Whyte DaiMin Model for ASEAN RE

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This article explains why existing government-private sector partnership models that rely only on insurance, reinsurance and catastrophe bond markets cannot reliably protect lower per capita nations' economies and pioneers Whyte Daimin Model for providing ASEAN governments with reliable catastrophe recovery financing.

Market forces beyond reinsurers control and annual pressures for profits to satisfy shareholders and to attract catastrophe bond investors will undermine reinsurers' ability to reliably finance catastrophe recovery risk and losses for lower income countries. The charts reveal the "new normal" of increasing catastrophe events worldwide and resulting use of reinsurance and catastrophe bonds to finance catastrophe recovery primarily in higher income countries. That has increased from US$ 3.5 billion in 1992 to US$ 3.5 trillion in 2011.

The United Nations warned in 2013 that catastrophe losses so far in this century are in the range of US$ 2.5 trillion and "are spiraling out of control." In higher income countries 40% of catastrophe losses are financed by insurance premiums. The chart shows the premiums per capita for life and non-life insurance in high and lower income regions.

Reinsurers hope to increase their profits from lower income countries.

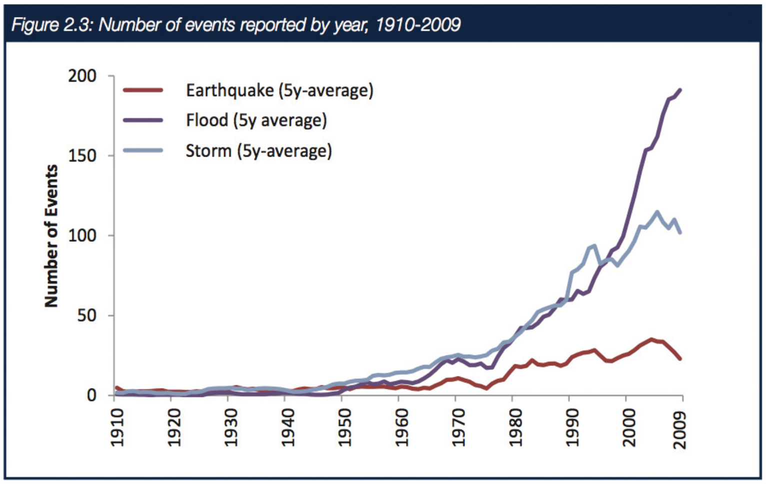
However, reinsurers are already providing more coverage than they can reliably model and perhaps pay losses on. Before 1992 huge reinsured catastrophe losses had been assumed in actuarial models to occur at predictable intervals, such as "only once in a hundred years." In the "new normal," a single "mega loss" or series of major reinsured losses of hundreds of billions dollars can simultaneously bankrupt many reinsurers. Reinsurers are also dangerously concentrating rather than distributing risk. In 2011 the four largest reinsurers, Munich Re, Swiss Re, Hannover Re and AIG, had 48.8 % of the global reinsurance market. In 2008 the world's then largest insurance and reinsurance group with over US$ 1 trillion in assets, discovered it was insolvent because it had incompetently managed securitized risk it had assumed. AIG needed a US$ 180 billion bailout with taxpayer funds from the US government to prevent its bankruptcy and a resulting global financial system collapse.

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

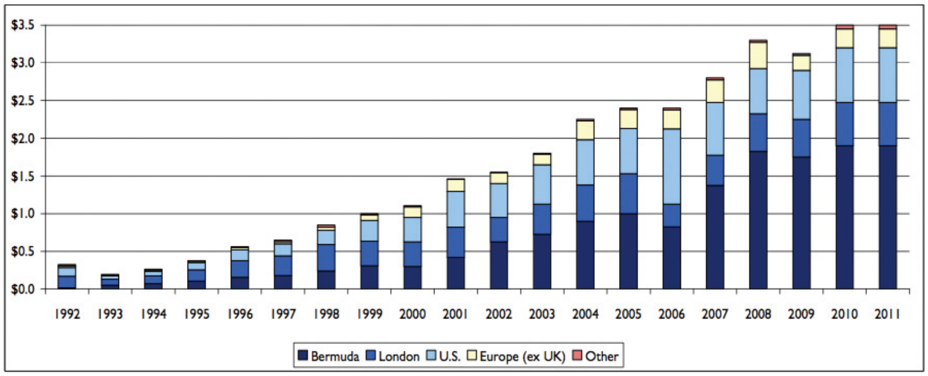
Investors assume incorrectly that major catastrophe losses will be uncorrelated with their investments in other asset classes. Catastrophe bonds are rapidly taking market share away from traditional reinsurance coverage. Reinsurers seeking profits of 10% to 20% from providing uncollateralized reinsurance 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. In 2014 US$ 68 billion was invested in catastrophe bonds and insurance linked securities, which provided 20% of global catastrophe coverage and may increase to 40% to 50%.

The four major rating agencies have issued "negative outlook" warnings on the global reinsurance sector.

"The sun may have set on traditional reinsurers' business model," according to Goldman Sachs, "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, in our view. 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." Reinsurers are also suffering from low bond investment returns since 2008. As a result the top 40 reinsurers reportedly increased their stock



Source: The OFDA/CRED International Disasters Database (EM-DAT)



market investments from 4% to 34% of their capital. This is very dangerous. Capital is safer in bonds. Stock market investments are not liquid to pay huge sudden catastrophe losses. The value of assets in stock markets plunge during "corrections," such as one that is inevitably coming. In is also not widely appreciated yet that there are high correlations between major catastrophes and losses in urbanized centers and resulting stock market and financial crises.

Catastrophe bond investors are also not reliable sources of capital to finance catastrophe recovery.

Interest payments to them cease and they lose all or part of the capital they invest if a covered catastrophe occurs. In catastrophe bond issues, modeling agencies and rating agencies issue opinions typically indicating that there is no more than a low likelihood of investors losing their capital and interest. In only about 2% of the over 300-catastrophe bond deals so far did covered catastrophe losses actually occur. But, a leading catastrophe modeling agency has warned in 2013 that one category 5 hurricane making landfalls on the U.S. coastline, impacting Miami and New York, could wipe out as much as 60% of the tranches of coverage in all catastrophe bonds issued. 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 when other asset classes become more attractive to investors, or there is another financial crisis in the capital markets.

The key problem is that reinsurers provide the only models currently available.

Reinsurers are promoting "government-private sector partnerships" in which governments teach or require consumers to buy insurance through funding education programs, making insurance coverage mandatory, or building insurance premiums into bank loan provisions etc. Since the premiums in lower income countries are low, their governments would subsidize premiums and thus reinsurers' profits on the lower layers of catastrophe coverage reinsurers provide through uncollateralized reinsurance treaties. That exposes insurers to the credit risk of reinsurers' default or insolvency. Reinsurers distribute risks they assume in the reinsurance markets or to catastrophe bond investors that are typically fully collateralized. However, governments and the public continue to suffer the massive economic losses from peak layers of catastrophe risks. Reinsurers will not cover and cannot transfer peak losses to catastrophe bond investors. The coverage reinsurers' offer in "government-private sector partnerships" they promote do not provide reliable catastrophe insurance and recovery financing for lower income countries.

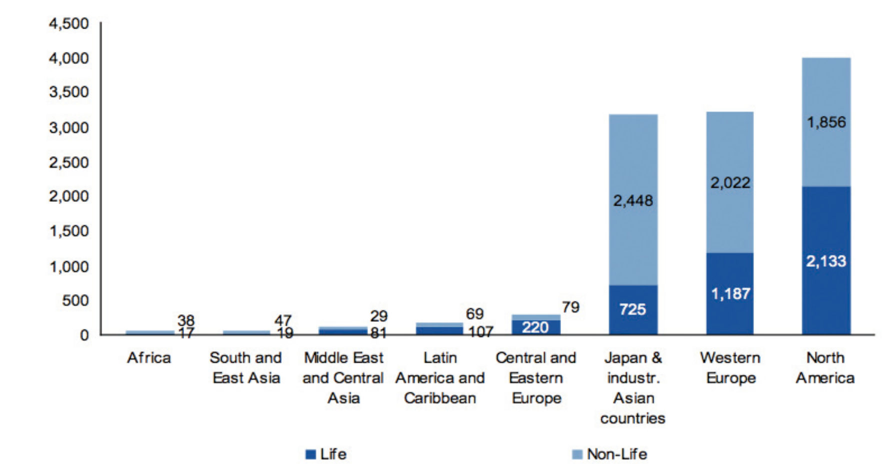
ASEAN is now trying to develop ways to reliably transfer and finance catastrophe losses.

Its ten member governments need to find sustainable ways to protect their 625 million people and interdependent manufacturing and trade economies. ASEAN is the world's fourth largest trading group with combined imports of US$ 1.2 trillion and US$ 1.3 trillion in exports. ASEAN's combined GDP growth rate is higher than other emerging countries and developed economies. The average annual rate of economic growth across the ASEAN countries since 1990 was 8.8% and GDP per capita increased from US$ 800 to nearly US$ 4000 in 2013. How can this growth be protected?

In ASEAN only Singapore has a high per capita income and a well-developed and regulated insurance market.

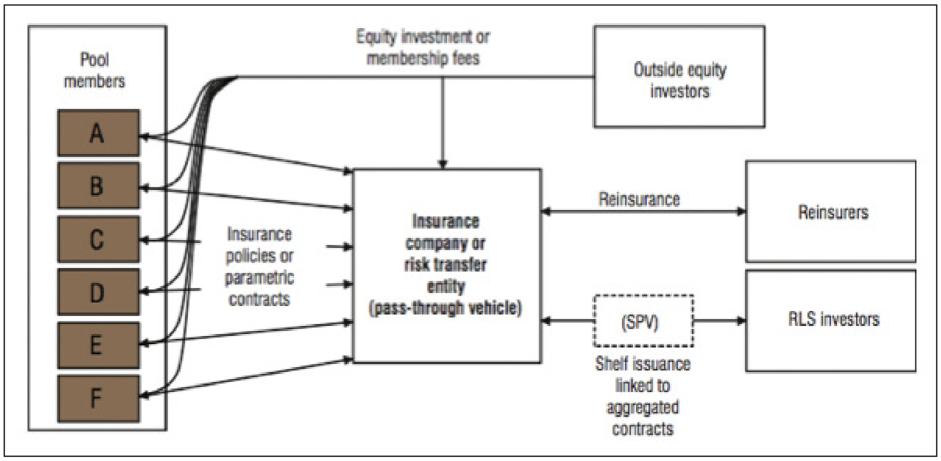
For nine of the ASEAN nations, it may be faster to implement, easier to administer and more cost effective and sustainable to develop a catastrophe recovery financing system that does not rely only on insurance and therefore only on reinsurers and catastrophe bond investors. Catastrophe insurance may

Exhibit 2: Premiums per capita in life and non-life insurance (in USD, 2008)



Source: Swiss Re Facts and Figures 2008

be too complex for many consumers to afford and understand, too unprofitable for indigenous insurers and international reinsurers to provide. It could be too expensive for many ASEAN nations' governments to sustainably subsidize premiums after one or a series of major catastrophes. Even in countries with highly developed insurance industries and regulatory systems where up to 40% of catastrophe losses are paid for by premiums from consumers and businesses, insurers and reinsurers pay catastrophe loss claims slowly. For example, in the U.S. ten years after Hurricane Katrina, insurers and reinsurers have paid only 45% of insured claims.



ASEAN's indigenous insurers will be safer and more profitable if they do not write catastrophe insurance.

For them to steadily develop they need to use there 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 charge 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 insurance regulatory systems.

Thailand is an instructive case study.

After its 2011 flood losses, Thailand's Deputy Prime Minister revealed that the three largest global reinsurers would either not deal with Thailand or demanded greatly increased premiums. He proposed the creation of a new major reinsurer for the ASEAN region, which we will refer to as "ASEAN RE." Thailand established a National Catastrophe Fund in 2012 with US$1.6 billion of government capital and guarantees. Several major manufactures forced to stop production during the floods remained in Thailand because the government assured them it was implementing mitigation investments and recovery strategies. By 2013 the Fund had sold over a million catastrophe insurance policies covering flood, windstorm and earthquakes with US$ 1.7 billion in proportional reinsurance coverage. Households purchased 92%, small and medium size businesses purchased 7% and industrial enterprises purchased 1% of the policies. Standard premium rates were set from .5% to 1.25% of the amount insured. Premiums totaling about US$ 60 million were paid to Thailand insurers. Households accounted for 58%, industrial enterprises for 26% and businesses for 16% of the proportional reinsurance coverage provided by the Fund that acts as the primary reinsurer. "Foreign reinsurers" covered losses in a layer from US$ 1 billion to US$ 16 billion. But other "global reinsurers" were to be "reluctant to back the Fund "unless the price is right."

ASEAN needs to pool the ten members catastrophe risks.

The US$ 1.6 billion in capital Thailand's government provided to the Fund plus the US$ 16 billion of coverage foreign reinsurers provided is only approximately 30% of the estimated US$ 48.7 billion economic losses from the 2011 floods. Each ASEAN nation has too much geographically concentrated risk to negotiate from a position of strength with reinsurers, catastrophe bond and other investors and lenders both before and after major catastrophe losses. In 2013, Thailand's insurance regulator proposed a new model diagramed in the chart, which we will refer to as the "Basic Model."

The Basic Model's structure is good. But it does not have an adequate business model.

It's 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 "RLS investors" which are 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 its pooled business.

The Basic Model will not work for several reasons.

It should not use insurance policies in countries that lack adequate insurance companies and regulations with the resulting slow catastrophe claim payments to millions of policyholders. It should not rely only on the availability and affordability of on-going insurance and reinsurance and catastrophe bond coverage. It should not be dependent financially on prompt, undisputed catastrophe recovery payments from them. It has to have its own, ample loss funding ability. It needs to raise an impressive, extremely large amount of start-up capital. It needs to 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 will not be able to attract committed long-term capital from investors if it cannot assure them it has unquestioned access to massive further capital, independent of their capital. That is essential to its solvency and continued operation after large loss years.

ASEAN RE needs the committed support of a major "outside equity investor."

China has the long-term commitment to the economic growth of ASEAN, which currently generates approximately 10% of China's annual GDP. It 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. Protecting those loans and ASEAN's economic growth will increase the requirements for the amount of catastrophe coverage.

China is the "first moving" strategic investor crucial to establishing ASEAN RE.

It is able to provide the massive capital backing that ASEAN RE needs. Unlike the 10% to 20% profit reinsurers need, China is a strategic investor. It has multifaceted, on going trade relationships with ASEAN nations. Unlike the reinsurers and catastrophe bond investors, China can make a long-term commitment to financially support ASEAN RE in both high and low loss years. As an enterprise risk management strategy protecting the solvency of ASEAN RE, China's support ameliorates the deficiencies of it relying only on whether reinsurance and catastrophe bond coverage is available and priced at affordable costs. China's support enables ASEAN RE to take advantage of the fully collateralized protection offered by catastrophe bond investors and achieve competitive pricing and terms for reinsurance coverage, when it is credit worthy and has attractive terms and pricing. Unlike the post-catastrophe loans provided by international development banks, this ASEAN RE business model does not interfere with the sovereignty of ASEAN governments.

China has the huge financial resources needed to enable ASEAN RE to negotiate as a highly capitalized, large source of pooled long-term business with other potential outside equity investors, reinsurers and catastrophe bond investors. China Re's shareholder, China Investment Corporation has assets of US$ 653 billion. That is equivalent to the US$ 578 billion total assets of all the international reinsurers plus US$ 68 billion assets currently provided by catastrophe bond investors. China Investment Corporation's shareholder, the People's Bank of China, holds US$ 4 trillion in liquid foreign currency reserves and bonds issued by many national governments.

ASEAN RE should only provide catastrophe risk transfer and recovery financing directly to the governments in its pool member countries.

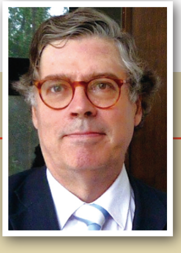
It is then up to each government to decide to use or not use an insurance based mechanism to disburse catastrophe loss payments. Governments could use the type of National Catastrophe Reinsurance Fund, such as Thailand is using to support local insurers, or a bank distributed micro insurance scheme such as India is using, or other domestic distribution mechanisms for catastrophe recovery finance. This "one size does not fit all" approach to the distribution of catastrophe recovery funds recognizes that ASEAN's insurance companies and use of life and non-life insurance are at different stages of development. Attempting to create effective national insurance regulatory systems in different ASEAN nations and to negotiate a uniform, ASEAN wide regulatory framework will take many years. The Whyte Daimin Model also does not interfere with the self-determination and sovereignty of any ASEAN state.

ASEAN RE needs "Whyte Daimin Model" that includes the following features.

It will provide parametrically triggered catastrophe recovery funding only directly to ASEAN governments. 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. Each 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. ASEAN Re can hold or sell the bonds in the international capital markets. It can also raise capital in the capital markets by itself issuing bonds. Its credit worthiness and credit rating provided by its own huge capital, is further enhanced by the credit rating of its outside major strategic equity investors.

Our next article will explain further how the Whyte Daimin Model for ASEAN RE works, why its implementation is essential, and how it can take advantage of reinsurance and catastrophe bonds when the coverage they can provide are reliable and relatively inexpensive. This is the eighth article in our series presenting new models for catastrophe risk transfer and financing.

Sidebar



John Milligan-Whyte designed the New Adequate Model for ASEAN RE. He is chairman of Whyte Daimin Investments Limited and was Chairman of the Committee Advising Bermuda's Minister of Finance on Reinsurance and Insolvency, member of Bermuda's Law Reform Commission and the United States National Association of Insurance Commissioners' Advisory Committee, which drafted the US Model Insurance Act and Vice Chairman of the Insurance Section of the American Bar Association. He was a legal advisor of and a director of insurance, reinsurance and hedge fund companies from 1984 to 2008 in Bermuda, co-recipient of the 2002 Asian M&A Deal of the Year Award and was elected the first non-Chinese recipient of the China Business Leaders Summit's Outstanding Business Leader's Social Responsibility Award in 2010.

Dai Min is a Research Professor and Chief Executive Officer of the Whyte DaiMin in Investments Catastrophe Recovery Finance Center. Co-author of 11 articles published in the "'Insurance & Finance" columns by China State Finance Magazine and China International Business Magazine (English), Worked at United Nations and Wall Street and has advised foreign and Chinese companies and government agencies since 1990. In 2006, she established "China Sub-Conference" in the prestigious "Hawksmere International Reinsurance Congress"., and initiated the China Insurance Industry Leadership Program approved by the China Insurance Regulatory Commission, funded by XL Group Plc, at Wharton Business School and Renmin University.