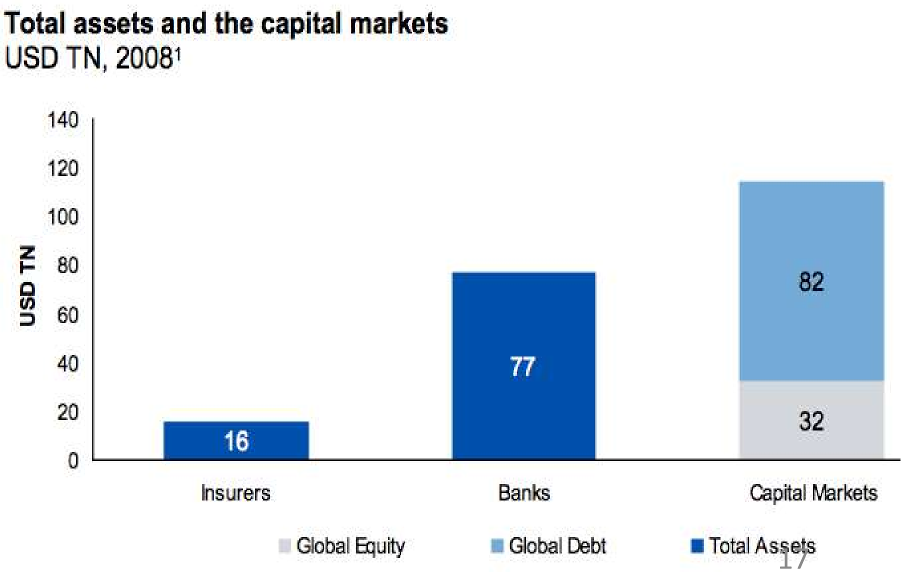
This chart reveals the corresponding growth of reinsurance and catastrophe bond based risk transfer between 1992 to 2011 from US$ 350 Billion to US$ 3.5 Trillion and that the innovative Bermuda reinsurance and catastrophe bond markets provide 50% of the world's catastrophe recovery finance.



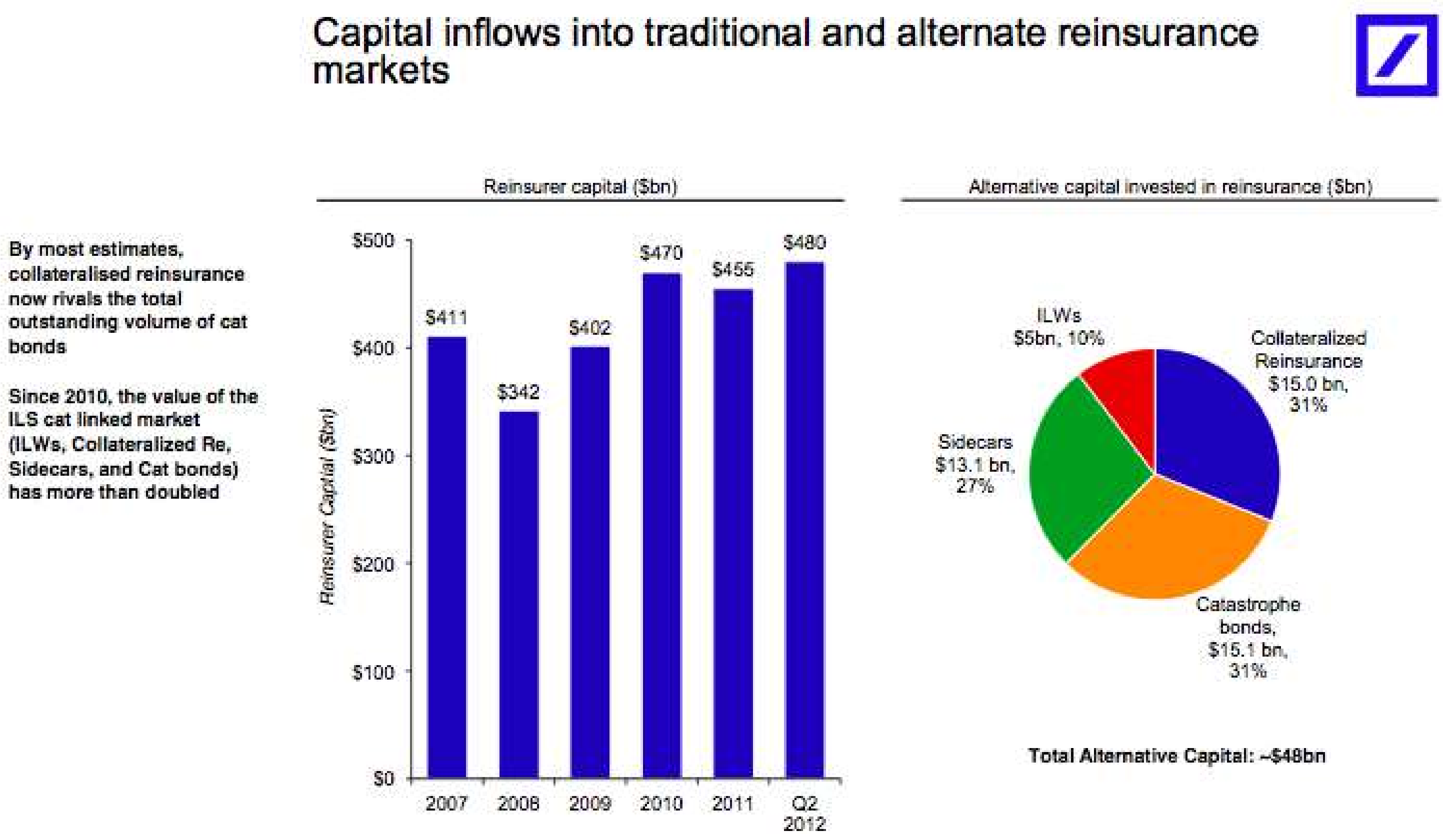
These charts reveal that from 2001 to 2011 the total adjusted shareholders' equity of the largest 40 reinsurers only increased from US$ 170 to $350 Billion as catastrophe coverage increased from US$ 1.5 Trillion to US$ 3.5 Trillion

In 2011 reinsurers' total equity of only US$ 350 Billion was supporting the US$17 Trillion insurance and reinsurance markets. There is US$ 114 Trillion in the capital markets

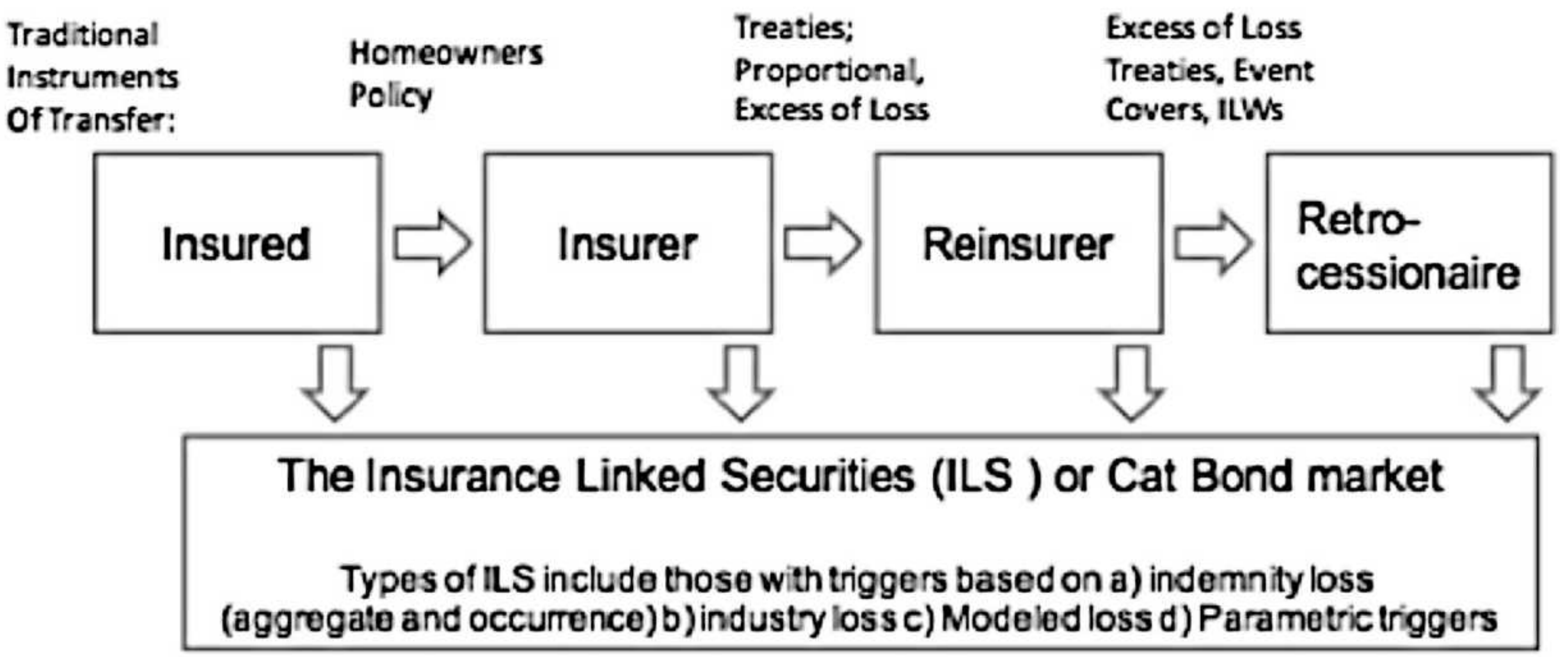




These charts reveal that in 2012 the total capital of all reinsurers was <u>only</u> US$ 480 Billion and the capital from the insurance linked securities and catastrophe bond market was US$ 48 Billion, which increased in 2014 to US$ 68 billion or 20% of the world's catastrophe coverage. Reinsurers total capital was US$ 578 Billion.



The competitive advantages of securitization of catastrophe risk is undermining reinsurers' traditional business models. Buyers can deal directly with investors on terms typically better than reinsurance risk transfer.



Catastrophe bonds securitize, transfer and make catastrophe risks tradable in the capital markets

Catastrophe bonds are rapidly taking market share from traditional reinsurance coverage. Reinsurers seeking profits of 10% to 20% from providing uncollateralized reinsurance cannot compete in many instances with catastrophe bond investors that have been willing to accept expected 5% to 7.5% profits from providing fully collateralized coverage. Catastrophe bonds pay claims more quickly than reinsurance, are often fully collateralized eliminating the credit risk of reinsurers refusing or being unable to pay claims, and are less subject to coverage disputes than reinsurance.

In 2014 US$ 68 billion was invested in insurance linked securities that provided 20% of catastrophe recovery coverage. That may increase to 40% to 50%.

Unfortunately catastrophe bond investors are unreliable sources of catastrophe risk transfer and recovery financing.

The availability of catastrophe bond coverage can easily disappear or its pricing increase and coverage terms decrease when there are major catastrophe bond losses or there is another financial crisis in the capital markets. It can also disappear when other asset classes become more attractive to investors.

Interest payments to investors in catastrophe bonds cease and they lose all or part of the capital they invested if a covered catastrophe occurs. In marketable catastrophe bond issues, modeling agencies and rating agencies issue opinions typically indicating that there is no more than a 2% likelihood of investors losing their capital and interest, which is true to date in over 300 reported catastrophe bond deals. Some investors are willing to accept higher possibilities of losing their capital for higher rates of interest. However, litigation has developed in cases where covered catastrophes occurred.

Investors have found that their investments other asset classes do not trigger losses in catastrophe bonds. But, a major catastrophe in an urban or financial center will be correlated with certain types of losses in the capital and stock markets. AIR, a leading catastrophe modeling agency warns one category 5 hurricane making landfalls on the U.S. coastline in Miami and New York could wipe out as much as 60% of tranches of coverage in all catastrophe bonds issued.

The *Financial Times* reported on April 28, 2015 that <u>securitizing catastrophe risks "threatens reinsurance sector collapse."</u>

This chart uses industry data to compare the difference between the world's four largest insured catastrophes actual and <u>much higher potential losses</u> if they occurred now.

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April 28, 2015 7:13 pm

Catastrophe deals threaten reinsurance sector 'collapse'

Alistair Gray, Insurance Correspondent Author alerts

©Reuters

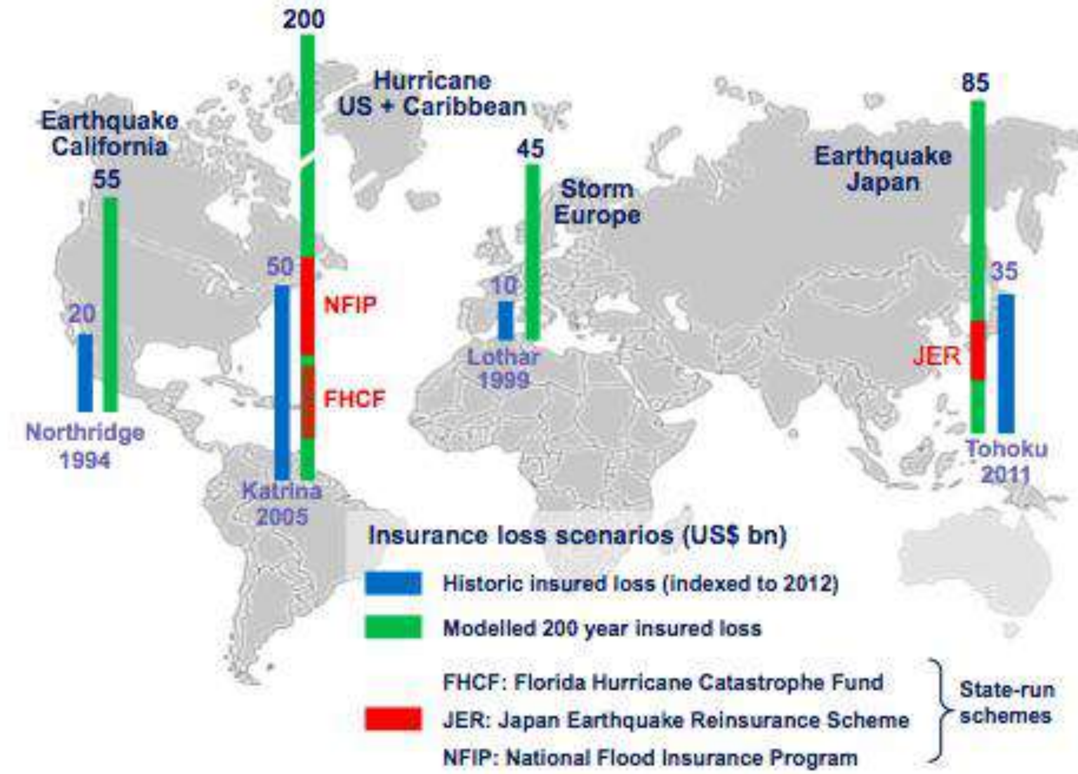
Catastrophe reinsurance, which protects insurance groups against the costs of disasters such as Hurricane Sandy, is changing

The $575bn industry that protects insurers from earthquakes, hurricanes and other disasters risks a banking-style meltdown if it continues making "dangerous" changes to how it is structured, new research has found.

After a three-year study of the reinsurance sector, a team of business school academics has found that some companies are now packaging together catastrophe risks in a similar way to the carving up of subprime mortgages by big banks before the financial crisis.

As a result, the victims of a costly catastrophe — such as an earthquake or storm that destroys large areas — could run into problems having their insurance claims paid.

Professor Paula Jarzabkowski of Cass Business School, one of the researchers, said mainstream insurers were potentially spreading risks to parties that did not fully understand them.

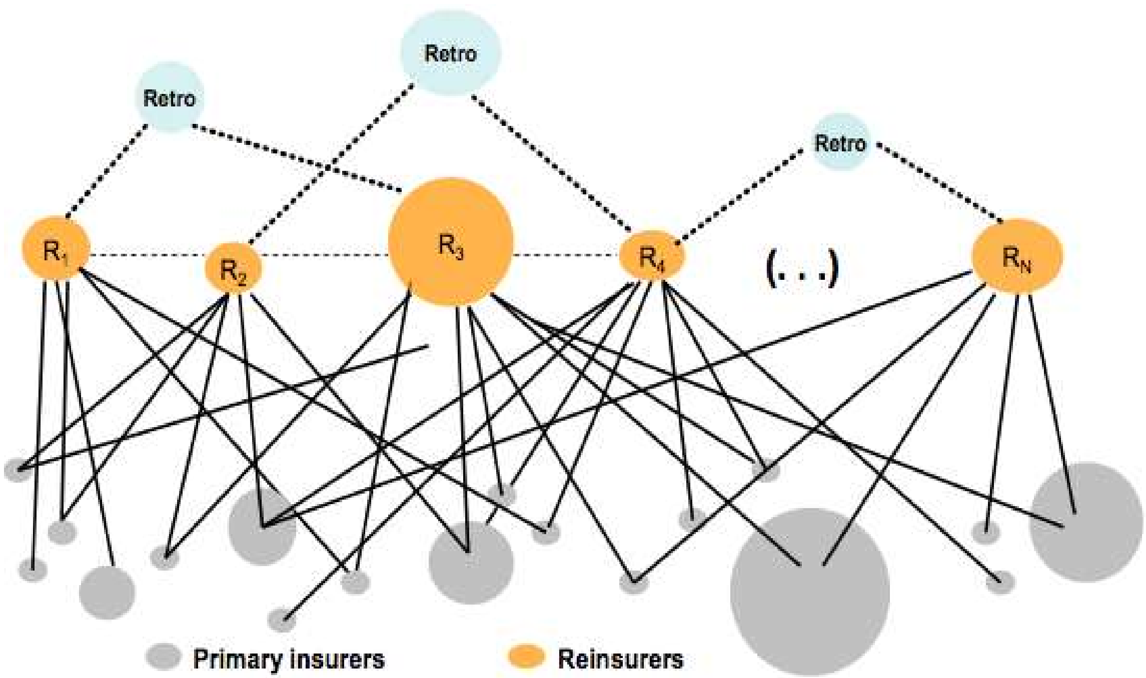


Source: Industry data

This chart reveals that the reinsurance market is concentrating rather than distributing risk.

In 2011 Munich Re, Swiss Re and Hannover Re had 34.8 % of the global reinsurance market. In the “new unpredictable normal” that concentration of risk can cause the insolvency of these companies, a domino effect of crises in the reinsurance market and the collapse of the the global financial system

The reinsurance market is dangerously concentrating risk in other ways also. In addition to 3 reinsurers having 34.8% of the reinsurance market, reinsurers transfer and assume risks from each other. Each reinsurer to sets its own aggregate limits and mix of risks, most place and accept proportional risks with other reinsurers.

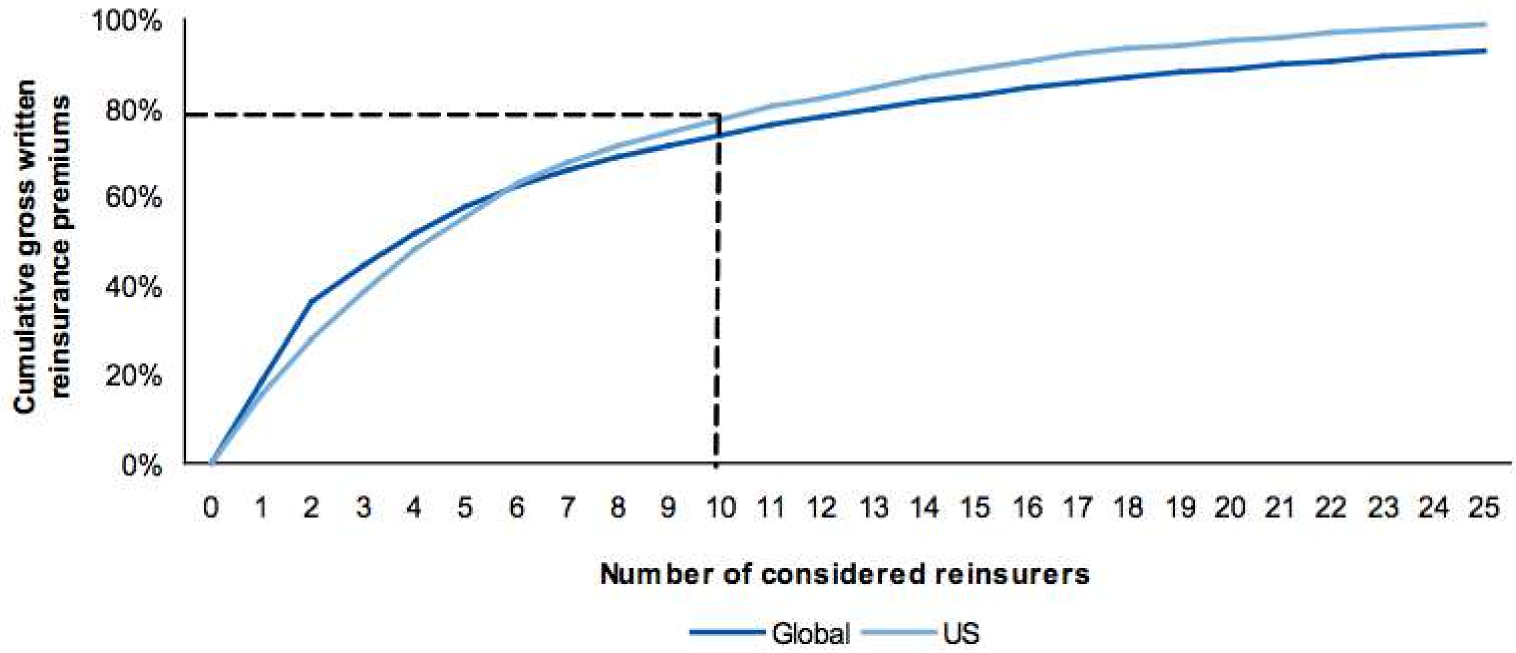


Top 40 Global Reinsurance Groups Ranked By Net Reinsurance Premiums Written

		Footnote		Net Reinsurance Premium Written (Mil. $)	
Ranking	Company	Footnote	Country	2011	2010
1	Munich Reinsurance Co.		Germany	33,719.2	29,269.1
2	Swiss Reinsurance Co.		Switzerland	22,868.0	19,433.0
3	Berkshire Hathaway Re	1	U.S.	15,350.0	14,669.0
4	Hannover Rueckversicherung AG	2	Germany	14,279.2	13,652.2
5	Lloyd's	3	U.K.	10,735.5	9,762.1
6	SCOR SE		France	8,891.5	8,141.3
7	Reinsurance Group of America, Inc.		U.S.	7,335.7	6,659.7
8	PartnerRe Ltd.	4	Bermuda	4,486.3	4,705.1
9	Everest Reinsurance Co.		Bermuda	4,108.9	3,945.6
10	Transatlantic Holdings Inc.		U.S.	3,859.6	3,881.7
11	MS&AD Holdings		Japan	3,700.9	3,587.4
12	Korean Reinsurance Co.	5	Korea	3,057.5	2,803.0
13	NKSJ Holdings	6	Japan	2,786.1	2,526.1
14	Tokio Marine Group	7	Japan	2,654.2	2,617.2
15	General Ins. Corp. of India	8	India	2,421.9	2,321.4
16	Mapfre Re		Spain	2,310.5	2,125.2
17	XL Re Ltd		Bermuda	2,088.1	1,920.5
18	Toa Re Co. Ltd.		Japan	1,961.4	1,805.0
19	AXIS Capital Holdings Ltd.	1	Bermuda	1,953.3	1,815.3
20	Validus Holdings Ltd		Bermuda	1,835.5	1,761.1
21	QBE Insurance Group Ltd.		Australia	1,758.4	2,184.0
22	Caisse Centrale de Reassurance		France	1,732.8	1,759.9
23	Maiden Re	9	U.S.	1,723.5	1,227.8
24	Catlin Group Ltd.	10	Bermuda	1,569.6	1,141.9
25	Allied World Assurance Co. Holdings Ltd.	11	Bermuda	1,533.8	1,392.5
26	R+V Versicherung AG		Germany	1,495.6	1,387.1
27	Odyssey Re	12	U.S.	1,495.0	1,364.1
28	Alterra Capital Holdings Ltd	13	U.S.	1,432.0	1,040.0
29	ACE Tempest Reinsurance Ltd.		Bermuda	1,321.7	1,431.8
30	Amlin Group		U.K.	1,124.5	852.2
31	IRB-Brasil Resseguros S.A.	14	Brazil	1,108.3	628.9
32	Aspen Insurance Holdings Ltd.		Bermuda	1,098.1	1,118.5
33	Endurance Specialty Holdings Ltd.	7	Bermuda	974.3	933.9
34	Arch Capital Group Ltd.		U.S.	952.0	852.1
35	Sirius Group	15	Bermuda	915.7	865.7
36	RenaissanceRe Holdings Ltd.		Bermuda	913.5	809.7
37	Deutsche Rueckversicherung AG		Germany	745.4	796.8
38	Platinum Underwriters Holdings, Ltd.		Bermuda	651.5	760.6
39	Montpelier Re Holdings Ltd.		Bermuda	624.0	668.8
40	Flagstone Reinsurance Ltd.	16	Bermuda	558.4	668.7
	Total			174,131.2	159,285.9

This chart reveals that the 10 largest reinsurers had 80% of the world's <u>gross written reinsurance premiums</u> in 2008:

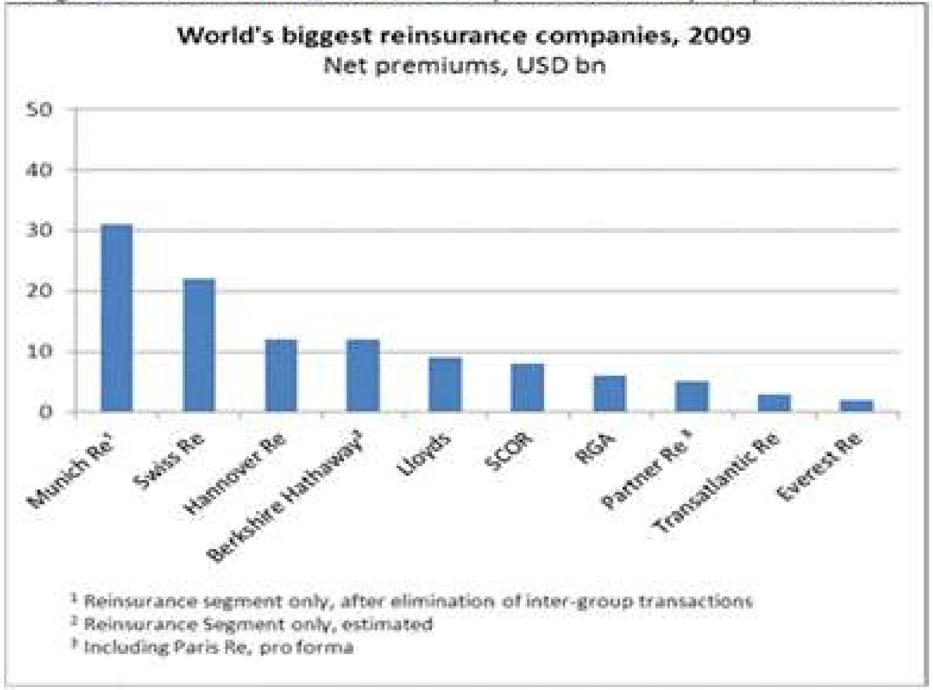
Cumulative premiums by the largest reinsurers
Ranked in descending order by gross written premium, 2008



Source: AM Best, IAIS Global Reinsurance Market Report 2009, OW Press Research
1. Based on the Top 35 global reinsurers (gross written premium 2008: USD 156 BN) and the total gross written reinsurance premium according to the IAIS Global Reinsurance
Market Report 2009 (2008: USD 159 BN) which is only considering reinsurers writing reinsurance in excess of USD 800 MM
2. Based on the Top 25 U.S. reinsurers (gross written premium 2008: USD 37.2 BN of total U.S. gross written premium of USD 37.7 BN)

These charts reveal the 10 largest reinsurers' net written premiums in 2009 and the amounts of each of their gross written premiums in 2011

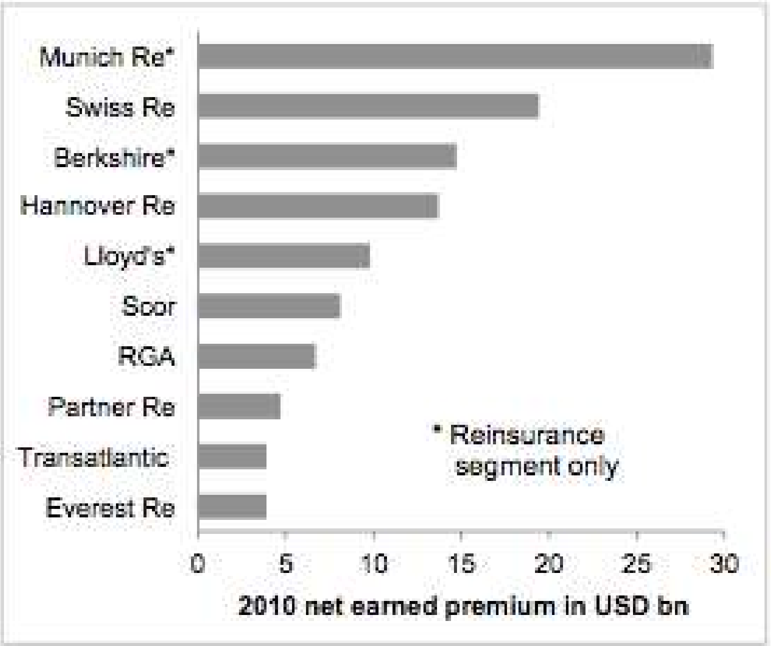
Largest Global Reinsurance Companies, 2009 (Net premiums, USD bn)



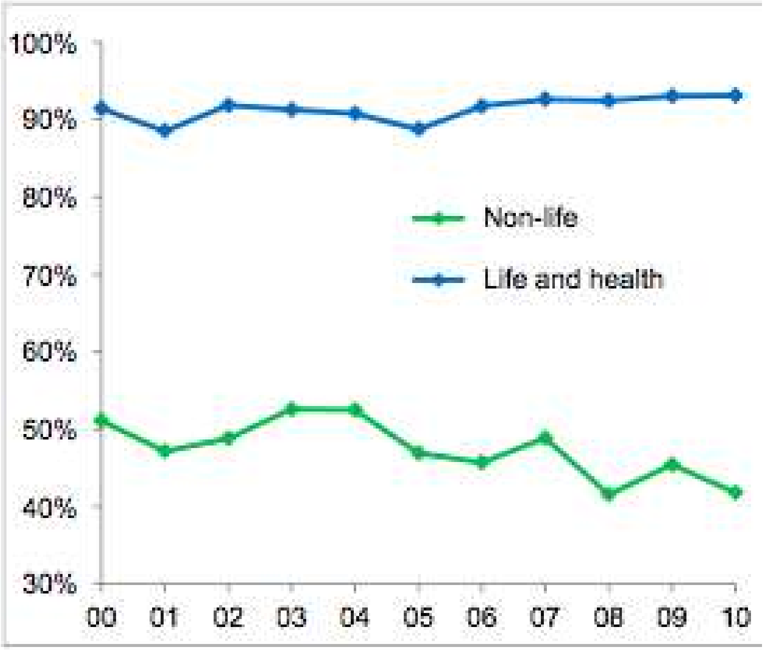
Source: Swiss Re

Reinsurer	2011 GWP (US millions)[3]
Munich Re	$33,719
Swiss Re	$28,664
Hannover Re	$15,664
Berkshire Hathaway / General Re	$15,000
Lloyd's of London	$13,621
SCOR	$9,845
Reinsurance Group of America	$7,704
China Reinsurance Group	$6,179
PartnerRe	$4,621
Korean Reinsurance Company	$4,551
Everest Re	$4,286
Transatlantic Re	$4,035
Thai Re	$1,129

These charts reveal that the largest 10 reinsurers' had 80% of the non-life market globally in the 10 years from 2000-2010 and shows their <u>net earned premiums</u> in 2010



Source: Company reports

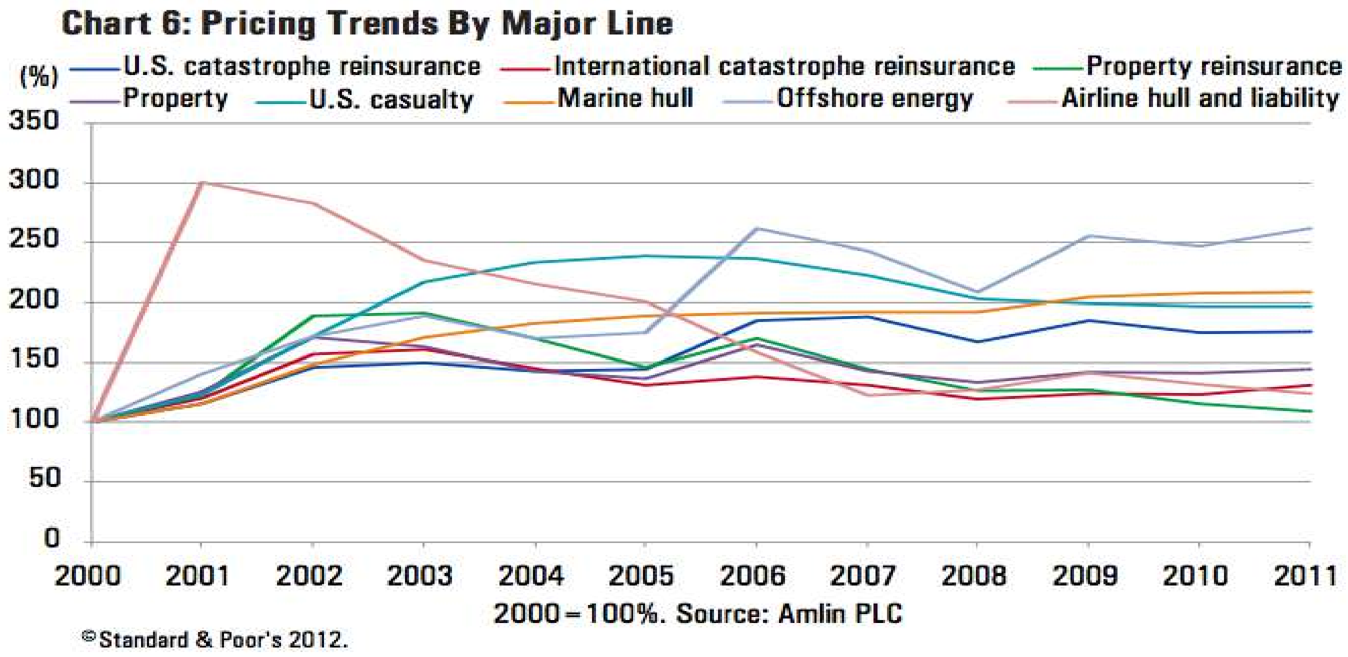


Market shares for the years 2000 to 2010

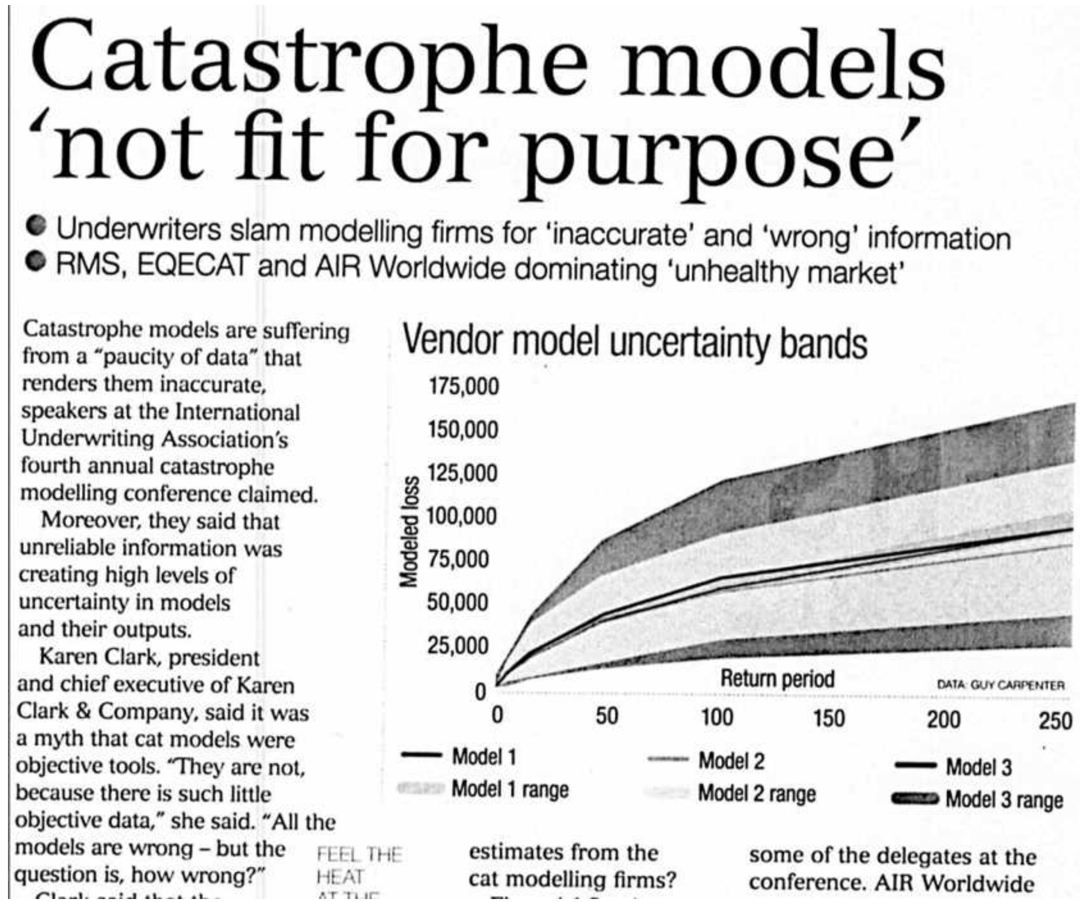
Source: Industry data

This chart reveals that international catastrophe reinsurance pricing has been inadequate <u>for the past 10 years</u>. It failed to rise after the largest reinsured catastrophe losses in history in 2005 and 2011. The inadequate premiums endanger reinsurers' solvency.

Pricing will increase and coverage terms decrease dramatically when <u>competition</u> among reinsurers and catastrophe bond investors causing the inadequate premium rates abates after major catastrophe losses.



Reinsurers are gambling in "nature's casino" in which catastrophes' frequency, severity and locations cannot be modeled reliably based on past experience.



Catastrophe models 'not fit for purpose'

- Underwriters slam modelling firms for 'inaccurate' and 'wrong' information
- RMS, EQECAT and AIR Worldwide dominating 'unhealthy market'

Catastrophe models are suffering from a "paucity of data" that renders them inaccurate, speakers at the International Underwriting Association's fourth annual catastrophe modelling conference claimed.

Moreover, they said that unreliable information was creating high levels of uncertainty in models and their outputs.

Karen Clark, president and chief executive of Karen Clark & Company, said it was a myth that cat models were objective tools. "They are not, because there is such little objective data," she said. "All the models are wrong – but the question is, how wrong?"

FEEL THE HEAT

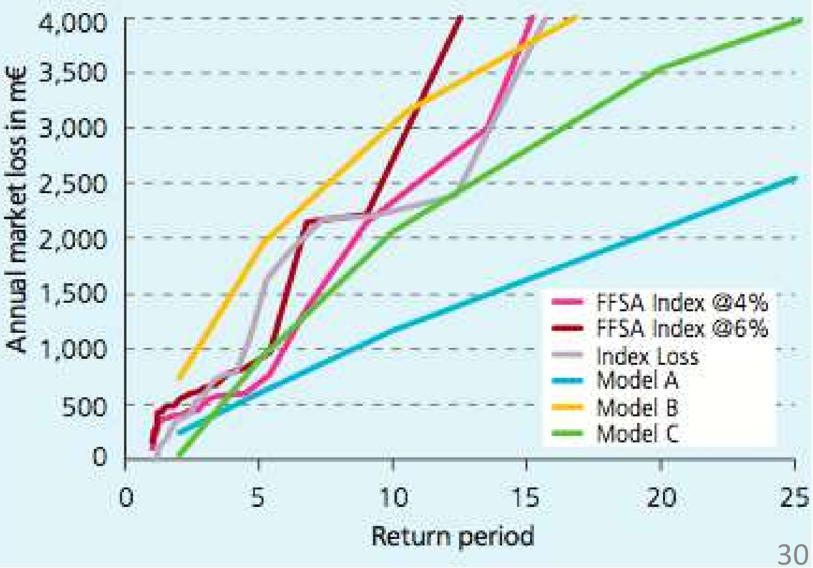
estimates from the cat modelling firms?

some of the delegates at the conference. AIR Worldwide

Frequency, severity and insured and reinsured financial damage <u>assumptions determine</u> the predictions of models. In the example below, note the differences between the 3 leading modeling agencies predictions and actual loss results.

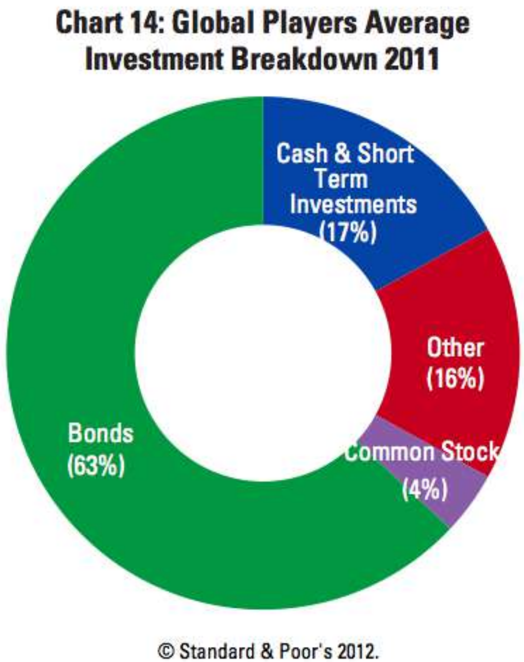
In the third level – model validation –, data or information are taken from outside of the modelling world to compare with model results. As an example, in Figure 5 we compare historical loss from the insurance association of France (FFSA) with 2 simple indexations (i.e. 4 and 6%) in order to represent a lower and an upper bound. We then compare with vendor models using the industry-wide losses, allowing us to observe and compare the range of results at low return periods. It seems in this case that model A is too low, whereas model C is too high. This can have serious implications if using models to price contracts attaching within that range. This type of analysis enables further challenge of the models and provides benchmarks to independently assess how they behave.

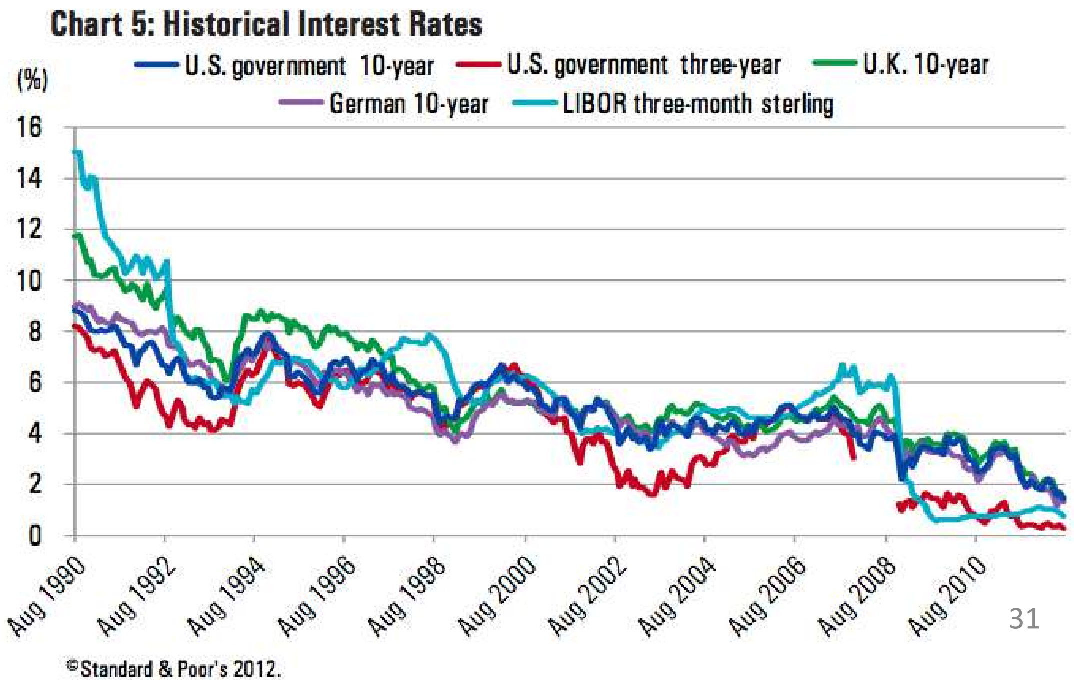
Figure 5: Comparison of modelled output with "real world" data from the FFSA, indexed in 2 ways



Reinsurers also have been suffering from low bond investment returns since 2008.

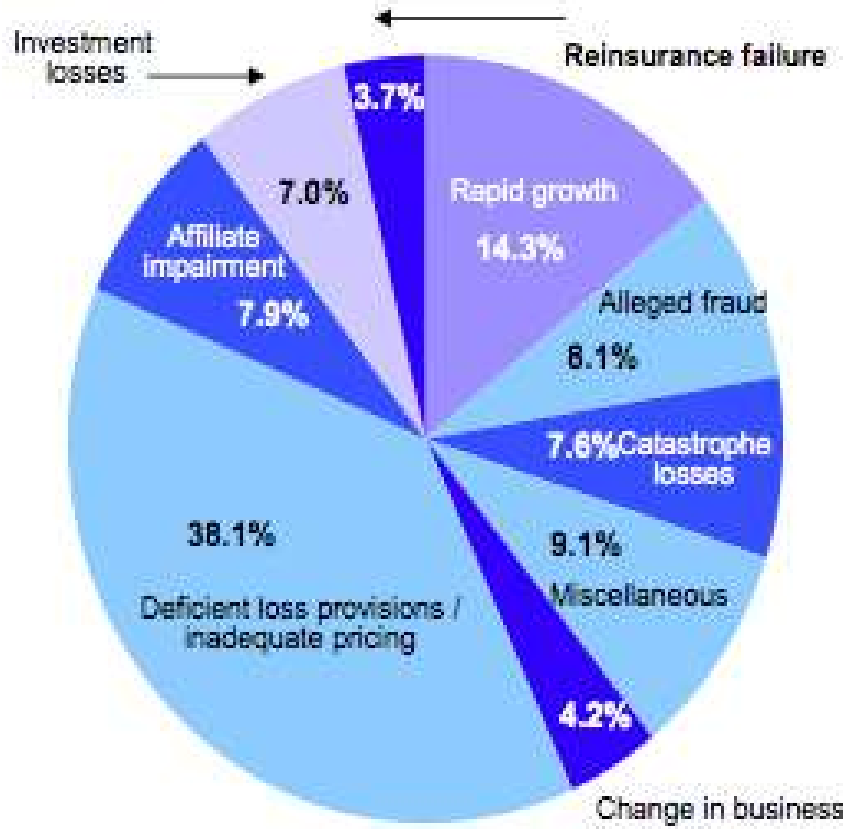
Reinsurers had approximately 63% of their assets in bonds and 4% in listed common stocks in 2012. In 2013 reinsurers' global average stock market investments increased from 4% to a dangerous 34% of their assets. This can result in the sudden simultaneous insolvency of reinsurers that will then impact others reinsurers' solvency.





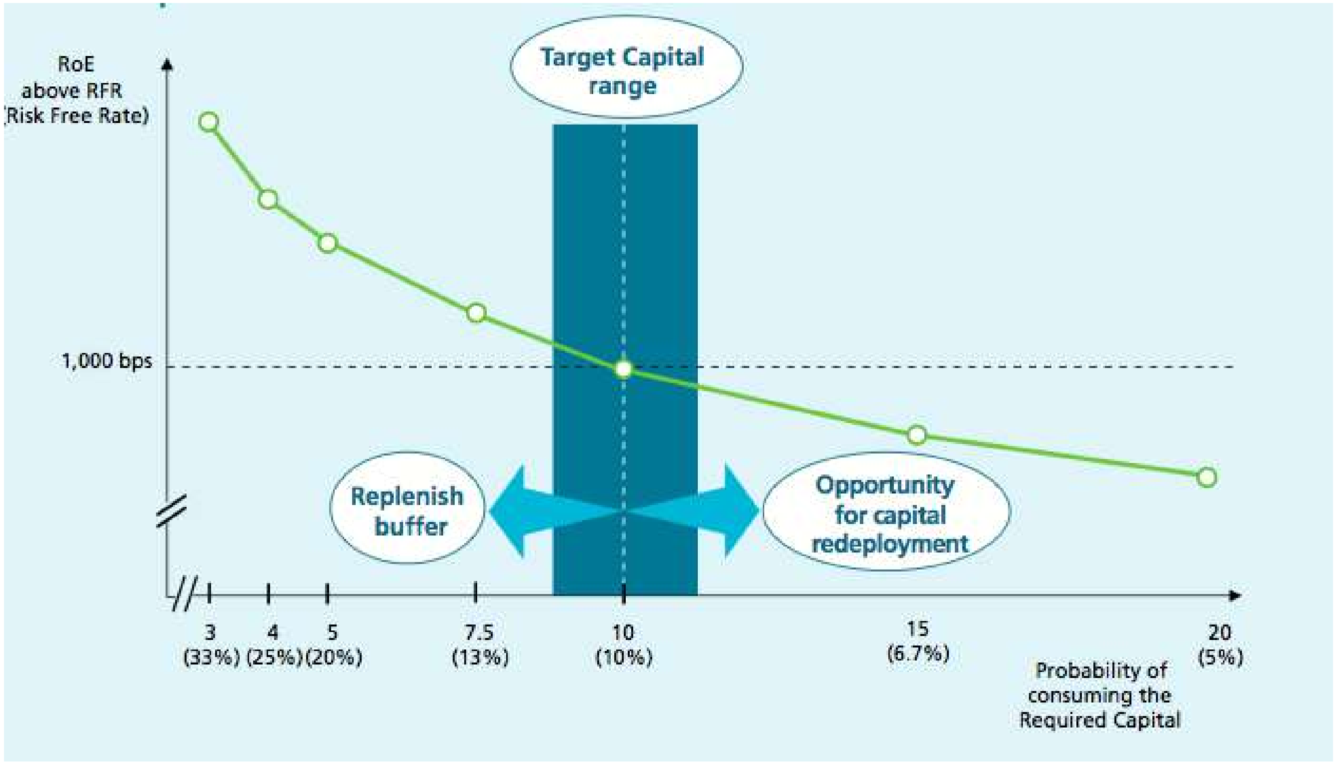
This chart reveals the plunges in value of stock market invested assets in 2001 and 2008-2009. Reinsurers' assets invested in stock markets will drop in the normal cycles of "<u>corrections</u>" and <u>plunge</u> after major catastrophe losses and in a financial crisis

This chart reveals the causes of non-life insurers' <u>insolvencies</u> in the US due to investment losses and reinsurance failure from 1969 to 2009



Reinsurers need to protect their long term solvency, but may take unwise risks in seeking to achieve their annually judged performance and profits

Moral hazard is possible in reinsurers risk/return trade-offs in the "new unpredictable normal" and the competition for market share.



The reinsurance industry's performance and profits in 2011

The worldwide reinsurance industry is:

- **Moderately profitable** overall (a 9% compound ROE since year-end 2000)
- **Volatile** (calendar year ROE's ranging between -9% and +20%)
- **Shrinking** (the 2011 market will be smaller than 2003's)
- **Well-capitalized** (leverage ratios down over 40% since 2001, even after the recent financial market declines)

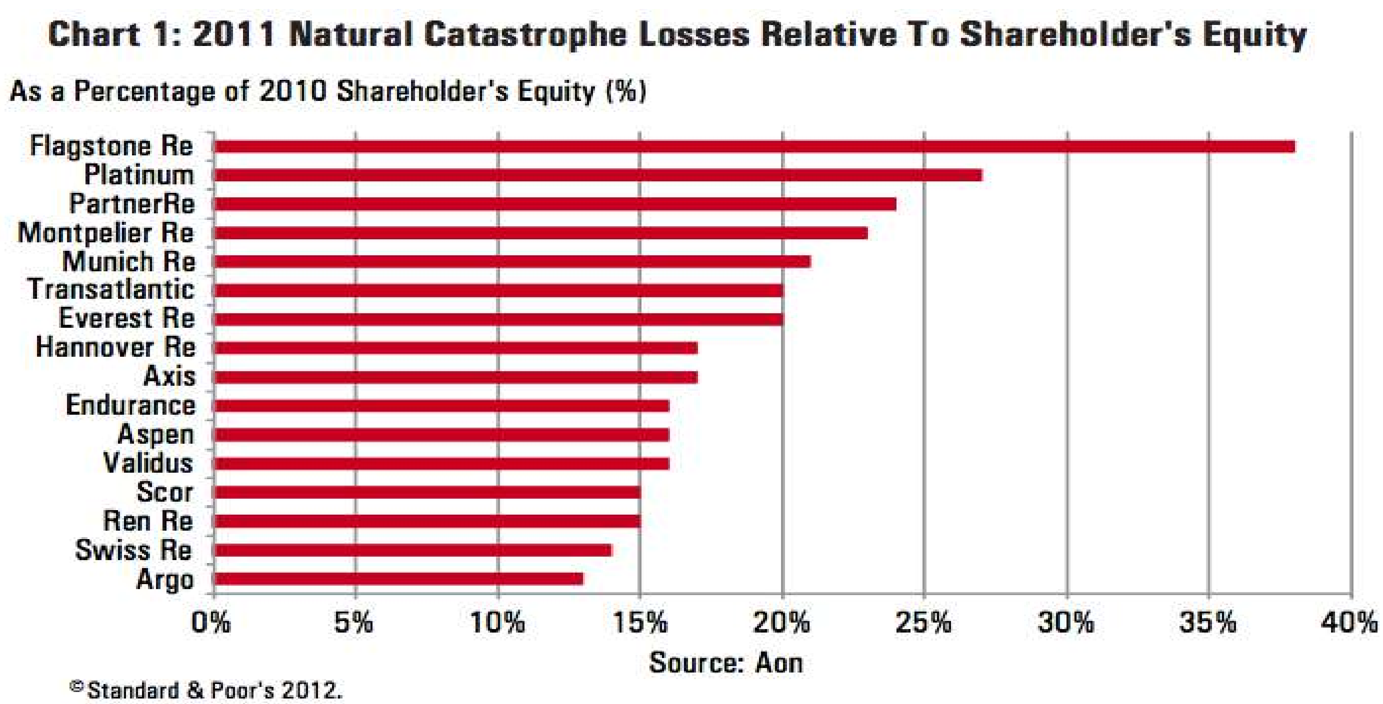
Adjusting reported data for foreign affiliates and exchange rates, Holborn estimates 2010 results of:

- **Net earned premiums** – $170 billion - $180 billion (down approximately 7%)
- **Combined ratio** – 88% - 90% (up at least two points)
- **Net income** – $20 billion to $26 billion (down, but still far above the long-term average levels)
- **Return on equity** – 10% to 12% (also down, but still strong)
- **Year-end capital** – $215 billion to $225 billion (GAAP basis except for RAA members)
- **Assets** – up, but only by 3% to 5%

Large industry events in 2010 added about 8 to 10 points to reinsurers' all lines loss ratios, about 3 to 5 points more than normal.

But, this chart reveals that in 2011 Swiss Re, Hannover Re and Munich Re had catastrophe losses that were 21%, 17% and 14% of their shareholder's equity respectively.

The chart also reveals the systemic danger of the reinsurance market's collapse as 16 reinsurers lost between 38% and 12% of their equity in catastrophe losses in 2011, the worst year so far in the "new unpredictable normal" of catastrophe losses.



A worldwide example of moral hazard

The world's largest insurance and reinsurance group with over $1 trillion in assets discovered in 2008 it was insolvent and would collapse because of its exposure to business with financial institutions trading securitized risk. It was "too big to fail" and the U.S. government with taxpayer funds had to provide $180 billion to prevent AIG's and the global financial system's collapse. In 2011 AIG remained second largest reinsurer with 14.9% of the global reinsurance market. That is a worldwide example of moral hazard.

AIG developed a major business in unregulated financial credit default swaps. It did not understand the risks it was taking in securitized risks. Its management failed in its responsibility to oversee the entire company, including AIG Financial Products.

A key problem is that it is impossible to know what aggregate limits each of the 200 reinsurers have or how much risk they reinsure with each other potentially exceeding individual reinsurers aggregate risk limits? Individual reinsurers assert that they limit their aggregate exposures thereby limiting their maximum possible losses. However, they will admit that they transfer and accept risks from other reinsurers.

What reinsurers are doing may be analogous to the "LMX Spiral" that pushed Lloyd's in 1982 to the brink of collapse and forced major financial and structural reforms in 1988. The existence of the LMX spiral in which reinsurers disastrously reinsured each other "was fairly well understood in London for several years before Lloyd's crisis, but there were only five published articles dealing with it".

Partner Re, the 8th largest reinsurer in 2012, is a revealing case study.

Its 2005 Annual Report indicated it's aggregate limits crucial to protecting its ability to pay losses and its solvency:

> "Risk: The risk that the aggregate losses of Partner Re from natural perils exceed the net premiums that we receive to cover such risks. Measure: (i) Aggregate limits for catastrophe losses in each of our defined exposure zones. (ii) Aggregate modeled net economic losses (losses less net premiums received) at a particular return period as a specified percentage of available economic capital. Tolerance: (i) Total aggregate exposed limits in any one zone for a loss from a single peril to be less than US$ 1.25 billion. (ii) Aggregate modeled losses (i.e. losses less net premiums received) of multiple events for approximately a 1-in-75 year return period to be less than US$ 750 million (i.e. 60% of maximum zonal aggregate limit). Present position (12.31.2005): (i) Limit $1.25 billion (ii) $ 750 million. At Partner Re, we are concerned with both the loss of capital due to a single large event and from **multiple (but perhaps smaller)** events in any year.

Partner Re's aggregate limits of US$ 1.25 billion/US$ 750 million in 2005 are questionable because reinsurers, modeling and rating agencies were shocked by massive reinsured losses from 3 major hurricanes occurring in 2005 that previously were thought to occur "only once in a 100 years" in the US.

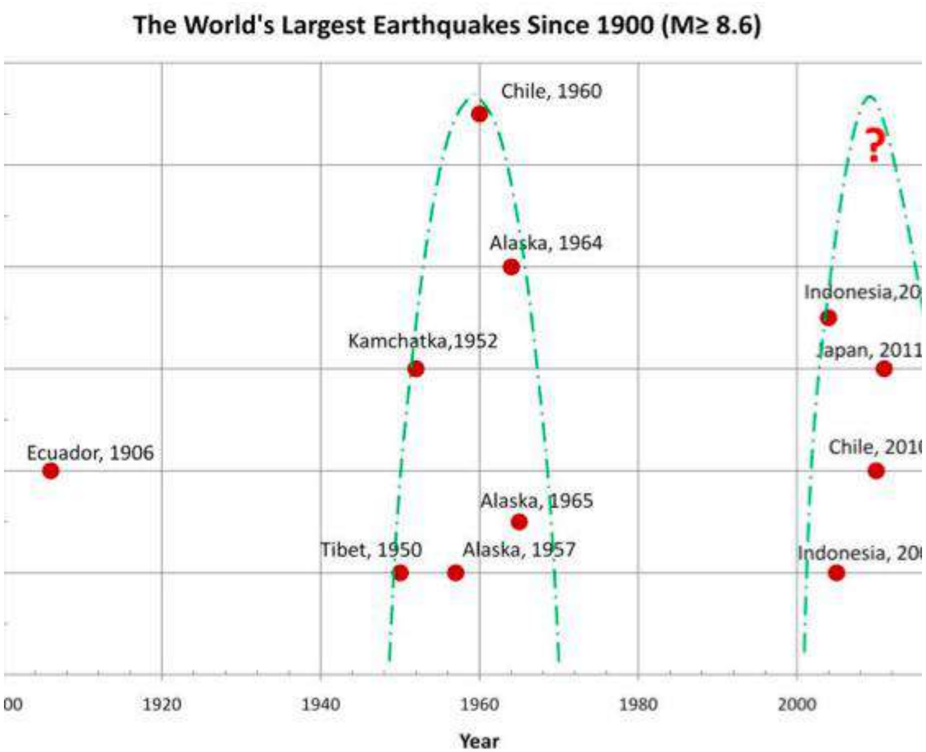
In 2010 Partner Re's CEO wrote an article,"Systemic Risk – What Risk?" Then in 2011 Partner Re lost 24% of its equity.

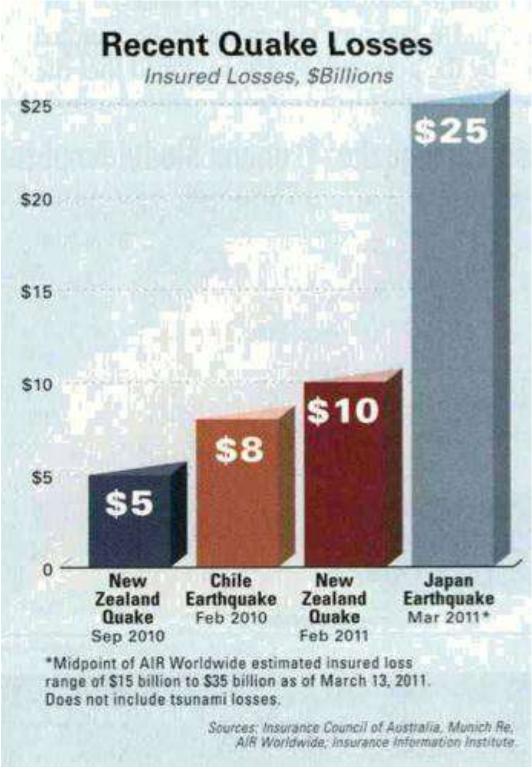
"We bear very little liquidity risk compared to banks and hedge funds. Non-life reinsurers operate at very low levels of leverage; typically we carry capital equivalent to 15% to 30% of our assets, at least double that of banks. This means we can withstand shock losses (1 in 50 or 100 year events) without damage to our claims paying capabilities.

Reinsurance is a fragmented industry which means that we can withstand the loss of any one participant in the industry and that capacity, on a global basis, will continue to be available so that risk can be transferred on a continuous basis. While there are some mixed insurance/reinsurance groups, there are no "financial conglomerates" left in the global non-life re/insurance industry of the size of AIG.

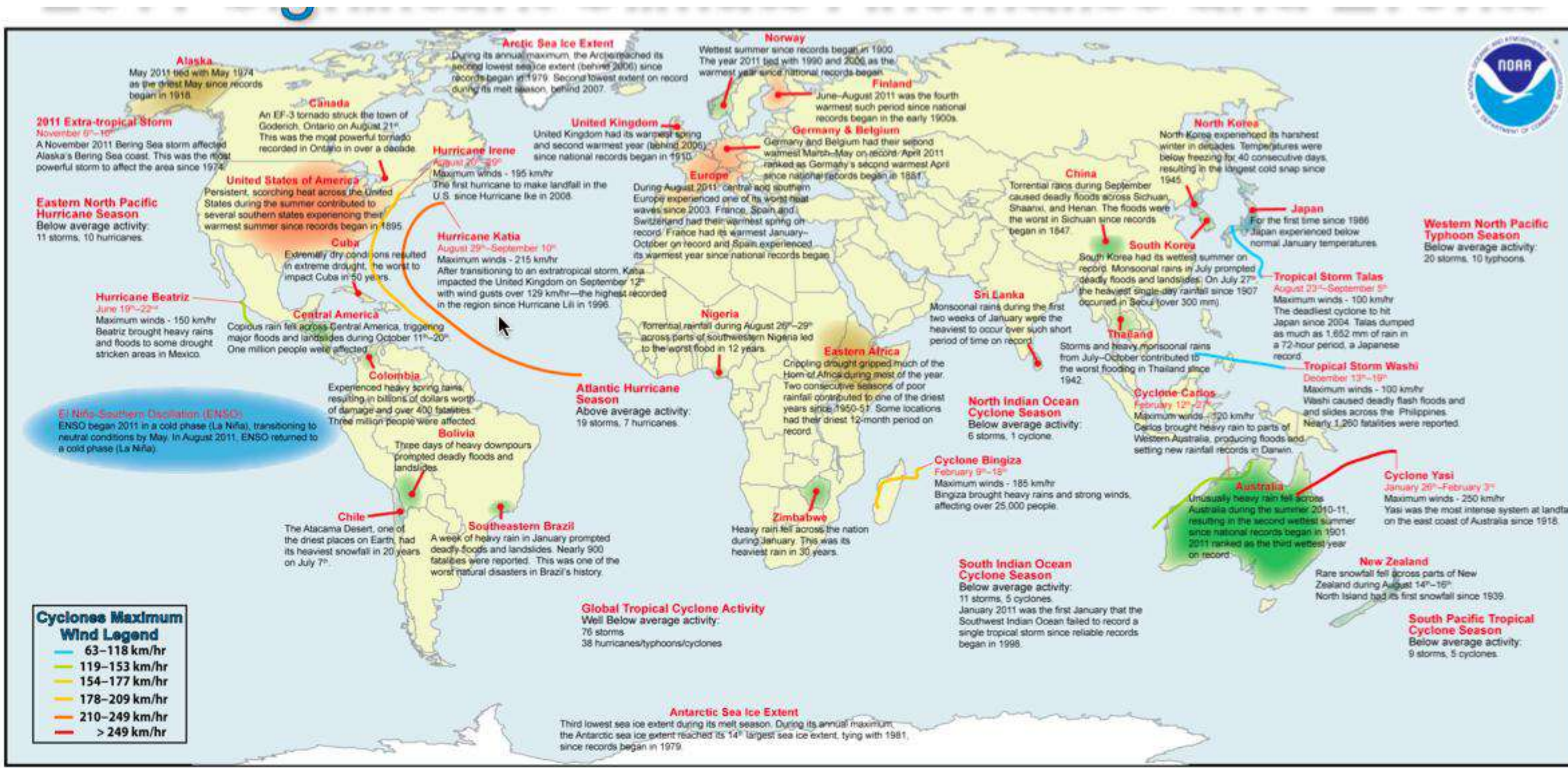
What we would like to see is a regulatory regime that has a light touch in all matters except solvency and that acknowledges the fundamental strength and resilience of the non-life re/insurance model. Non-life insurers and reinsurers must be allowed to function within a wide range of risk/return strategies and regulators need to allow companies to determine their place on the risk/return spectrum. It is up to us all to make that case."

The U.S. Geological Survey acknowledged after the unpredicted 2011 Japan earthquake, "We can't predict earthquakes, but "we can issue warnings 10 minutes after they occur." What is known is that major earthquakes do come in clusters and we are currently in a cycle of 8.6 or over earthquakes on the Richter Scale, which are extremely damaging particularly in urban and financial centers.

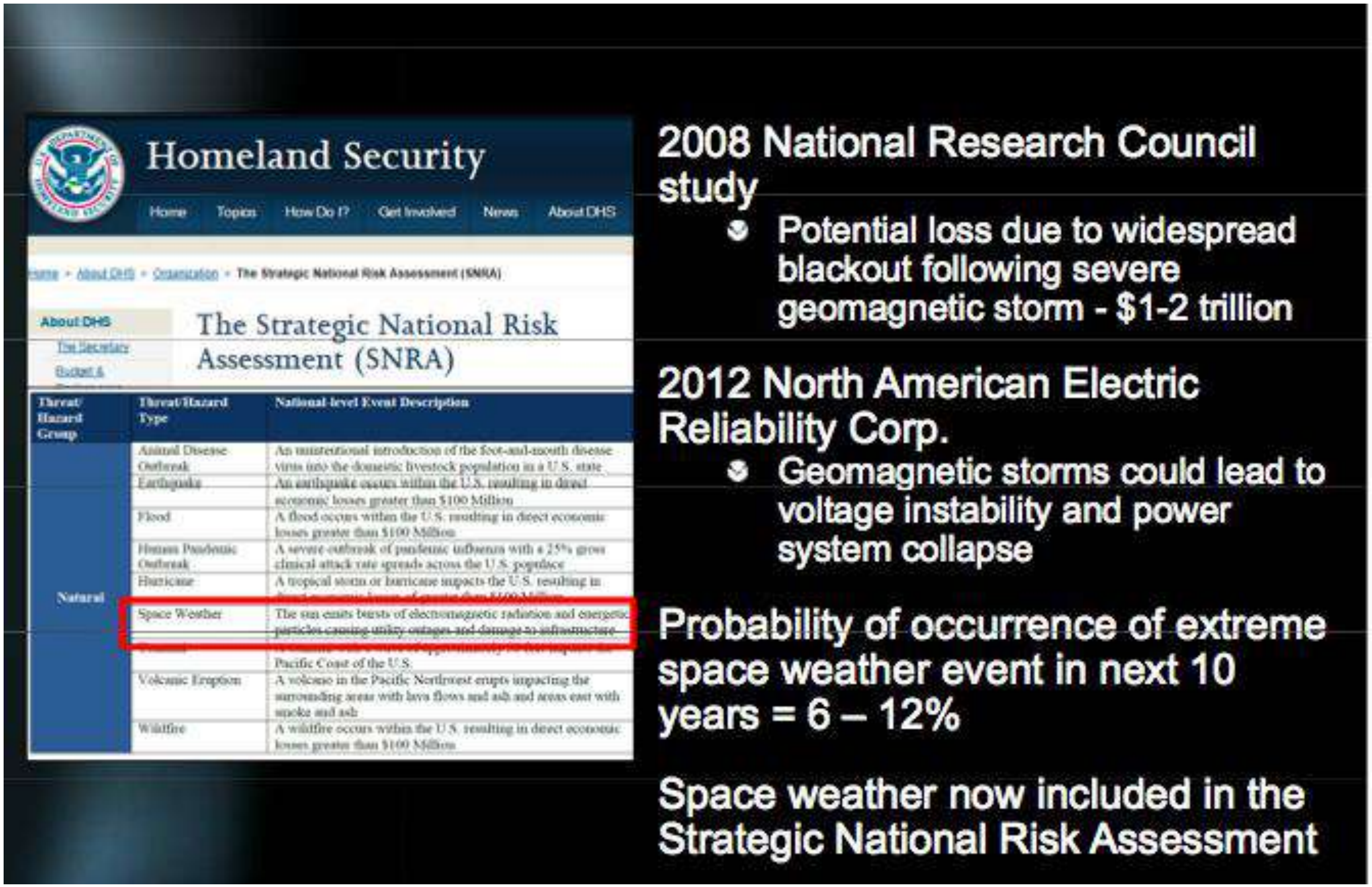




Also, no one can predict accurately the changing frequency, severity and locations of weather catastrophes and reinsured losses because the world's climate is rapidly changing. This chart reveals 2011's significant climate anomalies and events.



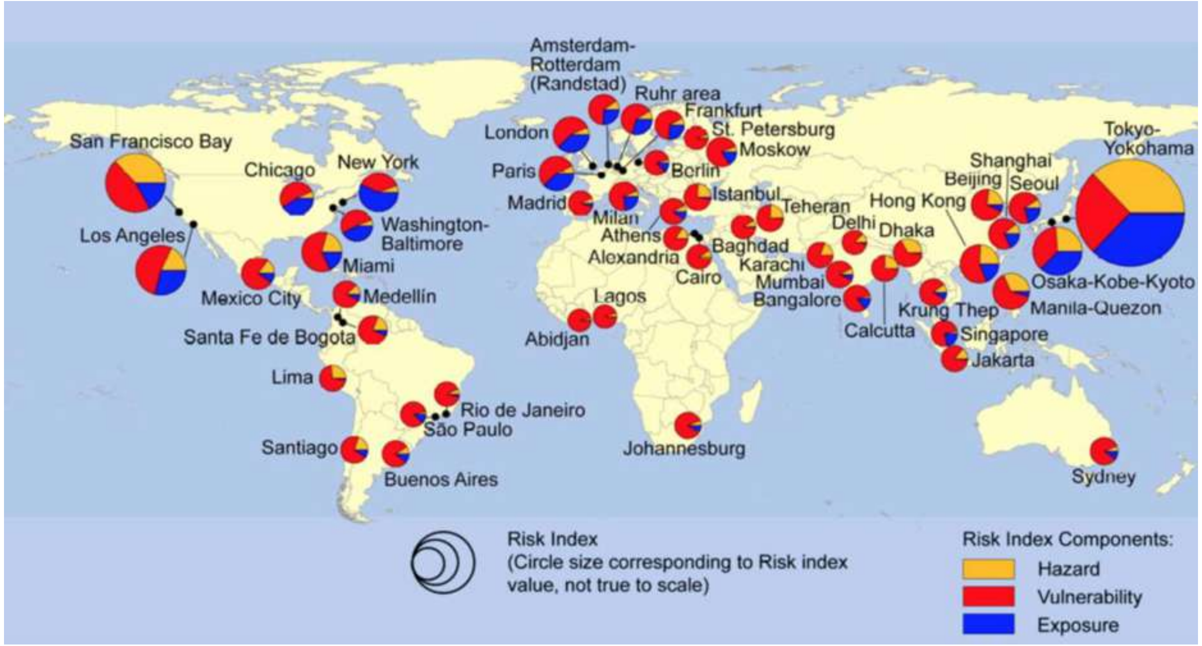
The US Government is very concerned about space weather catastrophe risk of US$ Trillions of losses from geomagnetic storms.



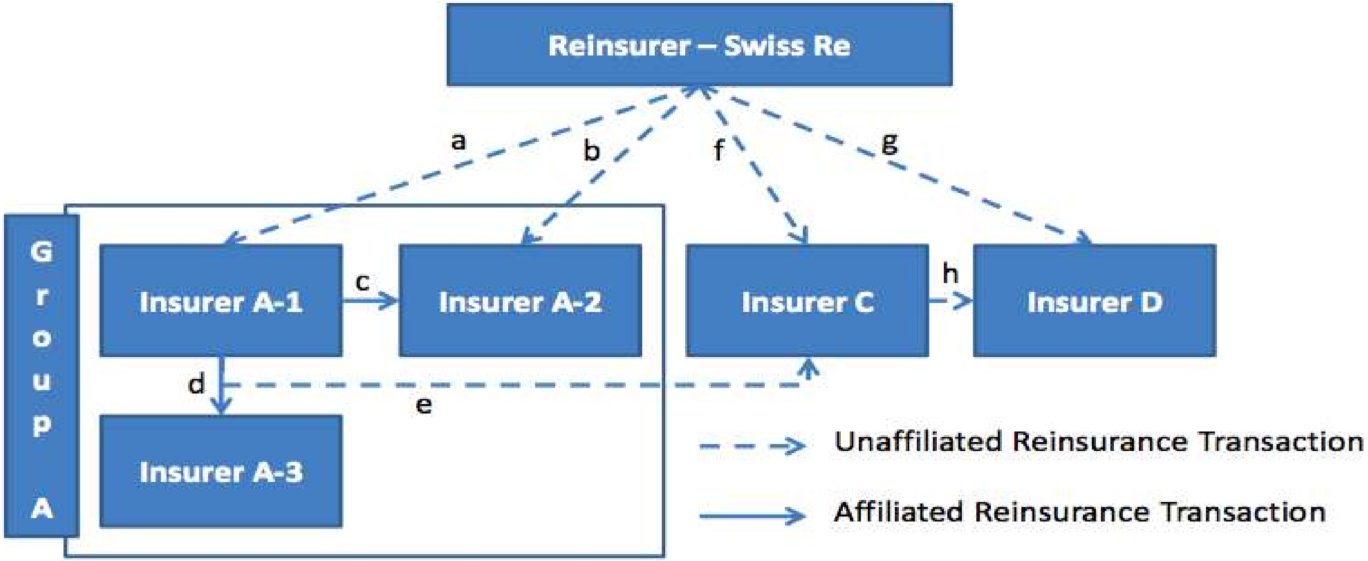
The US government sees a 6% to 12% probability of a geomagnetic storm within 10 years causing damage that may take 4 years to repair damage to critical nation infrastructure, which is now part of the US Strategic National Risk Assessment.

Reinsures assert that more catastrophe risks should be reinsured. What impact would the insolvency of a major reinsurer have on the reinsurance market and the world's economy?

This is Munich Re's Megacity Risk Index of catastrophe exposure. How can the reinsurance market with US$ 578 Billion of total assets pay a US$ 1 Trillion mega loss or series of US$ 100 Billion losses in a single or successive years given that in 2011 16 reinsurers lost between 12% and 38% of their equity when they were unable to accurately predict their losses?



A major reinsurer's insolvency would cause crises for other reinsurers and insurers insolvencies and a global financial crisis.



The Financial Times reported on November 29, 2009 that Swiss Re was on a list that regulators earmarked for cross-border supervision to try to reduce impact of a major companies failure like AIG's.

Nine global insurers have been named as globally significant by the Basel-based Financial Stability Board and the International Association of Insurance Supervisors. The insurers stand to face tighter regulation and potentially higher capital requirements because regulators have determined that they are critical to the functioning of the global financial system.

According to Swiss Re, "The current approach to SIFIs (systemically important financial institutions) focuses on individual institutions, identifying companies based on their asset-size or market share. However, this "too big" or "too interconnected" to fail approach should not apply equally to (re)insurance and banking because it disregards the differences in business models in banking and insurance. "Size" – in other words diversification – is actually a key element in the value proposition of insurers and reinsurers. In fact, diversification across different countries, lines of business and unrelated hazards allows global (re)insurers to act like "shock absorbers" – smoothing the impact of costly events and injecting capital into the real economy. This allows global (re)insurers to remove risk from the system, as opposed to being a source of risk."

Munich Re, Swiss Re and Hannover Re had high exposure to sovereign debt

All three global reinsurers have substantial amounts of investment in fixed-income securities, particularly with respect to government and "semi-government" (i.e., they have a direct or implied government guarantee) bonds. Fixed-income securities ranged between 65% and 89% of total investments for Munich Re, Swiss Re and Hannover Re as of year-end 2011. Government and semi-government bonds represented about half of all fixed-income investments for these three reinsurers; for Swiss Re, 80% of this exposure included non-Eurozone government bonds. Corporate bonds ranged between 10% and 16% of fixed-income investments, while covered bonds were 28% of fixed-income investments for Munich Re and 14% of fixed-income investments for Hannover Re. Covered bonds are debt instruments that are typically issued by a bank, whereby the investor has recourse to the issuer, as well as a preferential claim to a separate "cover pool" of mortgage loans, public-sector debt and loans or other high-quality assets.

Reinsurers "too big to fail" should <u>decrease</u> their catastrophe risk exposure to protect their solvency. Lower income nations should not depend on the catastrophe reinsurance and catastrophe bond programs organized by reinsurers.

Reinsurers competing in the emerging new catastrophe recovery finance system with the catastrophe bond investors cannot extract adequate international catastrophe risk pricing. To protect their solvency reinsurers should reduce their exposures in the catastrophe risk transfer market. However, catastrophe bond investors would fill the vacuum and seek the highest achievable profits and they can easily stop providing capital for catastrophe risk transfer and recovery financing. It is not their core business.

<u>Reinsurers are being driven out of the catastrophe risk market by market forces far beyond their traditional control. Many reinsurers may end up limited to making lower profits managing catastrophe bond investors capital.</u>

Foreign reinsurers reliability has been reduced by the US threatening China with economic <u>sanctions and war</u>.

In April 2014 the US State Department publicly stated that China would be subject to sanction (as Russia is) <u>if China used "force or coercive tactics to pursue its </u>territorial claims" and the US military stated it would "<u>swiftly recapture</u>" the Diaoya Islands, <u>which would be acts of war</u>. The US has not made sanctions threats against not against Japan, Philippines, Vietnam etc. if they create a confront with China in the South China Sea. In the event of China or such other nations causing such conflict, China could find <u>reinsurers ability to pay is prohibited by sanctions </u>and that China is technically at war with the <u>US and its NATO allies making China's assets in such jurisdictions subject to seizure</u>.

US Marines to defend islands

Global Times | 2014-4-14 0:38:01

By Global Times

E-mail Print

If China occupied the Diaoyu Islands, US Marines in the Pacific would swiftly recapture them, the commander of marines deployed in Japan assured, The Japan Times reported on Sunday.

"It's a very, very small collection of small islands," the US military newspaper Stars and Stripes quoted Lt. Gen. John Wissler as saying Friday at a breakfast with defense reporters in Washington.

"You wouldn't maybe even necessarily have to put somebody on that island until you had eliminated the threat, so to speak. And that's where that whole integration of our full capabilities as a Navy-Marine Corps team would be of value," Wissler said.

April 4, 2014 7:04 am

US warns China not to use force in maritime disputes

By Demetri Sevastopulo in Hong Kong

The Obama administration has warned Beijing not to use force or coercive tactics to pursue its territorial claims in Asia, saying that sanctions placed on Russia for annexing Crimea should have a "chilling effect" on any such plans in China.

Daniel Russel, the top east Asia official at the state department, on Thursday said China's neighbours, particularly in southeast Asia, had heightened concerns about the "possibility of China increasingly threatening force or other forms of coercion to advance their territorial interests" following Russia's actions in Crimea.

Part 3

Introduction to the Whyte Daimin Framework and Models for China's Insurance

Pilot Projects

China finds unexpected answers to "unsolvable problems."

Whyte Daimin Catastrophe and Agriculture
Risk Transfer and Recovery Finance Models Framework

China's agriculture and catastrophe risks

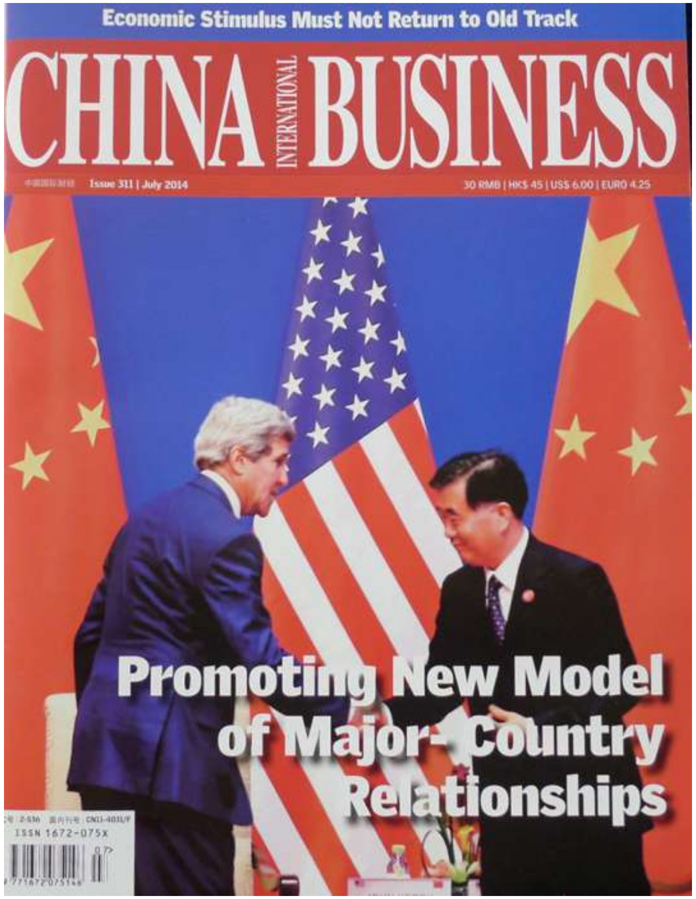
Limited risk transfer to state owned insurers and reinsurers

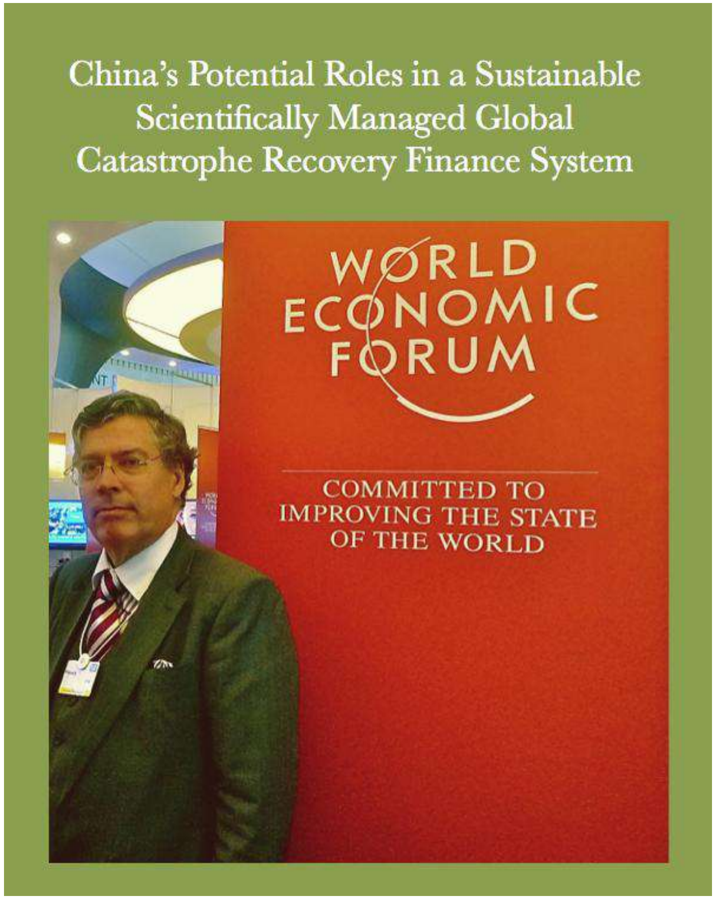
Some geographic diversification risk transfer with creditworthy international reinsurers

Cat bond and ILS risk transfer and recovery finance initially in the Chinese and later into international capital markets

Transfer and hedging of risks and financing of losses in the international commodity futures markets

The Whyte Daimin Framework and Models designed to support commercial solutions in China's Catastrophe and Agriculture Pilot Projects, Catastrophe, Agricultural and Health Insurance Exchanges, ASEAN RE and BRICS RE and China's Special Economic Zones are pioneered in 2014-2015 articles and 2015 textbook: *China's Potential Roles in a Sustainable Scientifically Managed Global Catastrophe Recovery Finance System*.





Whyte Daimin Models for China's Insurance Pilot Projects were introduced in *China State Finance Magazine* in Mandarin and *China International Business Magazine* in English in 2014-2015

Creating China's Catastrophe and Agricultural Reinsurance Finance Industries

By JOHN MILLIGAN-WHYTE

中国财政
CHINA STATE FINANCE

CHINA STATE FINANCE

创建巨灾和农业再保险金融产业

Municipal Catastrophe Bond Model:

In the Shenzhen and other pilot projects, instead of using unreliable reinsurance coverage that cannot be safely scaled nationally throughout China, a Municipal Government or other government entity or a Chinese insurer issues a parametric catastrophe bond covering all catastrophe perils for 2.5 billion RMB or far larger amount that is fully collateralized that initially only Chinese citizens can invest in with an attractive interest payment return per annum. Investors loose capital on a sliding scale but not interest payments if any covered multi-peril catastrophe occurs. In a later stage foreign investors can be allowed to invest on the same terms as Chinese investors.

“怀戴模式”

市政巨灾债券 (Municipal Cat Bond)发行示图

市政府发行资本总额为25亿元，3年期年利率为3.99%的巨灾债券（或其他市政府和投资者可接受的利率水平）

⇨

如果债券涵盖的巨灾在3年里发生，市政府获得来自投资者价值25亿元的支付，而成本仅为3年的利息支出。如果巨灾没有发生，保障成本依然是3年的利息支出。

⇨

债券向中国和国外的投资者销售，这25亿元有全额抵押担保。债券涵盖的巨灾损失通过商业手段转移到投资者身上。政府仅仅补贴债券的利息支出。

Catastrophe Contingent Capital Arrangement Model:

It does not use reinsurance or a catastrophe bond and provides fully collateralized risk transfer and catastrophe recovery funding of 2.5 billion RMB or far larger amount. The Shenzhen Municipal or other government or a Chinese insurer uses a contingent capital structure transferring catastrophe risk to investors providing fully collateralized parametric recovery financing that initially only Chinese citizens can invest in with an attractive interest payment return per annum. Investors loose capital in a sliding scale but not interest payments if a covered multi-peril catastrophe occurs. In a later stage foreign investors will be allowed to invest on the same terms as Chinese investors.


Use Finance Solutions Instead of Insurance and Reinsurance in China's Catastrophe Pilot Projects

中国财政 CHINA STATE FINANCE

在巨灾保险试点中采用金融融资方案

“怀戴模式”

巨灾应急信托帐户(Contingent Capital)运作示图

当合同定义的巨灾发生时，中国的银行向签署了巨灾联结应急资本融资承诺书的地方政府支付25亿元的巨灾恢复应急资本融资工具，因为投资者在灾前已向银行提供的全额抵押担保保证金25亿元

⇨

灾前，在中国的银行向地方政府提供25亿元的巨灾联结应急资本融资工具的承诺书中注明只有在合同定义的巨灾发生时才会产生支付

⇨

地方政府向投资者支付具有吸引力的利率以补偿他们向中国的银行提供的25亿元保证金所承担的风险。银行的应急资本融资工具的支付行为只有在合同定义的巨灾发生时才会产生

The structure of a catastrophe contingent capital facility from a bank to a municipal government funded by a fully collateralized guarantee from investors

Investors provide a fully collateralized 2.5 billion RMB payment guarantee paid to the Chinese bank when it pays the municipal government the catasrophe recovery contingent capital finance facility triggered by the occurrence of defined catastrophes

➡

Chinese bank then provides the municipal government with a 2.5 billion RMB catastrophe triggered continggent capital finance facility commitment in which the payment is only triggered by the occurrence of defined catastrophes

➡

The municipal government pays attractive interest rate to investors for investor's guarantee of the 2.5 billion RMB payment to the Chinese bank providing the contingent capital finance facility triggered only by the occurrence of the occurrence of defined catastrophe

PART 4

Whyte Daimin Models for

farmers' income security in China's Agriculture Insurance Pilot Projects and BRICS RE.

Whyte Daimin Models also provide <u>profitable</u> risk transfer for Farmers Income Security in China’s Agriculture Insurance Pilot Projects and BRICS RE.

Creating China's Catastrophe and Agricultural Reinsurance Finance Industries

by JOHN MILLIGAN-WHYTE

China can be the world leader in investing in and commercially financing massive recovery costs from catastrophes including major earthquakes, storms, droughts and floods. Once China has these financing mechanisms working well domestically, it can scale them internationally. This is the first of a series of articles explaining how this can be done.

China's historic agricultural losses are 6% to 10% annually, but peak losses can reach 25% or more. China has the highest exposure to earthquake risk in the world and its growing urban concentrations of people and industry create huge risks and recovery costs. China has far too much geographic concentration of catastrophe risk. The China Insurance Regulatory Commission indicates that less than 1% of earthquake recovery costs are covered by insurance, which hinders reconstruction. Recovery costs are currently financed by Chinese government entities. The peak risks and recovery costs are too massive for Chinese insurance companies or the international reinsurance companies to finance. Only the global capital markets have the size, turnover and investor base to invest in and finance China's peak risks commercially. Financing catastrophe risks in the capital markets is a major global emerging financial industry.

China's trading partners and particularly developing nations do not yet have the catastrophe recovery financing they need to protect their economies. Approximately 60% of global economic losses from natural and man-made disasters are uninsured. China is the only nation with the combination of credible financial resources, government controlled economic management capabilities and huge domestic market size needed to play the leading role in developing the global agricultural loss and catastrophe recovery finance industries. It has US$3.83 trillion in foreign governments' currency and debt securities that need to recirculate in the global economy. Investing in reinsurance companies and the new asset class of insurance linked securities are an important new diversification of China's investments.

China's central bank's State Administration of Foreign Exchange has purchased 3% of Munich Re, the world's largest insurance and reinsurance group. Investments in reinsurance and insurance linked securities have the merit of being non-invasive. "There are only 10 countries that accepted the largest net foreign direct investment from China between 2004 and 2010. In 2011, US$32.8 billion worth of investments proposed by China failed to be completed. That's more than half the US$60.1 billion in overseas deals made by Chinese companies in 2011. But investments by Chinese companies have generated political backlash in some countries, and several big deals have fallen victim to regulatory concerns" according to China's Ministry of Commerce.

China's reinsurance investments are good for the whole world. We live in new eras of global financial and economic instability and of the increasing frequency and severity of economic and insured losses from natural catastrophes. The *Financial Times* summed up these new eras danger. "The world must prepare to be shocked. The 2008 financial crisis illustrated the possible consequences of excessively disturbing an obscure corner of a complex system. The result then was a swift, large and unpredicted dislocation in the way the system worked. Adaptation to the outcome was not an option and massive intervention was

How to Finance China's Farmers' Income and Consumer Food Price Stability

by JOHN & DAI MIN MILLIGAN-WHYTE

China's Farmers' Income and Consumer Food Price Stability can Only Be Achieved Using Capital Markets Financing and Commodity Markets' Hedging

This is the third article in our series recommending how China can create the catastrophe and agriculture protection financing industries that the State Council is seeking to develop. The series' thesis is that in order to protect China's social harmony, economic growth and national security, China could become the world's largest consumer, provider and investor in catastrophe and agriculture loss recovery financing. China can fill these roles in the reinsurance, capital and commodity markets due to the huge financing costs of the catastrophe and agriculture loss protection it needs, its control of the world's largest catastrophe and agriculture insurance market and the huge amount of capital required to finance its agriculture and catastrophe risks. China is the only entity in the world with the required combination of massive need, market and capital.

China has US$ 3.83 trillion of foreign debt and currency reserves that require profitable investment and recirculation internationally. Reliable sources of capital are required to finance China's farmers' income and consumer food price stability. The capital required is larger than all the capital in the international reinsurance market. The international capital markets are larger but too unstable for China to safely entrust with providing its farmers' income and consumer food price stability.

Global food prices increased 74% from 2005 to 2012. From 1990 to 2005 they increased only 2.3%. Protecting China's social stability and national security requires its governments to subsidize consumer food prices. China's agriculture losses have averaged 6% to 10% annually. But worldwide climate change is having major effects on the frequency, severity and locations of temperature, droughts and floods impacting farmers' incomes and consumer food price stability. State Council has approved farmer's income stability programs. China also needs to create programs to protect its 1.5 billion consumers food price stability.

A New Scientifically Managed Model with Chinese Characteristics is Needed to Protect China's farmers' Income and Consumer Food Price Stability

This article recommends that China create a new model with Chinese characteristics for financing farmers' income and consumer food price stability. China's innovative model can use a fully integrated combination of weather-based insurance, reinsurance, insurance linked securities (ILS) financing in the capital markets, and hedging strategies in the commodity markets to make the costs of protecting China's farmers' income and consumer price stability affordable.

It is unrealistic for foreigners to expect and misguided for China to design its regulatory system using foreign models not suited to the legal, economic and cultural conditions in China. Foreign models and products also have features that are not working well according to the World Bank's 2010 Report on *Government Support to Agriculture Insurance*, "Overall, government sponsored Multi-Peril Crop Insurance programs have been disappointing. Limited insurance penetration despite high premium subsidies; consistent underestimation of the catastrophic risks involved in agriculture; poor financial performance; inappropriate pricing; uncontrolled moral hazard; and adverse selection are among the key endemic problems underlying agricultural insurance programs worldwide, in both developed and developing countries."

Reinsurance companies' business models are currently in crisis. Climate change is making losses harder to model. The financial crisis is resulting in low investment income. Competition within the reinsurance market and from the ILS industry is contributing to the pricing of some risks being inadequate. Reinsurers may have to risk their capital accepting actuarially inadequate premiums, give up market share or increasingly become managers of ILS investors rather than their own capital. All of these put pressure on their profitability.

Nonetheless, many Chinese may feel a lack of confidence because they do not have as much experience with insurance and reinsurance as their foreign counterparts. China can mitigate the risk of it spending this decade trying to adapt agriculture insurance and reinsurance products used in developed countries to China's realities. It can use new and better strategies to transfer and finance its risks. It can develop an innovative regulatory system using capital and commodity market financing to fill deficiencies in insurance and reinsurance protection strategies.

An innovative new insurance linked securities or "ILS" industry is growing rapidly because catastrophe and agriculture risks are increasingly too large and expensive for the reinsurance market to finance. ILS protection is often cheaper and fully collateralized at inception reducing default risk. ILS

China should <u>nationally pool</u> agricultural risks because a regional approach concentrates risk.

This chart reveals the expected <u>MPCI</u> losses and market share of crop yield.

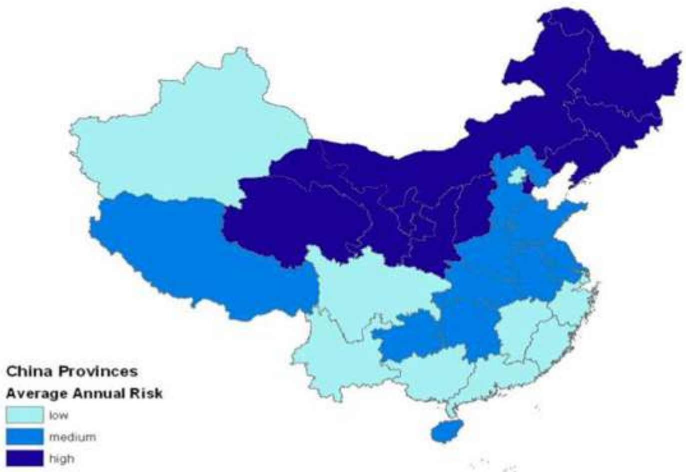
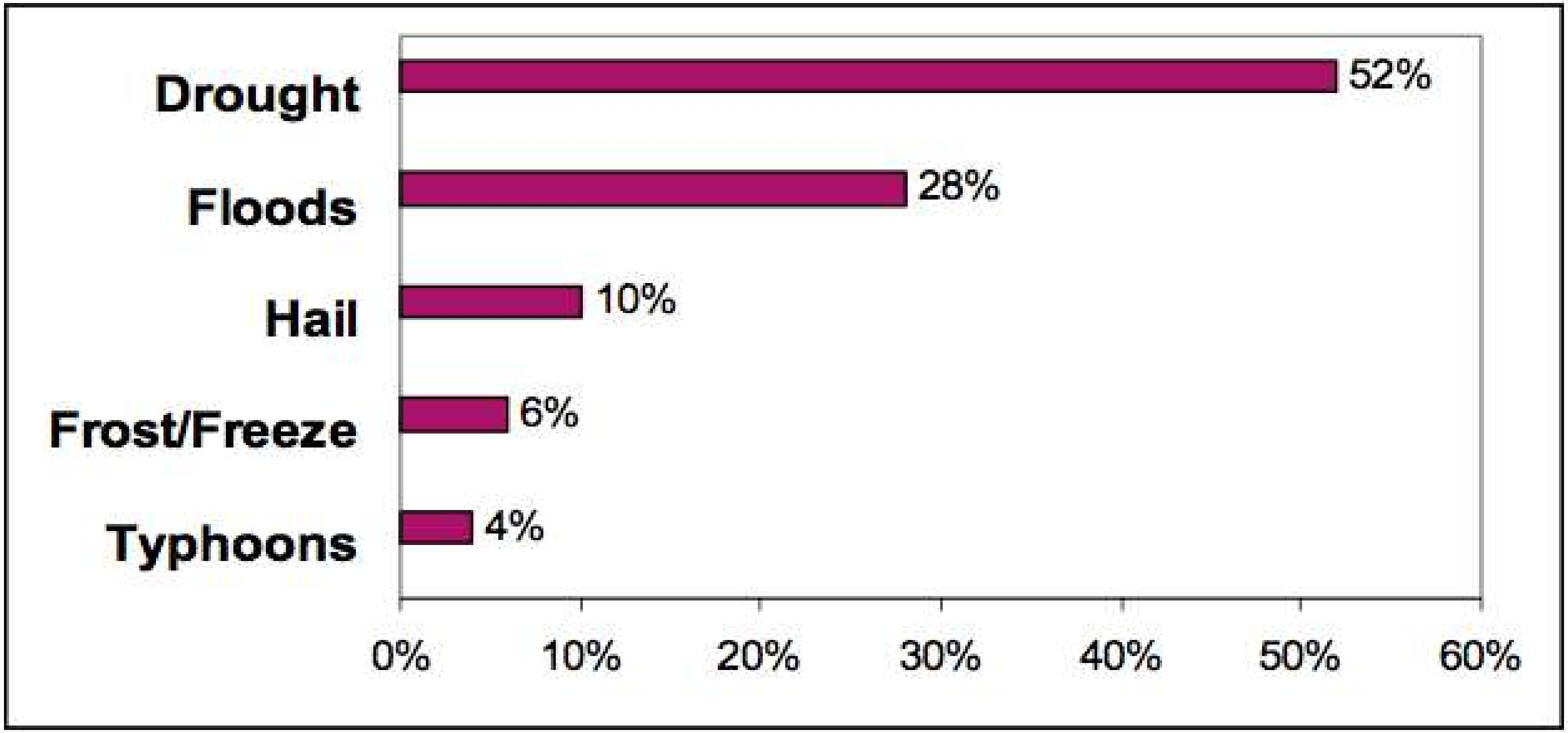


Table 2.5: Market Share of Crop Value in China with Share of Cause of Loss

Province	Market Share	Percent of Average Annual Loss by Cause of Loss			
		Drought	Floods	Hail	Freeze
Shandong	10.4%	71%	15%	11%	3%
Henan	8.8%	63%	24%	9%	3%
Jiangsu	6.9%	36%	40%	12%	10%
Hebei	6.3%	72%	10%	16%	2%
Sichuan	5.4%	52%	32%	11%	4%
Guangdong	5.3%	33%	42%	10%	9%
Hubei	5.1%	43%	43%	7%	6%
Hunan	4.8%	45%	44%	6%	4%
Anhui	4.6%	41%	45%	6%	7%
Guangxi	3.4%	53%	32%	7%	5%
Heilongjiang	3.4%	53%	34%	6%	6%
Liaoning	3.4%	69%	22%	7%	2%
Zhejiang	3.3%	26%	47%	11%	6%
Fujian	2.9%	32%	44%	7%	10%
Yunnan	2.9%	50%	24%	12%	13%
Xinjiang	2.8%	49%	12%	25%	13%
Jiangxi	2.7%	36%	49%	7%	6%
Jilin	2.7%	59%	28%	9%	4%
Shaanxi	2.3%	71%	17%	7%	4%
Inner Mongolia	2.3%	74%	12%	9%	5%
Gansu	1.8%	72%	10%	11%	7%
Guizhou	1.8%	51%	25%	17%	6%
Shanxi	1.6%	80%	7%	8%	4%
Hainan	0.9%	37%	37%	5%	7%
Shanghai	0.6%	12%	47%	12%	25%
Tianjin	0.5%	72%	10%	17%	0%
Beijing	0.5%	69%	8%	21%	1%
Ningxia	0.4%	71%	8%	11%	10%
Qinghai	0.2%	63%	8%	23%	5%
Tibet	0.1%	59%	20%	9%	11%

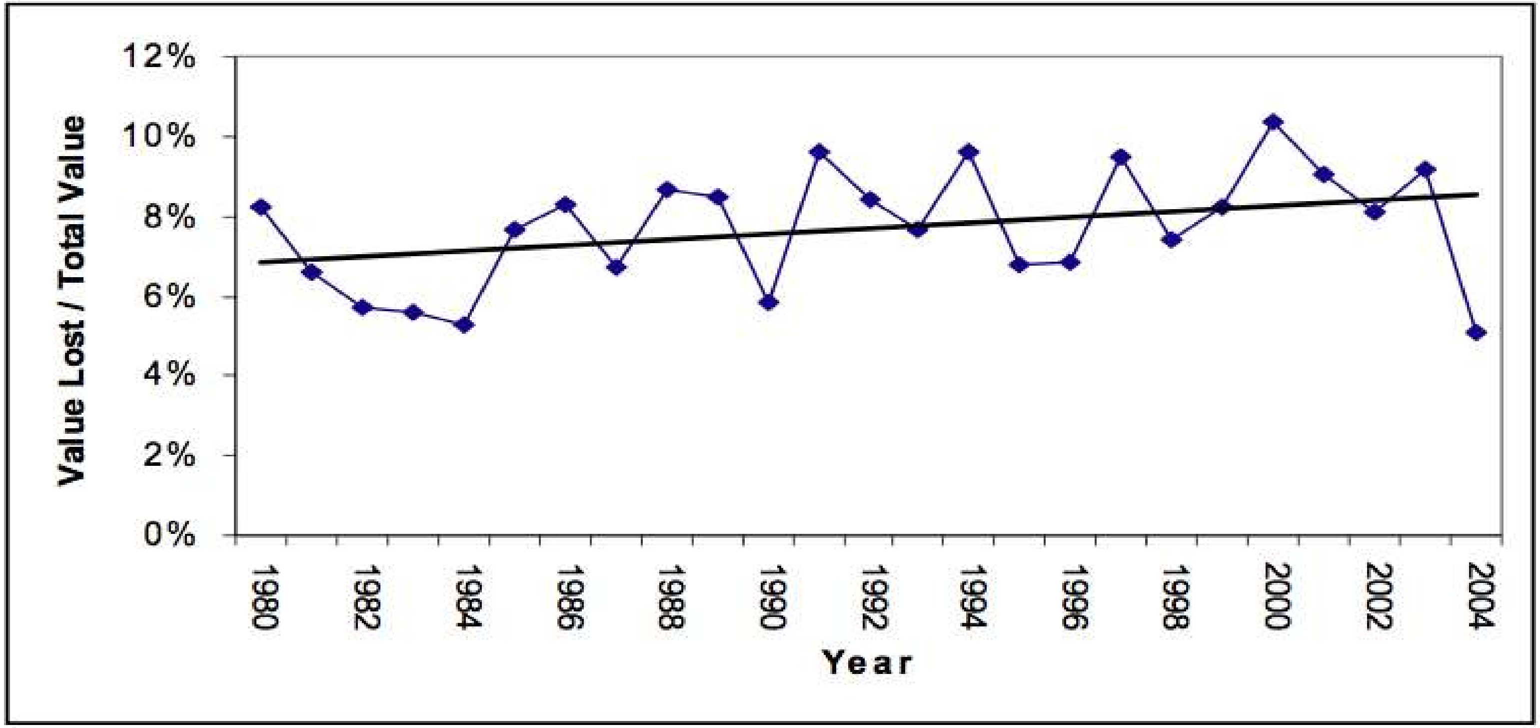
ource: author's analysis of cause of loss data.

Very profitably insurable percentages of types of losses agriculture losses nationally in China historically are simpler than the China's current farmers' income security strategies achieve. **<u>What are the prospectively percentages of losses because of climate change?</u>**

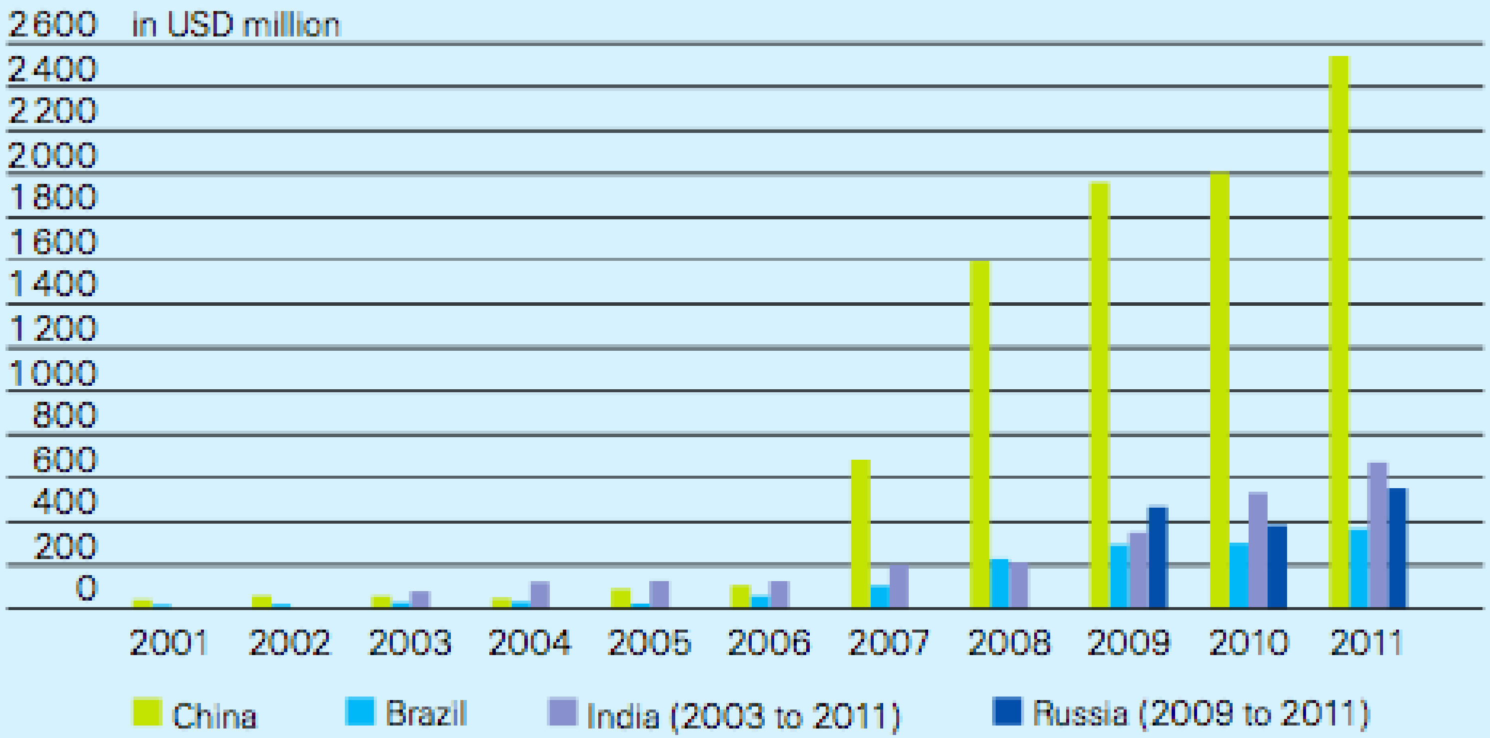


Historically trend in losses for crops in China 1980-2002 were very insurable. <u>What does this chart look like updated from 2003 to 2014?</u>

Figure 1.1. Trend in losses for crops in China from 1980 to 2002



In 2013 Chinese government subsidies in agriculture insurance were 30 billion RMB and payments to farmers were only 20 billion RMB and profitability for insurers was problematic. When China implements Whyte Daimin Models for transferring agriculture loss risks, China will have a scalable model in in China and internationally in BRICS RE.



Note: Figures in parentheses denote available data span for India and Russia.

Sources: National insurance regulation authorities, Swiss Re Economic Research and Consulting.

PART 5

Whyte Daimin Recommends

Advanced Working Models for

China's Agricultural and Catastrophe Risk Exchanges

The best working model for CIRC, China Economic Zone Development and the State Council's needs and goals is the complex of electronic exchanges in Chicago at the CME Group

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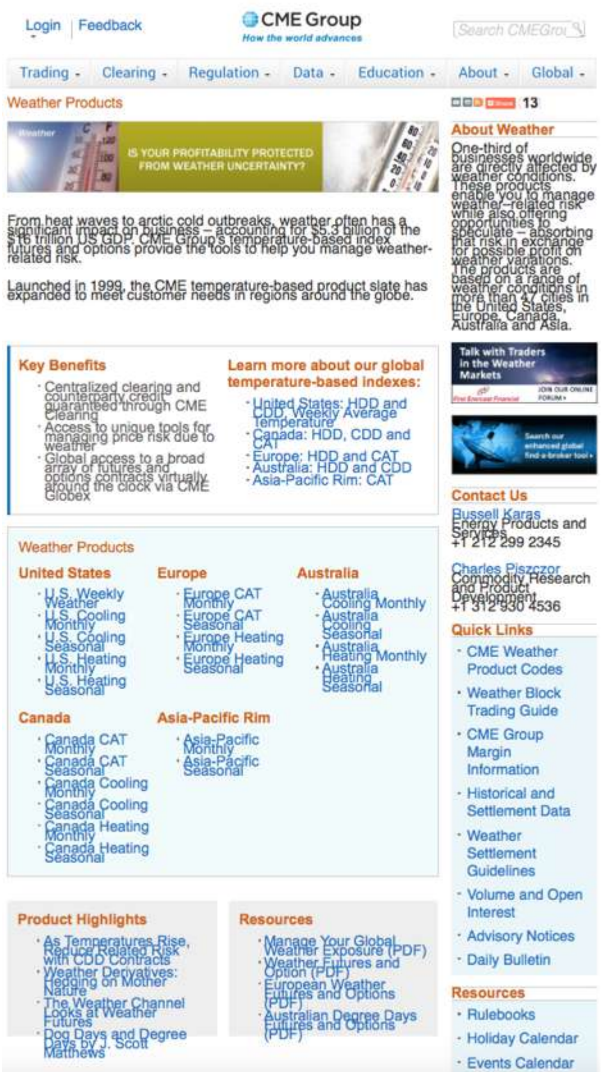
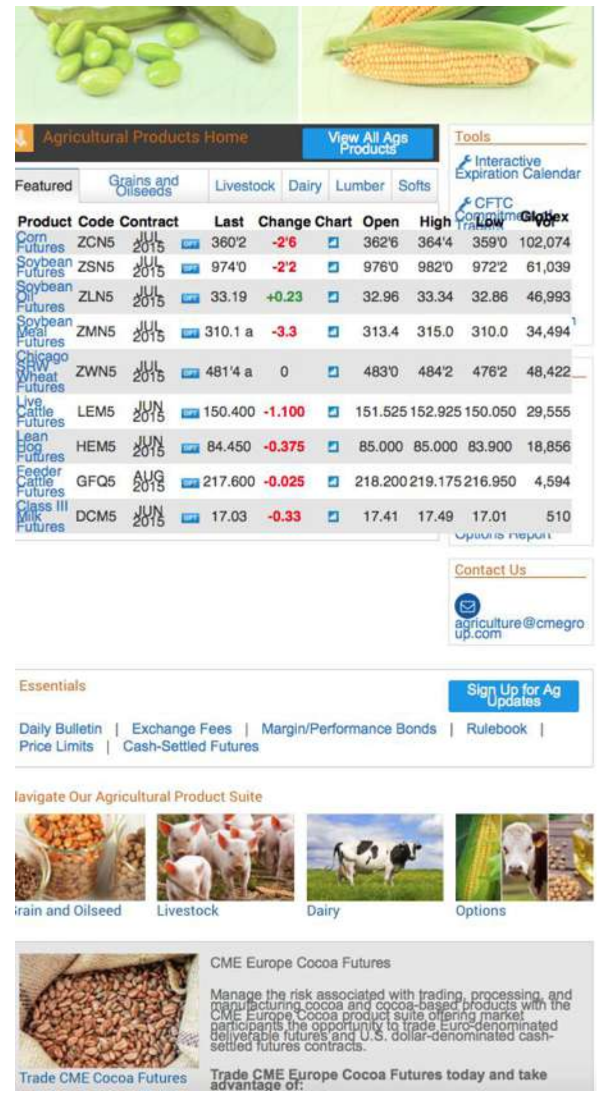
View a listing of CME Group products and their original trading dates.

CME operates weather and agriculture risk transfer exchanges





China should develop a weather risk transfer and recovery commercial financing system. The Chicago Climate Exchange was destroyed by US insurance industry resistance, the 2008 financial crisis impact and ultimate failure of the cap and trade model for dealing carbon credits to try to deal with the economic impact of climate change.

CCX success until 2008 financial crisis

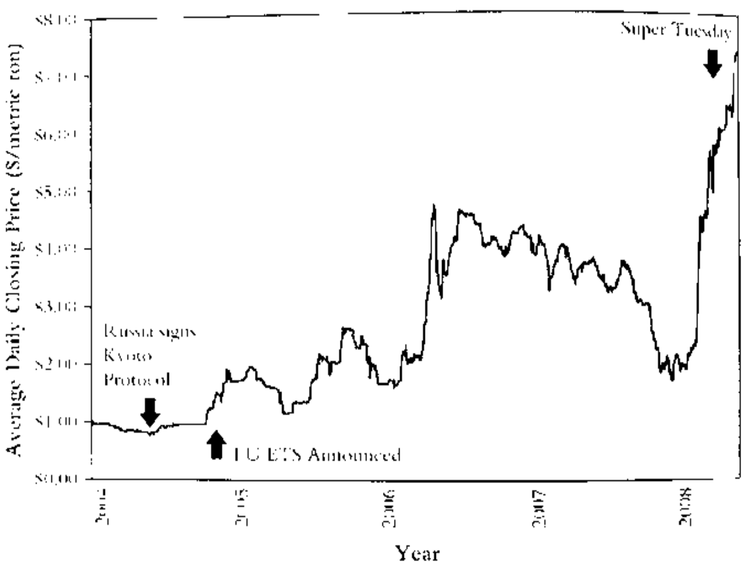
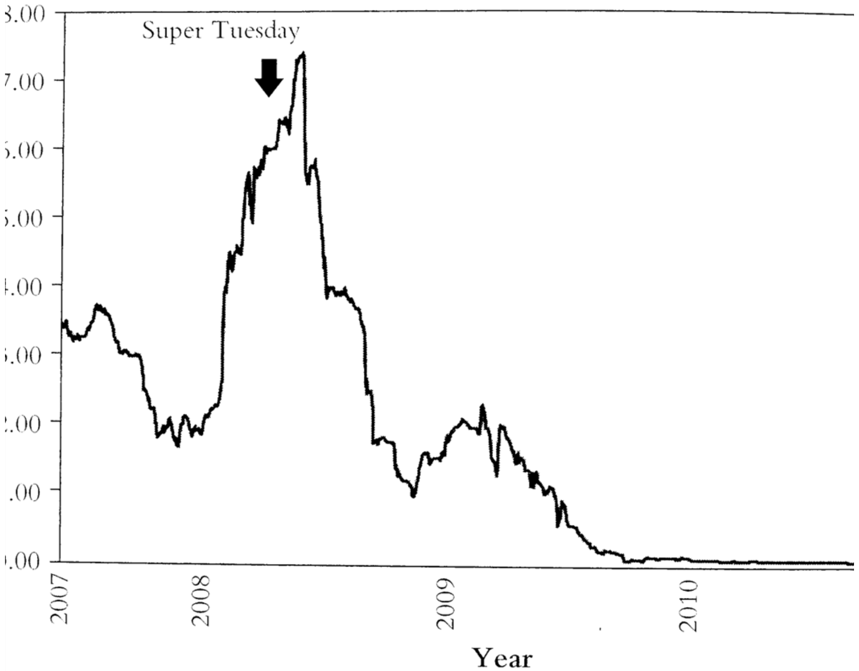


Figure 19.2 Price per Metric Ton of CO_2 (2003–2008)

Note: CFI = 100 metric tons of CO_2.

Source: Data from IntercontinentalExchange.

CCX failure due to 2008 financial crisis



re 20.1 CCX CFI Closing Prices (2007–2011)

Data from IntercontinentalExchange.

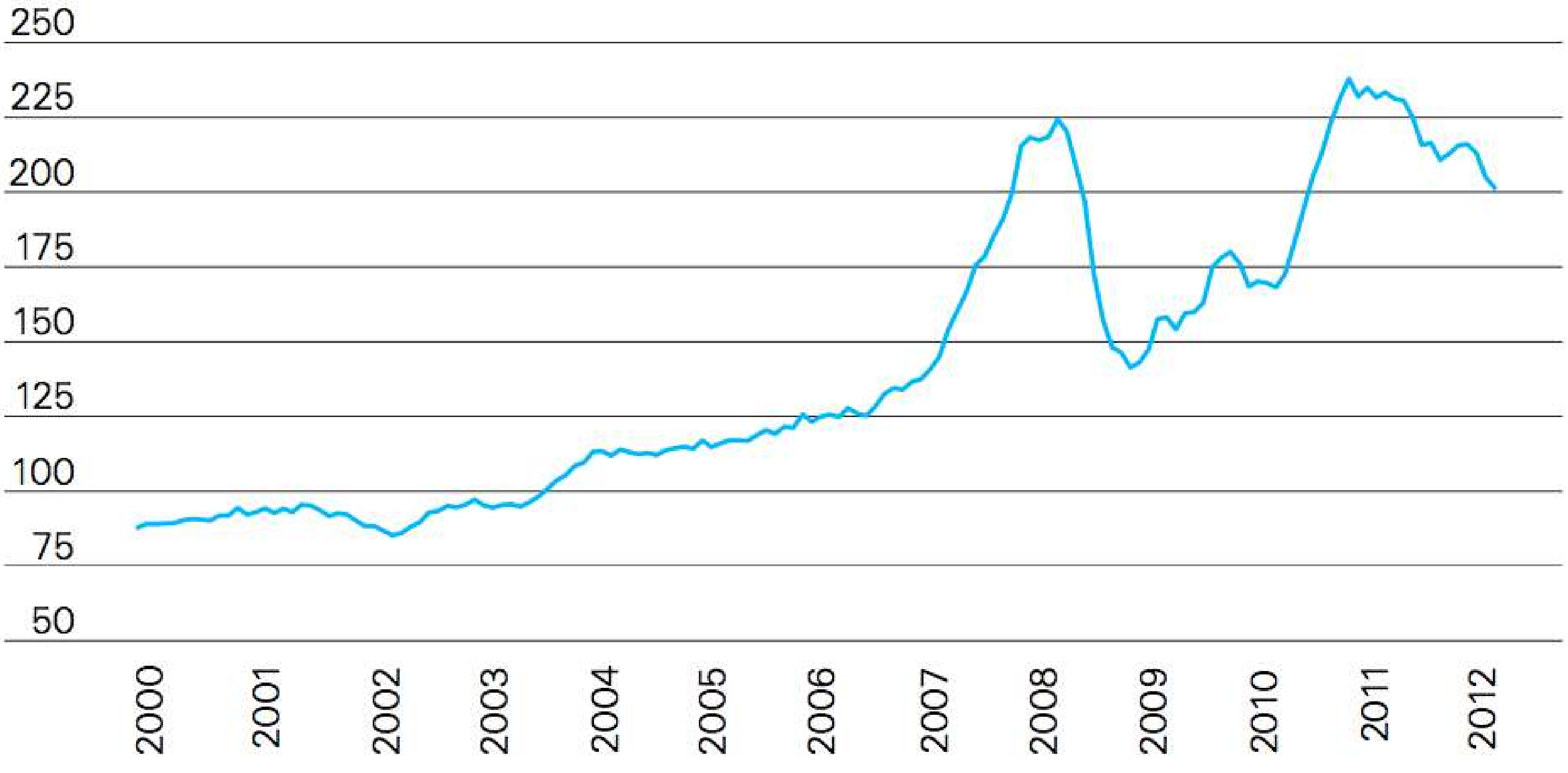
China subsidizes agriculture prices. This chart reveals the comparison of international and China wheat prices.

How can China's government continue to achieve and finance these subsidies essential to political and economic stability?

Source: OECD, 2009.

This chart reveals the food prices crisis,
it rose 2.3% between 1990-2005 but <u>74% in 2005-2012</u>

(Swiss Re Sigma 2013 Report)



Source: Nominal monthly food price index, the Food and Agriculture Organisation of the United Nations (FAO).

This chart reveals the relationships of Food, Metals & Energy Prices 2000-2012 in the World Economic Forum 2013 Annual Report. The correlation suggests major opportunities to hedge food prices using food, energy and mineral futures and other major commodity futures prices.

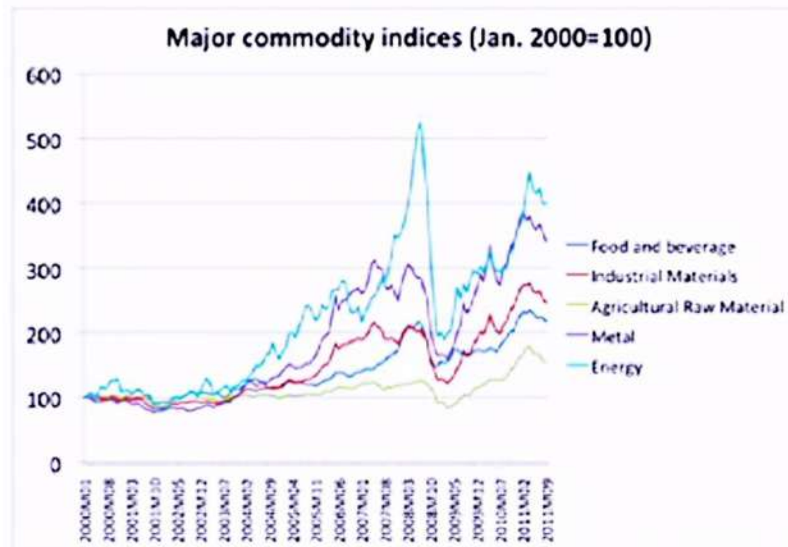
Whyte Daimin Models focus on developing these solutions to farmer income and consumer price stability problems.

In the last ten years, food prices have more than doubled, while metals and energy prices have more than tripled

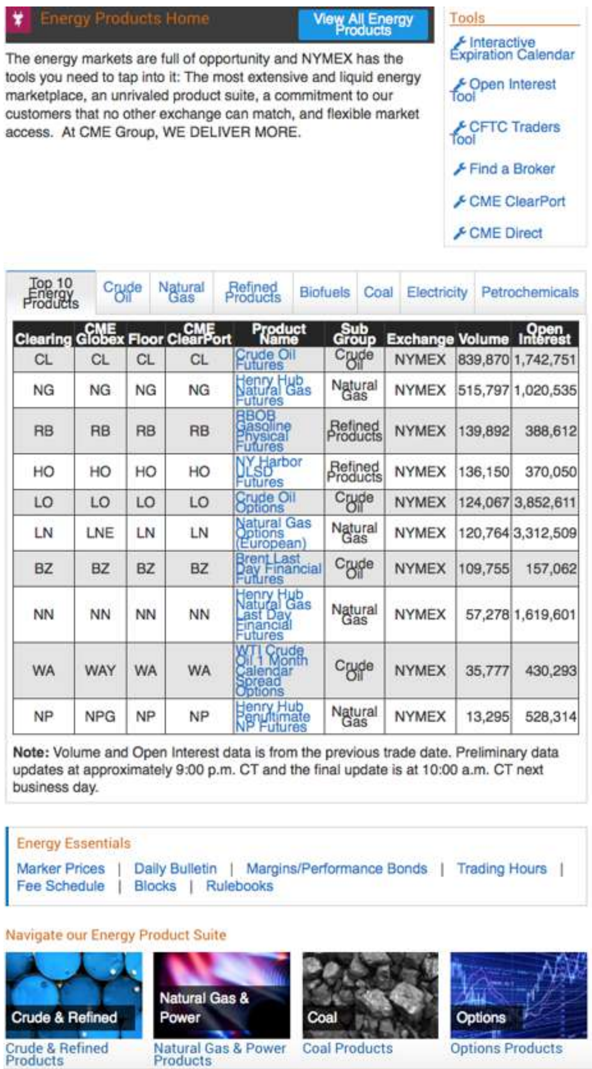
Natural resource inflation

Source: IMF

Note: Food Price Index includes Cereal, Vegetable Oils, Meat, Seafood, Sugar, Bananas, and Oranges Price Indices; Metals Price Index includes Copper, Aluminum, Iron Ore, Tin, Nickel, Zinc, Lead, and Uranium Price Indices; Fuel (Energy) Index includes Crude oil (petroleum), Natural Gas, and Coal Price Indices.



CME operates energy and metals risk transfer exchanges. The correlations movements of food, energy and metal prices may enable very large weather and catastrophe risks to be hedged in these exchange mechanism also.



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- CME ClearPort
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Top 10 Energy Products | Crude Oil | Natural Gas | Refined Products | Biofuels | Coal | Electricity | Petrochemicals

Clearing	CME Globex	Floor	CME ClearPort	Product Name	Sub Group	Exchange	Volume	Open Interest
CL	CL	CL	CL	Crude Oil Futures	Crude Oil	NYMEX	839,870	1,742,751
NG	NG	NG	NG	Henry Hub Natural Gas Futures	Natural Gas	NYMEX	515,797	1,020,535
RB	RB	RB	RB	RBOB Gasoline Physical Futures	Refined Products	NYMEX	139,892	388,612
HO	HO	HO	HO	NY Harbor ULSD Futures	Refined Products	NYMEX	136,150	370,050
LO	LO	LO	LO	Crude Oil Options	Crude Oil	NYMEX	124,067	3,852,611
LN	LNE	LN	LN	Natural Gas Options (European)	Natural Gas	NYMEX	120,764	3,312,509
BZ	BZ	BZ	BZ	Brent Last Day Financial Futures	Crude Oil	NYMEX	109,755	157,062
NN	NN	NN	NN	Henry Hub Natural Gas Last Day Financial Futures	Natural Gas	NYMEX	57,278	1,619,601
WA	WAY	WA	WA	WTI Crude Oil 1 Month Calendar Spread Options	Crude Oil	NYMEX	35,777	430,293
NP	NPG	NP	NP	Henry Hub Penultimate NP Futures	Natural Gas	NYMEX	13,295	528,314

Note: Volume and Open Interest data is from the previous trade date. Preliminary data updates at approximately 9:00 p.m. CT and the final update is at 10:00 a.m. CT next business day.

Energy Essentials

Marker Prices | Daily Bulletin | Margins/Performance Bonds | Trading Hours | Fee Schedule | Blocks | Rulebooks

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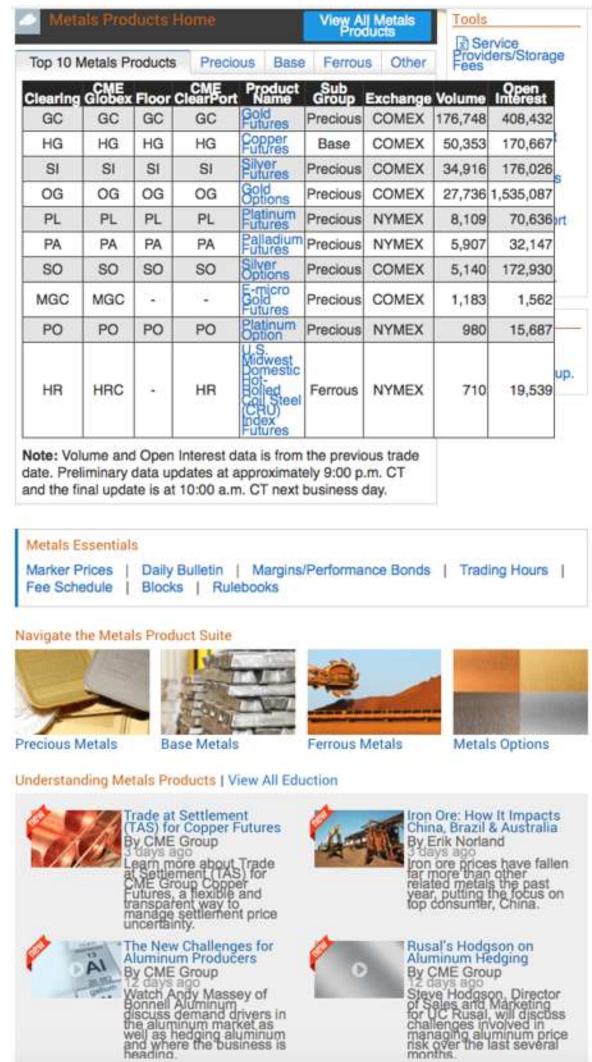
Natural Gas & Power — Natural Gas & Power Products
Coal — Coal Products
Options — Options Products



Metals Products Home | View All Metals Products

Tools
- Service Providers/Storage Fees

Top 10 Metals Products | Precious | Base | Ferrous | Other

Clearing	CME Globex	Floor	CME ClearPort	Product Name	Sub Group	Exchange	Volume	Open Interest
GC	GC	GC	GC	Gold Futures	Precious	COMEX	176,748	408,432
HG	HG	HG	HG	Copper Futures	Base	COMEX	50,353	170,667
SI	SI	SI	SI	Silver Futures	Precious	COMEX	34,916	176,026
OG	OG	OG	OG	Gold Options	Precious	COMEX	27,736	1,535,087
PL	PL	PL	PL	Platinum Futures	Precious	NYMEX	8,109	70,636
PA	PA	PA	PA	Palladium Futures	Precious	NYMEX	5,907	32,147
SO	SO	SO	SO	Silver Options	Precious	COMEX	5,140	172,930
MGC	MGC	-	-	E-micro Gold Futures	Precious	COMEX	1,183	1,562
PO	PO	PO	PO	Platinum Option	Precious	NYMEX	980	15,687
HR	HRC	-	HR	U.S. Midwest Domestic Hot-Rolled Coil Steel (CRU) Index Futures	Ferrous	NYMEX	710	19,539

Note: Volume and Open Interest data is from the previous trade date. Preliminary data updates at approximately 9:00 p.m. CT and the final update is at 10:00 a.m. CT next business day.

Metals Essentials

Marker Prices | Daily Bulletin | Margins/Performance Bonds | Trading Hours | Fee Schedule | Blocks | Rulebooks

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3 days ago
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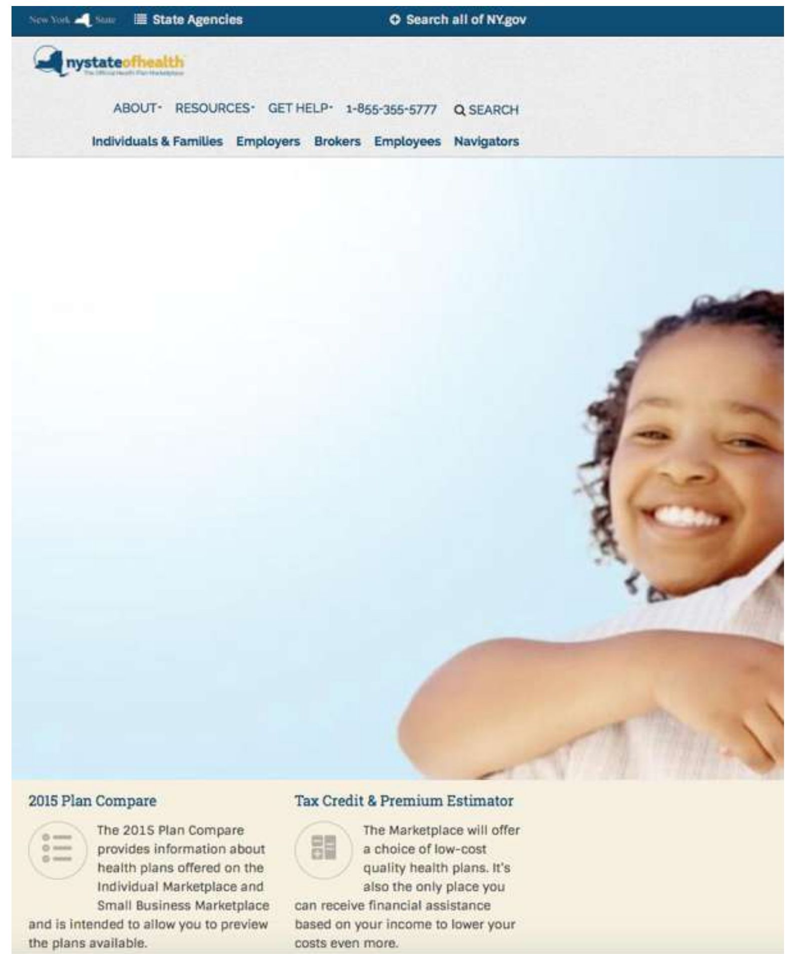
Steve Hodgson, Director of Sales and Marketing for UC Rusal, will discuss challenges involved in managing aluminum price risk over the last several months.

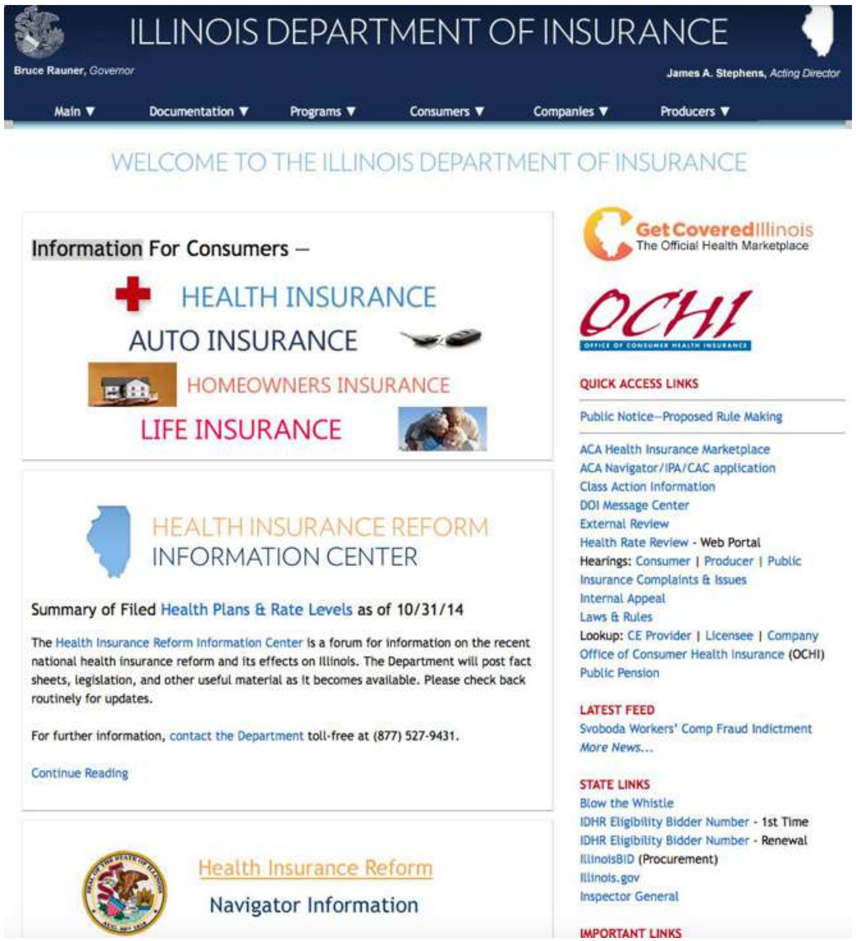
PART 6

Model for China's Health Care Exchanges

A leading working model for CIRC, China Economic Zone Development and the State Council's needs and goals is the New York Department of Financial Services, New York Insurance Department and New York Health Benefits Exchange.



CIRC should visit the Illinois Department of Insurance that is the other leading US insurance regulator. Illinois does not have a "ObamaCare" Health Insurance Exchange, like many US states because it has a Republican Governor.



In the US health care costs were 15% of GDP, currently are 18% and rising to 20% potentially. Rising costs threaten insurer solvency and health care insurance costs for consumers. The US Affordable Care Act relies upon three "Rs" of reinsurance, risk adjustment and the "risk corridor" feature, which needs to be adequately funded and is not in the US.

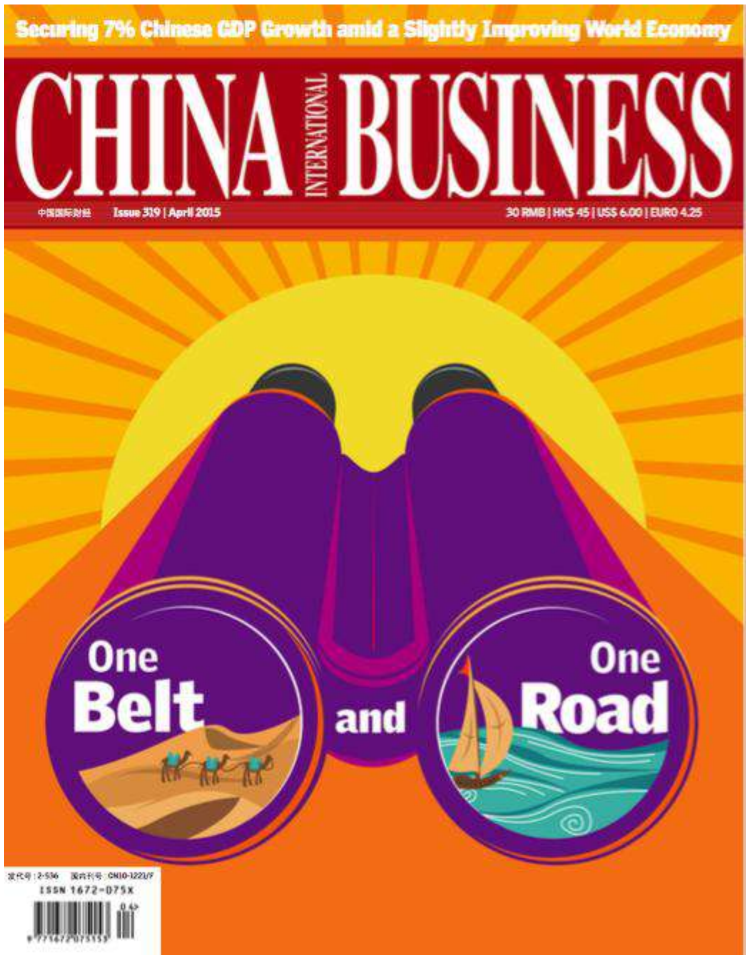
Underfunded Risk Corridors are causing uncertainty and potential volatility in Health Insurance market.

Part 7

Whyte Daimin Model for ASEAN RE

ASEAN and its member nations are in the early stage of trying to create an affordable and reliable catastrophe recovery financing method to protect economic growth. How can they achieve it?

The Whyte Daimin Model for ASEAN RE was introduced in *China International Business Magazine*, April 2015.



Whyte Daimin Model for ASEAN Catastrophe Recovery Financing

FINANCE REINSURANCE

Sidebar

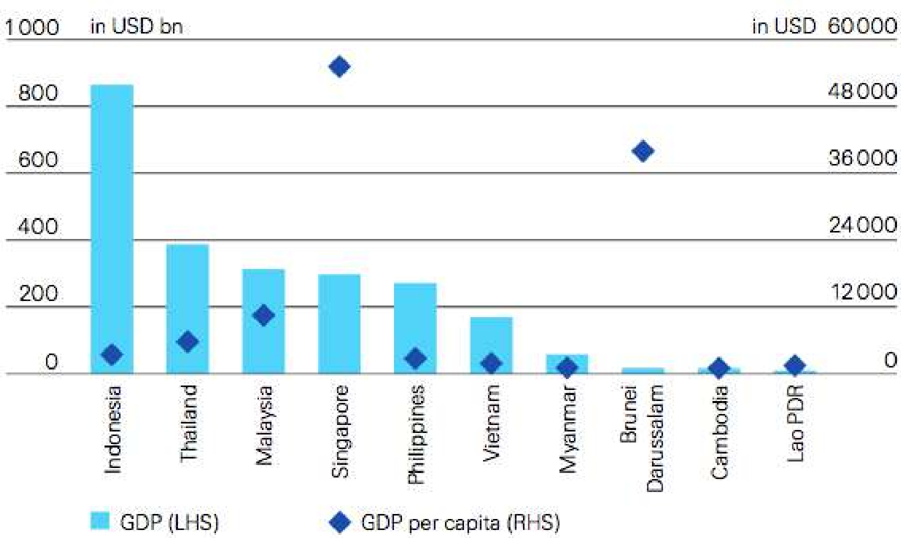
The Whyte Daimin Model for ASEAN RE, which can also be used for BRICS RE, was created to enable China to profitably develop its financial service industry domestically and internationally by providing:

1). Affordable and reliable catastrophe risk transfer and recovery financing to participating ASEAN governments to administer according to each ASEAN nations conditions and needs;

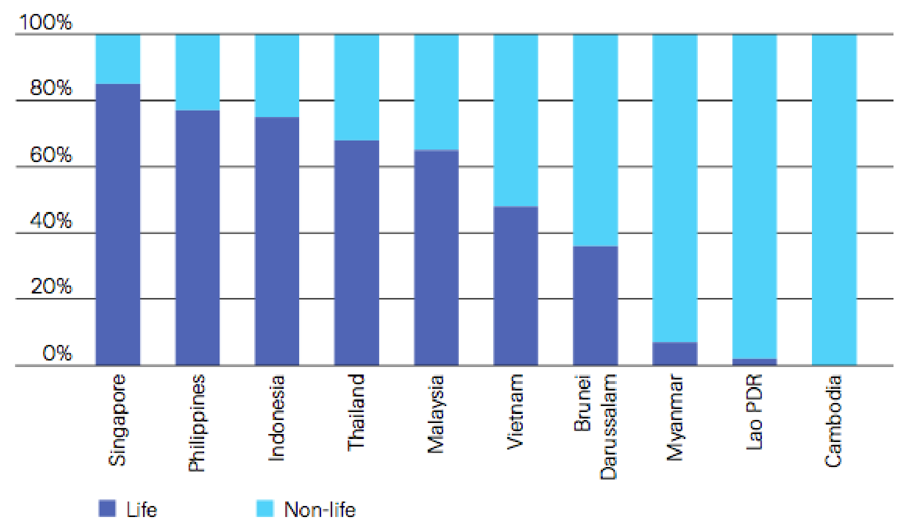
2). By “smoothing” participating ASEAN nation’s economic catastrophe losses to protect ASEAN nations’ economic growth and trade with China; and

3). To help promote harmonious outcomes for territorial, trade and economic issues.

These charts reveal 9 of the 10 ASEAN member nations have lower per capita incomes and accordingly low insurance penetration. Seeking to create insurance penetration for reinsurers to expand their profits will not provide adequate, affordable or reliable catastrophe risk transfer and recovery finance in nations without well developed insurance sectors.



Source: Oxford Economics, Swiss Re Economic Research & Consulting.



ASEAN's indigenous insurers' solvency will be safer and they will more profitable if they <u>do not write</u> catastrophe insurance if they lack adequate capital, claims handling, and properly priced premiums from businesses and consumers.

For ASEAN nations' indigenous insurers to steadily develop they need to use their limited capital to only cover life and non-life insurance policies that exclude catastrophe coverage. They should only provide insurance that they are able to accurately model and receive actuarially sound premiums for.

Each ASEAN nation will need to develop their own insurance companies and regulatory systems.

It will take ASEAN as an economic community a long time to try to integrate ten nations' insurance regulatory systems.

Thailand's reinsurance problems are a revealing case study.

Thailand's Deputy Prime Minister proposed the creation of a new reinsurer for the ASEAN region after the 2011 floods, (which we refer to as "ASEAN RE") because the three largest "global reinsurers" would either not deal with Thailand or demanded greatly increased premiums. Several major manufactures were forced to stop production during the floods and could leave Thailand. The government assured them it was implementing mitigation investments and recovery strategies.

In 2012 it established a National Catastrophe Fund with US$1.6 billion of government capital and guarantees. By 2013 the Fund had sold over a million catastrophe insurance policies covering flood, windstorm and earthquakes. Households, small and medium size businesses and industrial enterprises purchased 92%, 7% and 1% respectively of the policies. Standard premium rates were set from .5% to 1.25% of the amount insured and premiums totaling about US$ 60 million were paid to Thailand insurers.

The Fund that acts as the primary reinsurer providing proportional reinsurance coverage provides 58%, 16% and 26% coverage of the households, businesses and industrial enterprises risks. "Foreign reinsurers" covered losses in a layer from US$ 1 billion to US$ 16 billion. But other "global reinsurers" were reported to be "reluctant to back the Fund "unless the price is right."

These charts reveal the <u>slow and low percentage of 2011 flood loss claims payments to insureds</u> by insurers and reinsurers by May 2012 and overview the structure of the National Catastrophe Insurance Fund set up by Thailand's government in 2013.

Thailand Non-Life & Life – Industry Flood Loss (2011)

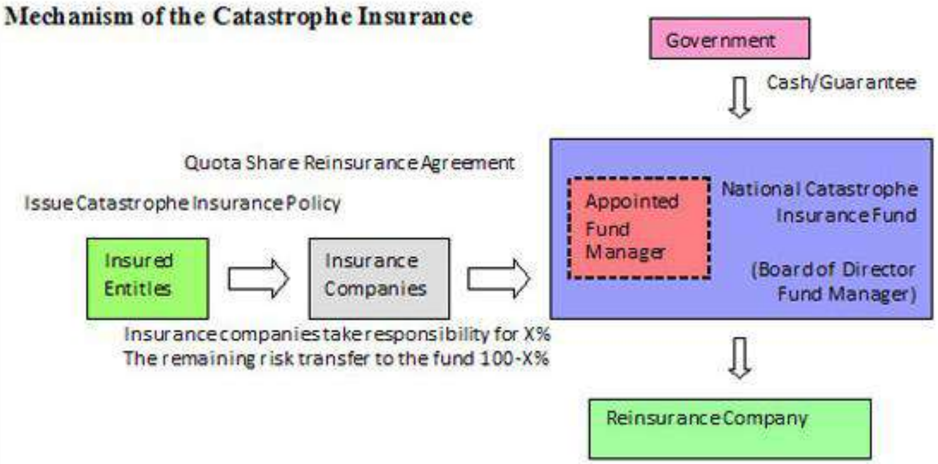
As of May 15, 2012.

(USD Millions)

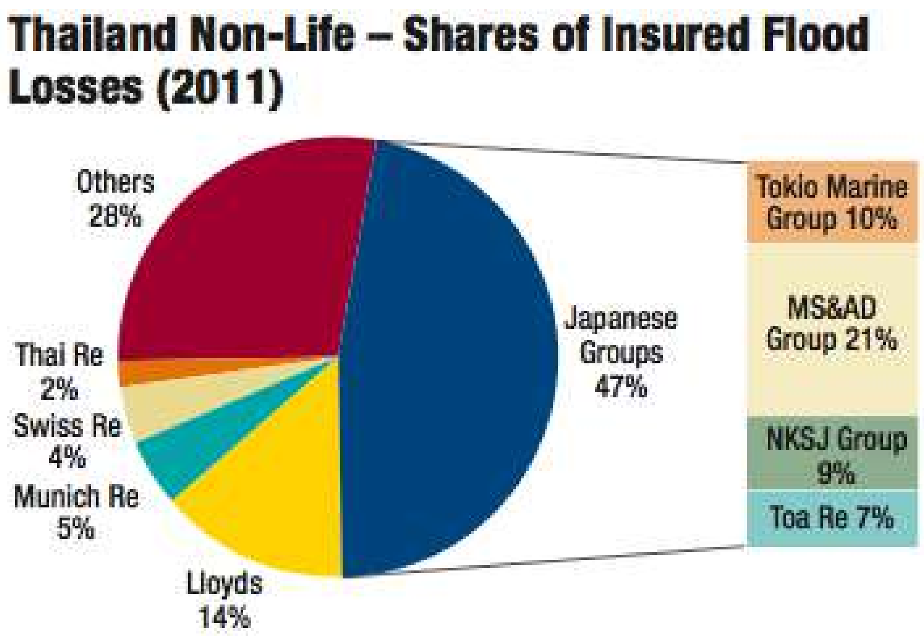
	Incurred losses				Paid vs Incurred loss	
	Claims		Incurred Loss			
	Number	%	Amount	%	Number of Claims	Claims Amount
Industrial All Risks	8,464	10%	USD 14,854	96%	30%	41%
Fire (Small/Medium Enterprises)	3,906	4%	433	3%	71%	30%
Fire (Personal)	36,067	41%	106	1%	90%	80%
Motor	39,797	45%	135	1%	95%	96%
Total Non-Life	**88,234**	**100%**	**USD 15,527**	**100%**		
Life	213	0%	1	0%	100%	100%
Total	**88,447**	**100%**	**USD 15,528**	**100%**		

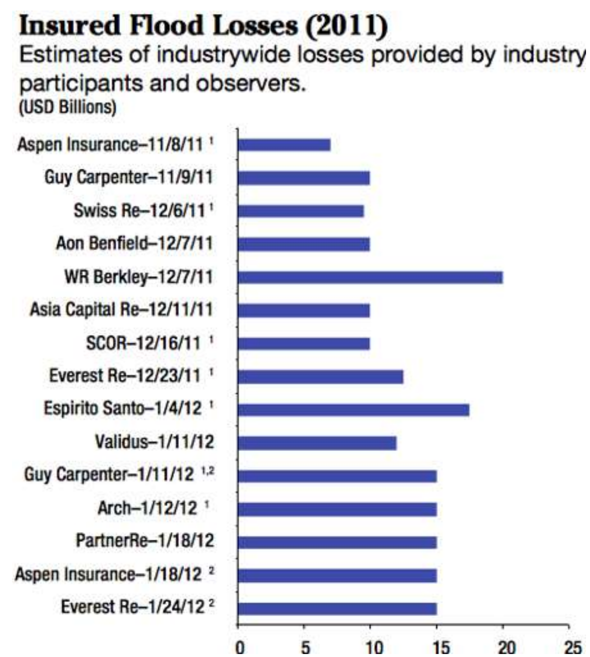
Source: Thailand Office of Insurance Commission

Mechanism of the Catastrophe Insurance



The World Bank's estimate of the 2011 Thailand flood economic losses was US$ 45.7 billion. According to A.M. Bests, the insured loss estimates made by 15 reinsurers ranged between US$ 8 billion to US$ 23 billion. These charts reveal the large number of insurers, reinsurers and retrocessionaires involved. Claim documents must come from often unsophisticated insureds in the midst of a catastrophe. Then claims need to be adjusted by insurers, reinsurers and retrocessionaires. Then claim payments flow from retrocessionaires to reinsurers to insurers to insureds, which urgently needed the payments to recover from the catastrophe. Even in the US's highly developed and regulated market, ten years after Hurricane Katrina only 45% of claims from insureds had been paid.





Thailand’s insurance regulator proposed that ASEAN form a new ASEAN pool reinsurer in 2013

COUNTRY PROFILE – THAILAND

Gearing up for ASEAN Economic Community

With the impact of the 2011 Thai floods still making waves, the Thai insurance industry is now gearing up for 2015 when ASEAN economies integrate under a common market. The regulator is leading the charge and insurers are working towards continuous sustainable growth.

Regulator leads the charge

The **Office of Insurance Commission (OIC)** had a busy past year looking both back and forward. Looking back, it had worked proactively with the industry in responding to the flood crisis and initiating measures to mitigate the impact of similar future disasters. Looking forward, it has been helping drive the industry to be fast on its feet as the ASEAN economic integration draws near. **Mr Pravej Ongartsittigul**, Secretary General of the OIC, urges Thai insurers to aggressively take on the regional opportunities coming their way.

By **Manuelita Contreras**

As the Thai insurance industry gears up for the economic integration of the ASEAN region in 2015, the OIC has been playing an active role of not only putting in place necessary regulations and infrastructure but incentives as well to better prepare insurers. It is also pushing the message that they should think beyond Thailand and embrace the opportunities the ASEAN Economic Community (AEC) will offer them.

"I echo the message for them to be more aggressive," said Mr Pravej Ongartsittigul, following Deputy Prime Minister and Finance Minister Kittiratt Na-Ranong's call to insurers at an industry gathering to be more aggressive and not be too defensive.

His office and the Thai General Insurance Association had agreed to set up a working team, to be comprised of members from both the public and private sectors, to work on boosting the capability of the Thai insurance industry. Specifically, it will look into revising the Non-life Insurance Act and developing distribution channels particularly for microinsurance, among other things.

"The objective was to stimulate the awareness of and active participation among insurers in the developments in the next 10 to 20 years, in light of the various economic indicators in the region," he said. "The mutual understanding of such will pave a path for an action plan in the industry."

He said the inclusion of microinsurance in the plan was aimed at increasing the insurance penetration rate, particularly among customer segments that need protection the most. "As the current cycle of economic growth in the ASEAN region continues, so does the increase in income of individuals. The insurance industry can serve and expand to a much wider base of consumers and contribute to the stability and well-being of the general public."

Cross-border partnerships encouraged

On the life side, the OIC is also encouraging insurers to proactively prepare for the expected changes in their business environment and associated opportunities and threats once the AEC comes into force.

He said that beyond the domestic market, the industry and his office are looking into the feasibility of providing assistance to the CLMV countries (Cambodia, Laos, Myanmar, Vietnam) in developing their insurance industries to better serve their markets. "We have similar cultures, and we hope to expand our similarities to include our economies in the years to come," he said.

The OIC has been seeing positive cross-border business developments with these countries in the form of exclusive partnerships, and is encouraging more of such activities.

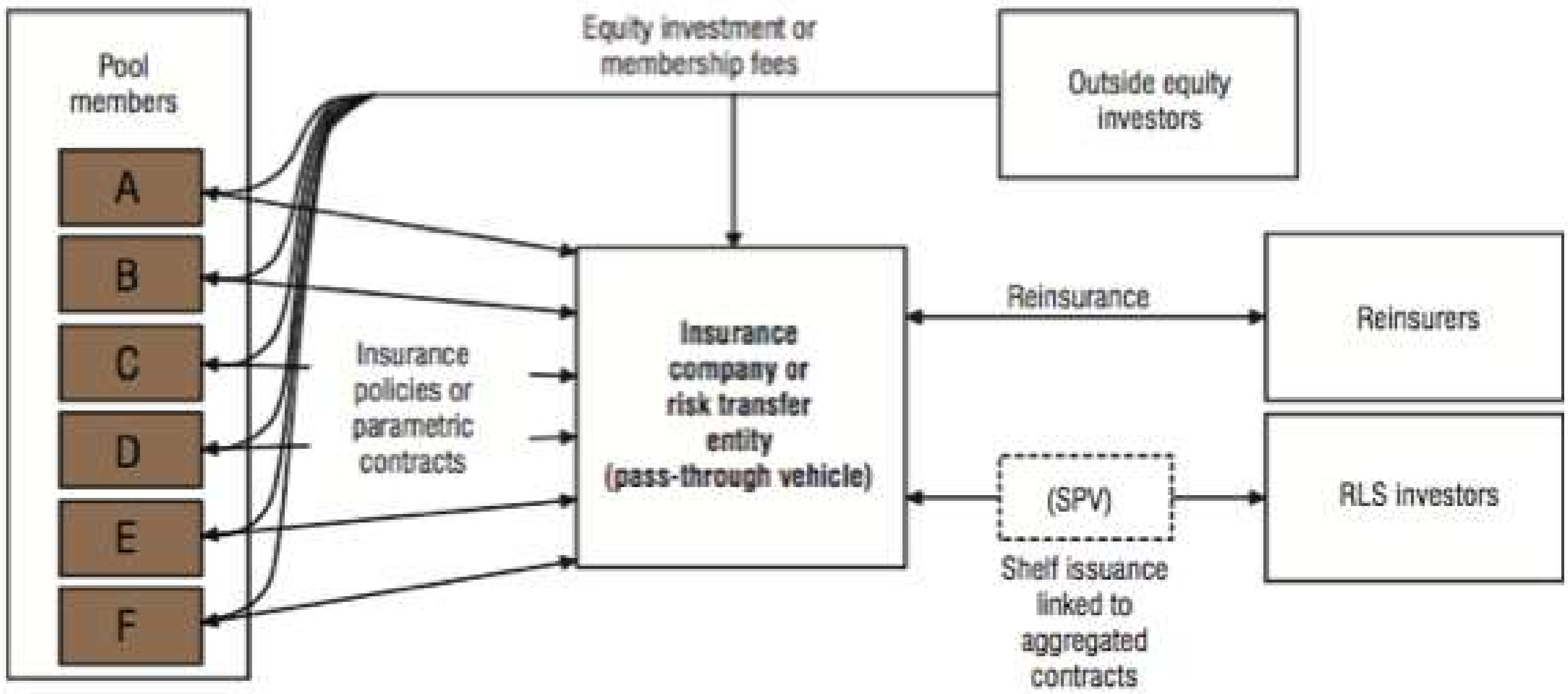
De-tariffing being looked into

One concern insurers have raised as they prepare for the AEC is the need for de-tariffing, as currently most classes of business are subject to tariffs. Although companies have pricing flexibility, they still need to get regulatory approval.

"The market is operating to an extent that is fair, efficient, and transparent. Liberalisation in terms of licensing is not on the agenda at the moment."

– Mr Pravej Ongartsittigul

Thailand Regulator proposed below "Basic Model" for ASEAN RE



The Basic Model's structure is good. But Thailand's regulator's proposal <u>does not have an adequate business model.</u>

He proposed it is to be funded by equity investment and membership fees and outside equity investors. An insurance company or risk transfer entity that is a "pass-through vehicle would pool ASEAN members risks, which would be covered by insurance policies or non-insurance based parametric contracts. The insurance company or risk transfer entity would negotiate costs and terms of coverage for the risks with reinsurers and catastrophe bond investors.

In theory, the Basic Model would establish a large pool of business and resulting competition between reinsurers and catastrophe bond investors that want to obtain ASEAN's pooled business.

Reasons the "Basic Model" will not work

It should not:

1) use insurance policies with the resulting slow catastrophe claim payments to millions of policyholders in countries that lack adequate insurance companies and regulations.

2) rely only on the availability and affordability of on-going reinsurance and catastrophe bond coverage.

3) be dependent financially on prompt, undisputed catastrophe recovery payments from them.

It needs to:

1) have its own massive loss funding ability to make catastrophe recovery payments immediately.

2) raise an impressive, extremely large amount of start-up capital.

3) be sure it has access to further rounds of massive capital, even without reinsurance and catastrophe bond coverage in place, if there is a series of major catastrophe loss years.

It is essential to its ability to attract capital from capital market investors and its solvency and ability to provide coverage after large loss years

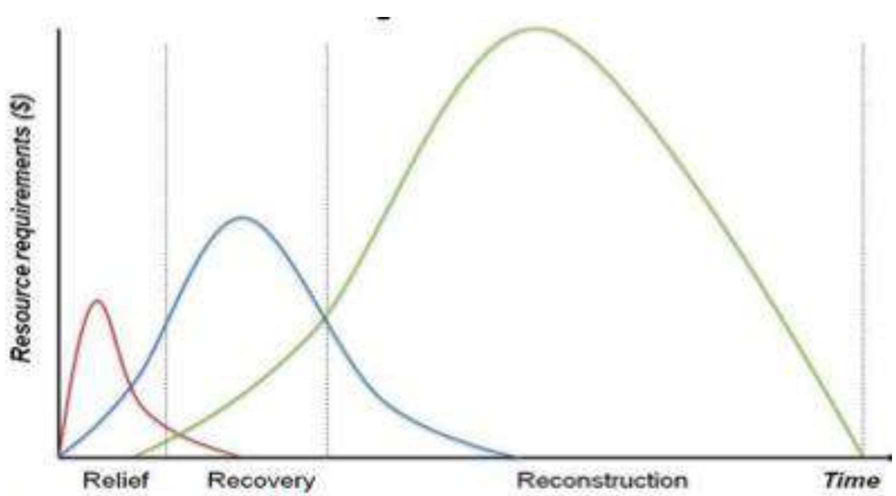
The Whyte Daimin Model for ASEAN RE includes the following business features:

1. It will provide parametrically triggered catastrophe recovery funding paid only directly to participating ASEAN RE member nation's governments.
2. There is no loss sharing among ASEAN RE pool member nations. Instead the protection provided is known as "loss smoothing" for each individual ASEAN countries governments.
3. Each participating ASEAN nation's government immediately pays ASEAN RE for the loss payments it receives from ASEAN RE with a bond issue when a parametrically defined covered catastrophe occurs.
4. ASEAN Re can hold or sell the bonds in the international capital markets.
5. ASEAN RE can also raise capital in the capital markets by itself issuing bonds.
6. ASEAN RE's credit worthiness and credit rating provided by its own huge capital, is also further enhanced by the credit rating of its long term committed outside major strategic equity investors.

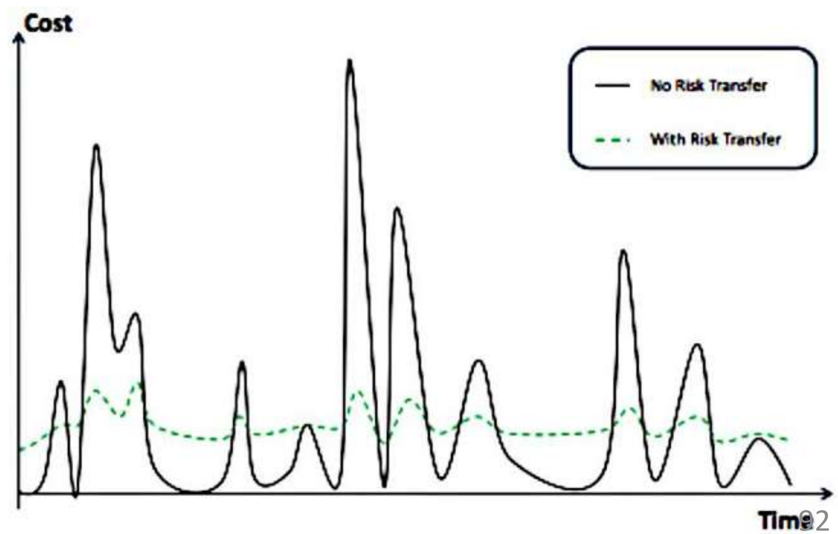
1). ASEAN RE will "<u>smooth</u>" the impact of catastrophe caused economic losses and provide the pre-catastrophe mitigation investment and post-catastrophe recovery finance necessary to protect ASEAN nations' economic growth.

2). ASEAN RE will use its own high capitalization to do so as well as using reinsurance risk transfer and catastrophe recovery financing and catastrophe bond investors <u>when they are fully collateralized and attractively priced</u>.

3). These charts show the <u>three stages</u> of catastrophe recovery finance needed and the "smoothing" effect provided by ASEAN RE's coverage.



Ghesquiere and Mahul (2010)



ASEAN RE will provide parametrically triggered catastrophe recovery finance for all peril catastrophe risk exposures

1). ASEAN RE's member nations governments will pay only relatively low annual membership fees to pay for ASEAN RE's operating expenses and no more unless they receive catastrophe recovery finance payments. If they do, they in return will simutantiously pay ASEAN RE back in sovereign bonds equal to the loss payments plus a 10% guaranteed profit for ASEAN RE. This will attract major sovereign and capital market investors' support for ASEAN RE's massive capitalization, which must dwarf existing reinsurers' assets.

2). Unlike reinsurers, ASEAN RE's profitability will not be negatively affected by high loss years.

3). Asia typically has about 50% of the world's catastrophe losses annually. However this chart suggest some non-correlation from typhoon damage geographically.

	that also affect							
1-in-20 year events	Japan	Korea	China	Hong Kong	Taiwan	Philippines	Thailand	Malaysia
Japan	1.00	L	L		L	L		
Korea	H	1.00	L		L	L		
China	M	L	1.00	M	M	M		
Hong Kong	L		1.00	1.00	L	H		
Taiwan	M	L	H		1.00	M		
Philippines			M	L	L	1.00	L	L
Thailand			L			M	1.00	L
Malaysia	L				L	M	L	1.00

Low
Medium
High

China can be the "first mover" , a committed, long term, strategic investor, crucial to funding and creating ASEAN RE

1). Trade and investments in ASEAN nations already creates 10% of China's annual GDP. China has the long-term commitment to ASEAN's economic stability and growth. China is contributing major funding to the One Belt, One Road initiative, which it is supporting with a new US$ 40 billion Silk Road Fund and half of the initial US$ 100 billion for the Asian Infrastructure Investment Bank.

2). Protecting those loans and ASEAN's economic growth will increase the requirements for the amount of catastrophe risk transfer and recovery financing.

3). China is able to provide the massive capital backing that ASEAN RE needs.

4). Unlike the 10% to 20% profit reinsurers need, China is a strategic investor. It has multifaceted, on going trade relationships with ASEAN nations.

5). Unlike the reinsurers and catastrophe bond investors, China can profitably make a long-term commitment to financially support ASEAN RE in both high and low loss years.

China's support can ameliorate the deficiencies in the Basic Model

1. China's initial investment and long term financial backing ASEAN RE will act as an enterprise risk management strategy that <u>protects the solvency</u> of ASEAN RE from relying solely on whether reinsurance and catastrophe bond coverage is available and priced at affordable costs.

2. China's support enables ASEAN RE to <u>take advantage of the fully collateralized protection</u> offered by catastrophe bond investors and achieve competitive pricing and terms for reinsurance coverage, <u>when it is fully collateralized and has attractive broad coverage terms and pricing.</u>

3. Unlike the post-catastrophe loans provided by international development banks and relief organizations, this ASEAN RE business model <u>does not interfere</u> with the sovereignty of ASEAN governments in managing their own economies and insurance industry development.

PART 8

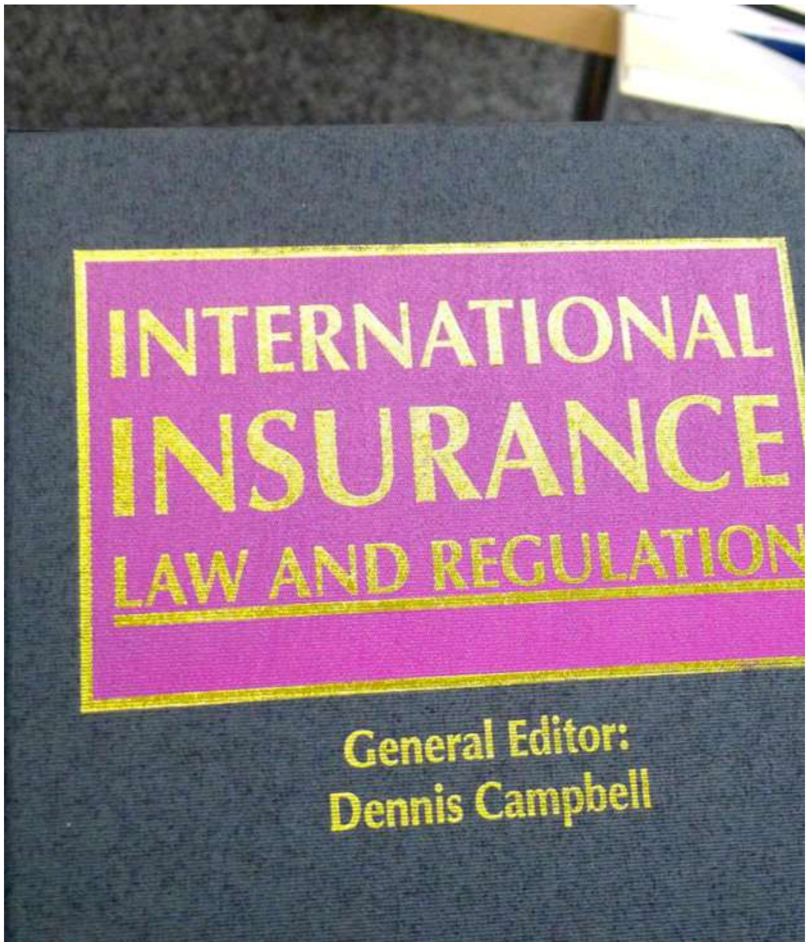
The Whyte Daimin Models for
China’s Insurance Pilot Projects.

ASEAN RE and BRICS RE can be an effective catalyst for the development of China’s financial services industry and international economic activities, which can surpass Bermuda’s successful economic development model

Whyte Daimin Model for China's Free Trade Zones success

Bermuda, which has a population of 70,000, made itself into the center for innovative companies providing <u>50% of the US$ 3.5 Trillion in catastrophe recovery finance</u> and 50% of the world's catastrophe bonds.

<u>No such jurisdiction exists in Asia and the developing world.</u>

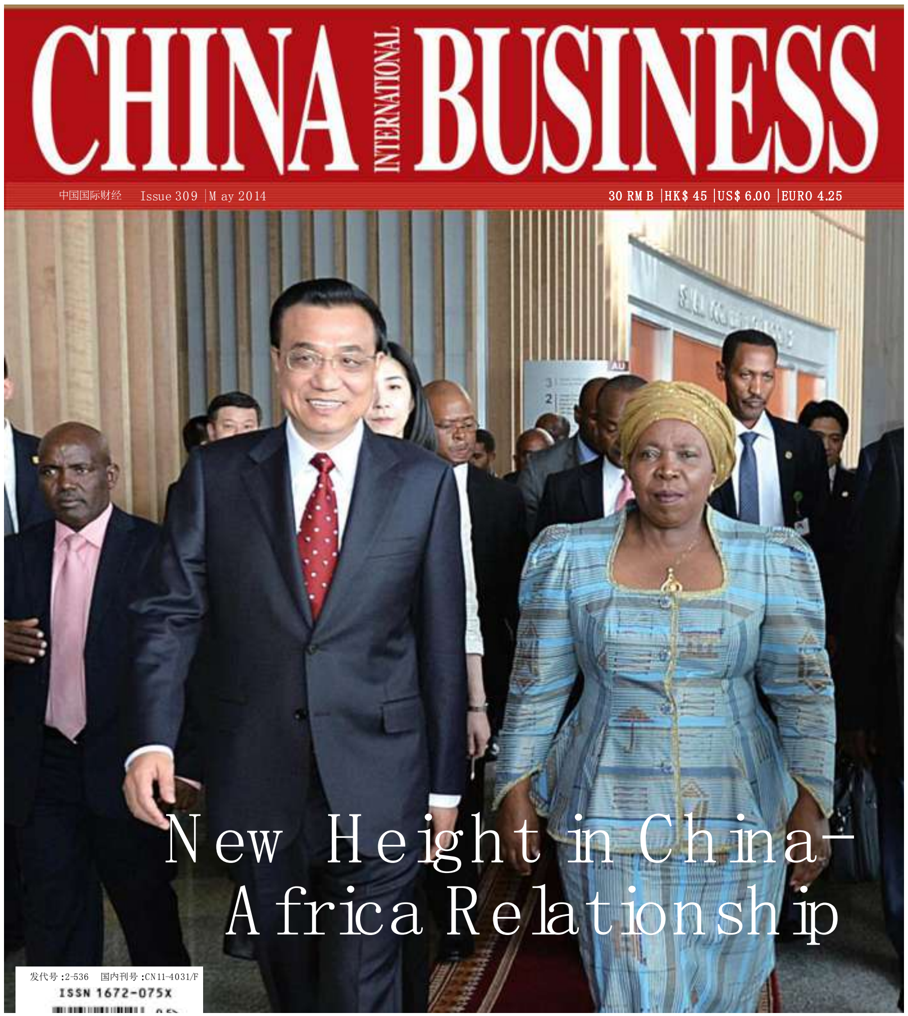


Bermuda

John Milligan-Whyte
Milligan-Whyte & Smith
Hamilton, Bermuda

's Insurance and Reinsurance

Implementing the Whyte Daimin Models in the Insurance Pilot Projects, ASEAN RE and BRIC RE can make a Chinese city or cities the leading global centers for catastrophe and agriculture loss recovery finance



Catastrophe & Agriculture Reinsurance Finance in Shanghai's Free Trade Zone

by **JOHN AND DAI MIN MILLIGAN-WHYTE**

China Insurance Regulatory Commission and China and Bermuda's Ministries of Finance working together with Chinese and Bermuda companies in the Shanghai Free Trade Zone (SFTZ) can enable Chinese government entities to commercially transfer, finance and hedge catastrophe and agricultural losses in the reinsurance, capital and commodities markets. This is the second in a series of monthly articles on why and how this can be achieved.

Bermuda's Ministry of Finance began creating the world's leading "special economic zone" for insurance and reinsurance in the 1980s. By 2005 Bermuda was the world's second largest reinsurance market receiving 11% of the world's reinsurance premiums. With the rapidly increasing frequency and severity of economic losses caused by natural catastrophes since 1992, Bermuda reinsurance companies now provide US$2 trillion of the US$3.5 trillion catastrophe reinsurance coverage available globally.

Bermuda made itself into the world's most attractive jurisdiction for the companies providing reinsurance and insurance linked securities finance (known as "ILS") by developing the world's most effective insurance and reinsurance regulatory system. Bermuda became the best-regulated jurisdiction for Wall Street and sophisticated investors to set up highly capitalized and rated new reinsurers quickly.

China and Bermuda's Strategic Partnership in Shanghai's New Free Trade Zone

China's insurers and reinsurers business can profitably develop with Bermuda reinsurers as their strategic partners in providing China's catastrophe and agriculture insurance and reinsurance products and coverage. Providing the coverage China urgently needs to protect its economy also requires far more reliable and highly capitalized reinsurance capacity than currently exists in the international insurance, reinsurance and ILS markets.

China Investment Corporation's assets of US$585 billion and the State Council's estimate that China's insurance and reinsurance premium payments in 2015 will reach US$484 billion annually are already larger than the total assets of US$480 billion of the world's 200 reinsurance companies and US$48 billion capacity in the ILS markets.

China can Protect Itself by Becoming the Largest Consumer, Provider and Investor in Agriculture and Catastrophe Reinsurance and ILS finance

China's agriculture and catastrophe risk exposures and peak losses are far too large to be reliably provided by the capital in the international reinsurance market. Such massive and volatile loss exposures need to be financed and hedged in the global capital and commodities markets using the new asset class of insurance linked securities, which are already providing 20% and may grow to provide 50% or more of the capital providing catastrophe recovery costs protection.

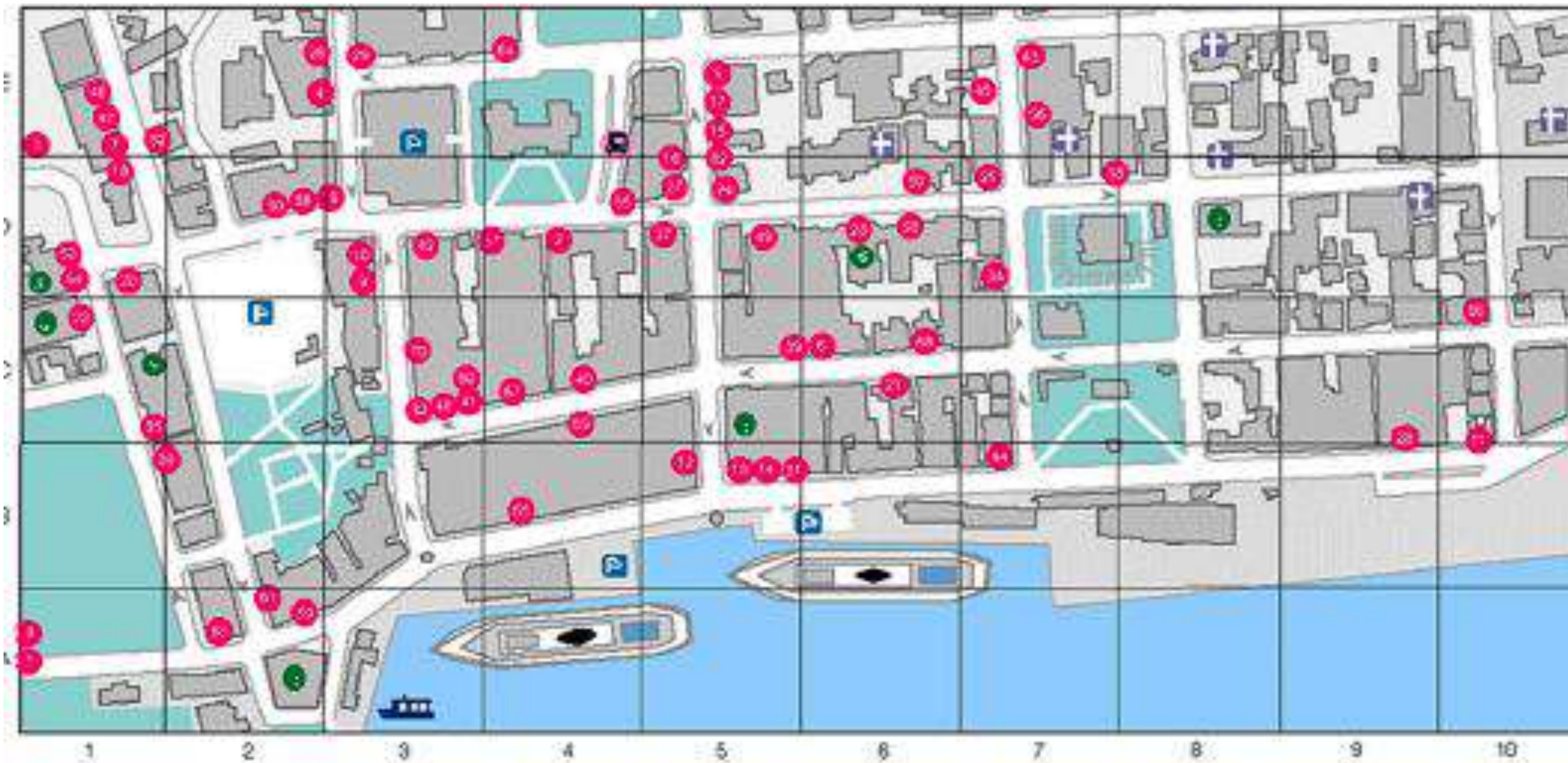
China has the world's highest exposure to earthquake risk and huge urban concentrations of people and industry. In 2006 the State Council's "Opinions on the Reform and Development of the Insurance Industry" made it clear that China should establish a national financial support system for catastrophe insurance. But, eight years later, Yunnan, Shenzhen and Ningbo are the only three sites that have been approved as catastrophe insurance pilot areas. Shanghai, Beijing and Guangzhou produce 60% of China's GDP and 90% of its exports.

Less than 1% of China's earthquake recovery costs are covered by insurance, which hinders and delays reconstruction. Combining China's capital and urgent need for protection with Bermuda's successful regulatory experience is required to safely design and scientifically manage the massive catastrophe and agriculture insurance and reinsurance coverage China needs. The long-term reconstruction costs of a peak loss or losses, if uninsured, can trigger fiscal and economic crises beyond the management abilities of local, provincial and national government bodies already overwhelmed by a catastrophe's immediate relief and recovery costs.

Huge earthquakes of 8.6 and over on the Richter scale come in 15 year cycles. We are in an 8.5 cycle and as a result of the 2011 Japanese earthquake there is an 81% to 93% probability of a major earthquake hitting Tokyo. Japan's Cabinet Office estimates that would cause US$1 trillion in insured losses, which is more than all the assets of the global reinsurance market. It will also trigger further uninsured losses of US$1.7 trillion. Earthquakes occur in interrelated regional clusters. Such a peak loss or a series of major losses will bankrupt many of the world's insurance and reinsurance companies and trigger capital and credit market crises and collapse of international trade supporting China's economy.

Trillions of dollars of additional liquid capital reserves are needed to

Bermuda’s economic development strategy and resulting regulation and expertise developed over the past 30 years and attracted sophisticated, innovative and highly capitalized companies as a result of traditional reinsurers lack of innovation.



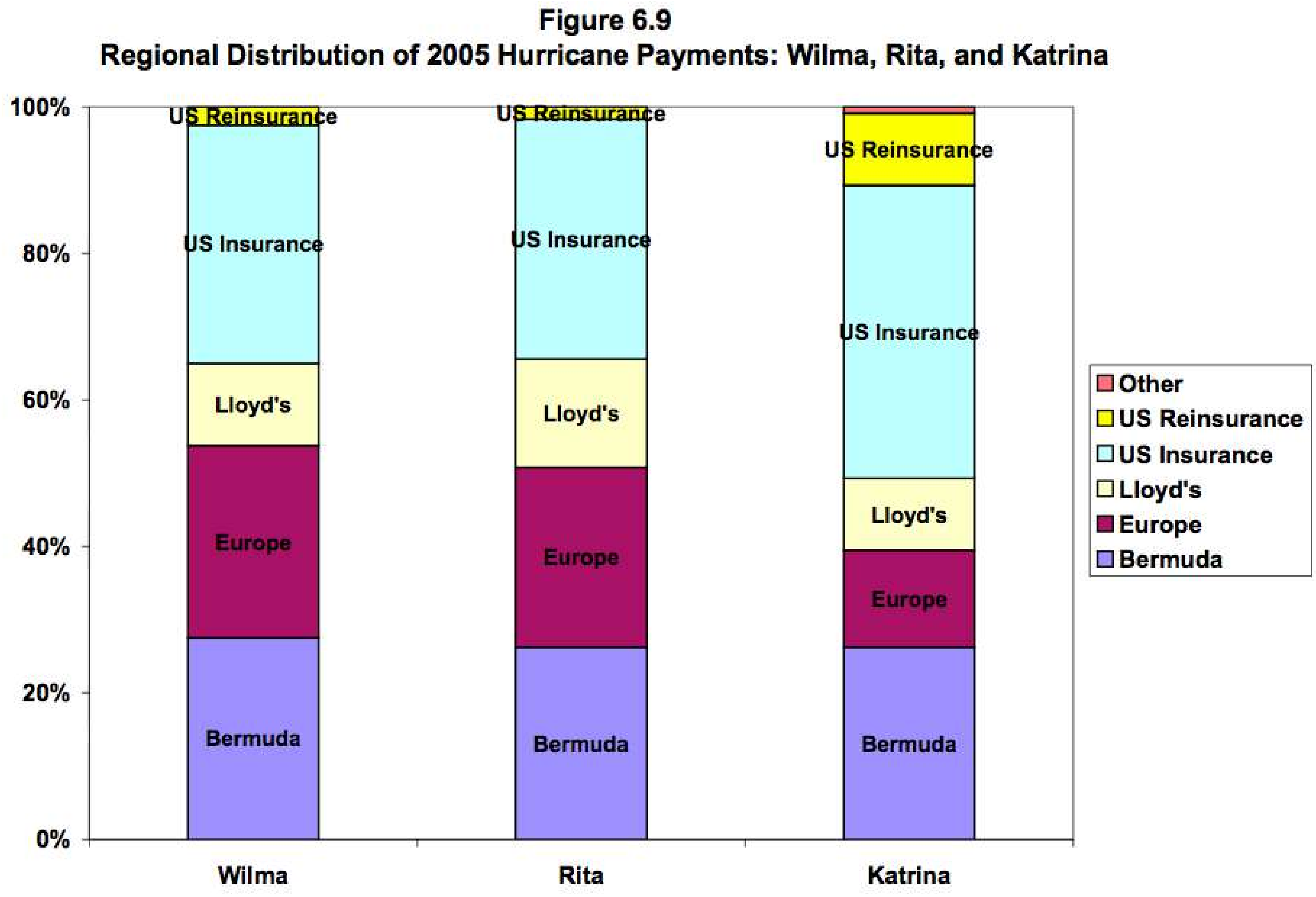
Bermuda developed specialized insurance and reinsurance legislation that made it a "special economic zone" for the US, EU and other nations. This chart shows the different types and levels of regulation in Bermuda for different classes of smaller and huge insurers and reinsurers.

Table 3.1

Summary of Bermuda Insurance Regulatory Rules

License category	Class 1	Class 2	Class 3	Class 4	Long-Term
Type of Firm	Single parent captives insuring risks of parent and affiliates only	Multi-owner captives and single parent captives writing up to 20% unrelated business	Insurers and reinsurers not included in classes 1, 2, or 4. E.g., captives where more than 20% of net premiums is unrelated business	Open market insurers and reinsurers underwriting for example direct excess liability insurance and property catastrophe reinsurance	Life insurers and long term accident and health
Minimum solvency margin Statutory capital and surplus must exceed greater of: (a) Minimum capital and surplus	$120,000	$250,000	$1,000,000	$100,000,000	$250,000
(b) Premium test First $6 million NPW plus	20 percent	20 percent	20 percent	50 percent[1]	
Excess of $6 million NPW	10 percent	10 percent	15 percent	50 percent[1]	
(c) (Net) loss reserve test	10 percent	10 percent	15 percent	15 percent	
Liquidity ratio	Relevant assets[1] must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	Relevant assets must exceed 75% of defined liabilities	No requirement
Information filed in annual return	Cover sheet Solvency certificate Declaration of ratios Auditor's report	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Auditor's report Loss reserve specialist opinion (triennial)	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Auditor's report Loss reserve specialist opinion (annual)	Cover sheet Solvency certificate Declaration of ratios Statutory financial statements Schedule of ceded reinsurance Auditor's report Loss reserve specialist opinion (annual)	Cover sheet Solvency certificate Actuarial opinion Statutory financial statements Auditor's report
Failure to meet solvency margin	Principal representative report to BMA with 30 days	Principal representative report to BMA with 30 days	Cease paying dividends. Report within 30 days on how company intends to comply with solvency margin.	Cease paying dividends. Report within 30 days on how company intends to comply with solvency margin. If capital and surplus falls below $750,000, additional reporting rules.	Principal representative report to BMA with 30 days

Bermuda companies paid 25% of 2005 Wilma, Rita and Katrina losses in the worst catastrophe annual losses year to date.



Whyte Daimin Investments Limited and Whyte Daimin Center's catastrophe recovery finance expertise harmonizes the fulfillment of China's needs and potential to provide better solutions for China's trading partners.

John Milligan-Whyte designed the model for ASEAN RE. He is chairman of Whyte Daimin Investments Limited and its two think tanks. He was Chairman of the Committee Advising Bermuda's Minister of Finance on Reinsurance and Insolvency, a member of the Bermuda Law Reform Commission and United States National Association of Insurance Commissioners' Advisory Committee, that drafted the US Model Insurance Act and Vice Chairman of the Insurance Section of the American Bar Association. From 1984 to 2008 he was an advisor and director of insurance, reinsurance and hedge fund companies in Bermuda. He was co-recipient of the Financial Law Review's Asian M&A Deal of the Year Award in 2002 and the first non-Chinese recipient of the China Business Leaders Summit's Outstanding Business Leader's Social Responsibility Award.

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