

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

by JOHN & DAI MIN MILLIGAN-WHYTE

This article pioneers a new type of catastrophe triggered funding provided directly to municipal governments by investors through Chinese banks. It explains why it should be developed and tested in some of China's catastrophe pilot projects: It is a cheaper, safer, simpler and better way for municipal governments to commercially transfer and fund their catastrophe recovery costs. It avoids the inadequacies and unnecessary costs of insurance and reinsurance and creates a new socially responsible catastrophe recovery funding asset class for foreign and Chinese investors.

Large international reinsurers hope to develop profitable roles in providing China's catastrophe recovery funding that becomes crucial to China's social stability. Currently all of the pilot projects have been focused on using insurance and reinsurance solutions. But, using catastrophe insurance provided by SOEs that rely on payments from foreign reinsurers is not a good model for China. Insurers and reinsurers only want profitable risks where the premiums they receive over time significantly exceed their administrative and loss costs.

The insurance based catastrophe recovery funding system China is now being guided on to the path of becoming reliant upon will exposed China to major price increases or reductions in coverage determined by the foreign reinsurers. It also exposes both China's nascent catastrophe insurance and reinsurance system and SOE insurers to credit risks due to the possible non-payment or insolvency of foreign reinsurers. It may only become

obvious later in this decade that using only insurance and reinsurance in the pilot projects results in China's failure to create a reliable and commercially funded catastrophe loss transfer and funding system, which the State Council is seeking in the pilot projects.

China's SOEs are best suited to insuring profitable high frequency, low severity losses. SOEs are not suited to insuring and then relying on foreign reinsurers to pay unprofitable high severity catastrophe losses, which are occurring more often in highly populated areas of China due to climate change.

It is prudent to have some of the pilot projects developing and testing capital market solutions that make payments directly to municipal governments. This is the sixth article in our series recommending that capital market and commodity market solutions be developed and tested in the pilot projects. The fifth article recommended that municipal governments directly issue catastrophe bonds sold in the capital markets in the pilot projects without the costs and inadequacies of insurance or reinsurance.

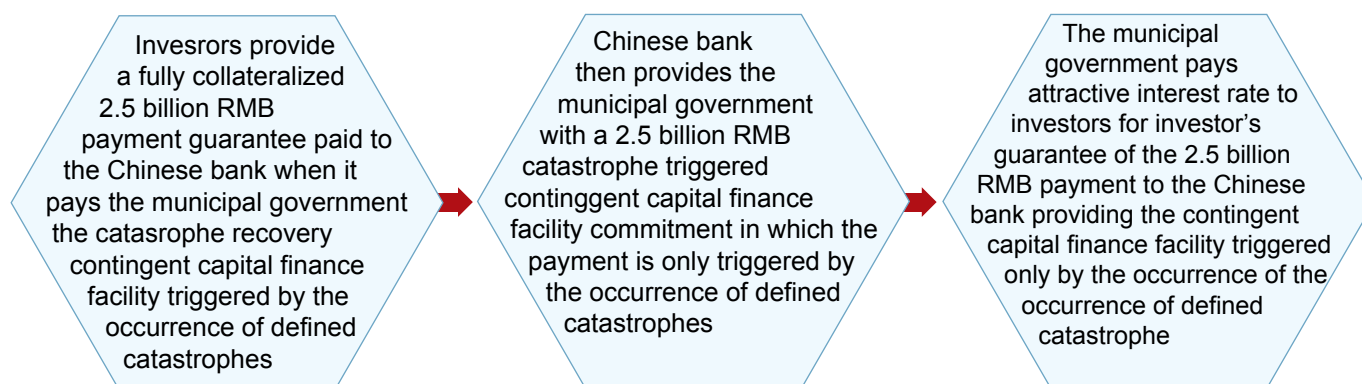
In the United States and Europe up to 40% of catastrophe and agriculture losses are covered by insurance and reinsurance companies. Foreign models for providing catastrophe insurance took centuries to develop and did so in economic legal and cultural systems very different from China's. They are not workable in China's circumstances. In China since only approximately 1% of catastrophe losses are covered by insurance, the dangers of China adopting this approach are not fully experienced yet.

Catastrophe losses are massive and China's desire for affordable

coverage and international reinsurers needs for commensurate profits for taking such massive risks conflict. Using insurance and reinsurance to fund catastrophe losses requires trying to get Chinese municipal governments, companies and citizens unfamiliar with paying for catastrophe insurance to buy it and to pay actuarially sound premiums. The cultural and business attitudes for Chinese municipal governments, companies and public doing so do not exist. They are difficult to create in China anytime soon. Trying to do so is not possible without massive government subsidies that must increase as catastrophe insurance coverage increases. Trying to do so will require China's governments subsidizing premiums to make the risks insurers and reinsurers do take profitable plus funding the peak losses too big for insurers and reinsurers' capital bases and risk appetites. Fortunately, there are cheaper, safer, simpler and better ways for China to commercially transfer and fund catastrophe losses that can be developed and tested in the State Council's pilot projects.

Catastrophe triggered banking solutions are a form of what are called "contingent capital facilities." This is how they can be structured and work in the pilot projects. If a catastrophe covered by the contingent capital finance facility occurs a Chinese bank will immediately pay the amount of funds agreed on before the catastrophe to the municipal government because investors' have provided a fully collateralized guarantee that immediately pays the Chinese bank the funds and it pays to the municipal government. The chart below shows how the contingent capital catastrophe triggered bank finance structure would work, for example, in the Shenzhen

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



pilot project without the inadequacies and unnecessary costs of insurance and reinsurance.

The Chinese bank will charge the municipal government (1) a non-refundable commitment fee and (2) an underwriting fee that the municipal government only has to pay if and when the contingent capital facilities payments are made by the bank because of a covered catastrophe occurring. The contingent capital facility does not increase the debt of the municipal government because the investors' guarantee contracts pay the bank.

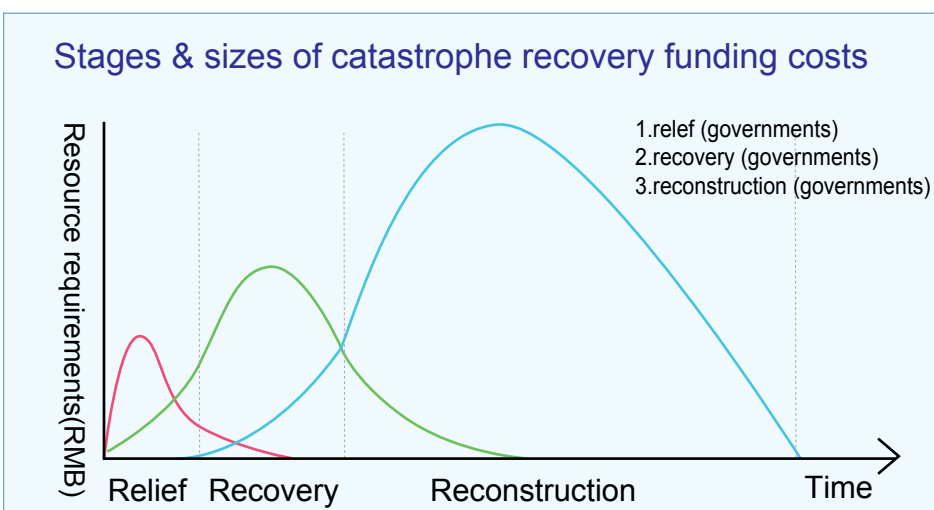
The interlocking bank contingent capital facility and investors' guarantee contracts provide immediate payments by the Chinese bank directly to the municipal government at the center of public demands for catastrophe relief. This has many advantages over insurance claims being made to SOE insurers, and if accepted by foreign reinsurers, then funds being paid to SOE insurers, then by the SOEs to the municipal government, and then paid to those covered by the insurance harmed by the catastrophe. This process, discussed in detail later in the article, creates delays and dangers of non-payment and conflict even in the foreign economic and legal systems where it developed. Imagine the complexities, delays, public frustration and unrest it would produce in the lives and minds of those harmed in

catastrophes in China.

It is municipal governments that must meet the urgent public demands to pay the massive costs in the three stages of catastrophe relief: in the immediate (1) emergency relief and (2) recovery costs and the (3) long term reconstruction costs. The relative size of these is shown in the chart. These costs are too large to be financed by insurance and reinsurance companies. The amount of risk transfer and financing capacity available from the US\$ 88 Trillion international capital markets far exceeds the total capital of US\$ 520 billion of the world's reinsurance companies, which they use to cover many types of risks in addition to catastrophe risks.

The pilot projects need to create new commercial solutions where funding is paid immediately upon a catastrophe occurring directly to the municipal governments involved instead of with the delays and problems of payments flowing from foreign reinsurance to SOE insurance companies and then to the public in urgent need of help.

China's municipal governments currently are forced to reallocate their budget resources to fund the three stages of crippling catastrophe costs. When these costs occur municipal governments revenues are also reduced by decreased economic activity and they have less money for economic development, health and education. These all increase a catastrophe's negative economic impact on



municipal governments.

The immediate payment guarantee that is fully collateralized in advance by investors funds enables the Chinese bank to make immediate payment to the municipal government. The investors have no right to recover the guaranteed payments from the municipal government or the bank. Investors take the risk that they will lose all or part of their investment principal that is put in a trust funding the guarantee if a covered catastrophe occurs. They invest in the catastrophe related asset class because they seek a higher rate of interest and believe that the losses on catastrophe risks are uncorrelated with their investments in other asset classes.

The bank contingent capital facility and guarantee structure does not involve insurance and reinsurance. It can be regulated by existing or new Chinese bank and guarantee regulations. Since they do not involve insurance or reinsurance they do not require complex and unfamiliar new insurance and reinsurance regulations. China has not yet developed or tested a regulatory framework for catastrophe insurance and reinsurance designed for China's circumstances, needs and goals. Investors can retain or transfer the risks they have assumed from the municipal government into the international reinsurance or capital markets. They can do so under existing specialized legislation outside of China in Bermuda and elsewhere, which has developed over decades. Developing such regulatory systems in China will take many years of careful design and testing

Investors receive attractive interest rates for assuming catastrophe risks and paying the specified amount in the contingent capital facility of the potential catastrophe costs borne by the municipal government. China's central bank recently paid in the range of 3.79% to 3.99% interest per annum on bonds it issued in return for it immediately receiving the investors' funds. Lower rates of interest might be negotiated between the investors and municipal government because there is only a contingent risk that a covered catastrophe will occur that triggers all or part of the investors' capital being paid to the municipal government in catastrophe contingent financing transactions. If a covered catastrophe does not occur then investors get their fully collateralized

guarantee principal amount back from the trust holding it plus the interest the municipal government paid them for assuming its catastrophe costs risks.

The interlocking bank catastrophe finance facility commitment and guarantee contracts can use geophysical and weather parametric or index triggers. They will define when a catastrophe payment from bank will be paid to a municipal government and guarantee payments from investors will be paid to the bank. The triggers can use a sliding scale in which the higher the intensity of the weather or geophysical catastrophe a municipal government sustains, the more of the investors' capital is lost.

Basis risk is a problem for insurance and reinsurance companies using parametric or index triggers to determine the payments they receive because their actual losses may not be fully covered. However, basis risk is not the same type of profit or loss problem for a municipal government arranging a catastrophe contingent financing facility with the Chinese bank or issuing a catastrophe bond. The goals of insurers and reinsurers and a municipal government are somewhat different. The municipal government's stakeholders are people that it is arranging catastrophe recovery financing to protect. The insurers and reinsurers have shareholders seeking profits. The municipal government is seeking a commercial arrangement that transfers catastrophe recovery costs that may well be too large to be completely funded commercially. It is glad to get the capital from the investors, even if it does not fully cover all its costs. Since the contingent capital financing model does not involve the costs of insurance and reinsurance, the municipal government may be able to get more protection for the same level of payment.

The limitations and risk of failure in trying to develop insurance and reinsurance solutions can be seen beginning to emerge already in China's pilot projects. In the first pilot project in Shenzhen, PICC insured 100% and reinsured more than 99% of the covered catastrophe risks with Swiss Re. The coverage was for approximately 10 million people with up to 100,000 RMB in loss payments for each for a broadly

defined range of catastrophe caused death, disability and medical expenses. The premium PICC received from the Shenzhen Municipal Government of 36 million RMB was for up to 2.5 billion RMB in protection. The Shenzhen Municipal Government signed a one-year agreement with PICC and the PICC/Swiss Re coverage incepted on June 1, 2014. Six weeks later the worst typhoon in 41 years caused US \$4.4 billion damage in three neighboring provinces and impacted Shenzhen also according to Economic Daily.

If its path had been a little different it would have caused the levels of damage in Shenzhen experienced in its three neighboring provinces. That would have exhausted the 2.5 billion RMB cover, making it unprofitable business for Swiss Re that assumed more than 99% of the risk. The low premium in the Shenzhen pilot project is a classic example of the problem of the potential unprofitability of catastrophe insurance and reinsurance.

Munich Re reportedly declined to participate due to the low premium and because PICC was retaining less than 1% of the risk, which it indicated created "inadequate risk awareness." The pricing of coverage is based on estimates of the probability and size of losses estimated over a long period of time. If a huge typhoon is expected to occur once every 100 years for example it may have statistically a 1% chance of occurring this year. This method of pricing risk is used in reinsurance and pricing interest rates on catastrophe bonds. If what is priced as a once in a one hundred year loss in fact occurs more frequently, reinsurers can seek to recover their formerly underpriced losses in future higher premiums.

China's second pilot project in Yunnan is focused on trying to deal with catastrophe property risks. These were viewed by some Chinese experts as much more difficult to deal with than catastrophe casualty risks in the Shenzhen pilot project. In Yunnan, the Chuxiong catastrophe insurance program has been adopted and will be implemented shortly. It is mainly for earthquake rural housing insurance, in which individuals can voluntarily buy insurance and a premium 100 RMB will provide 20,000 RMB of coverage. How adequate are the levels of that premium or coverage? In

August 3, 2014 there was an earthquake in Yunnan that was 6.1 on the Richter Scale. According to People's Daily, by August 5th direct economic losses caused by the earthquake are more than 6.3 billion RMB. By August 19th insurance payments amounted to 2.75 million RMB, which is less than 0.39% of the losses.

Catastrophe insurance and reinsurance does not work very satisfactorily even in the foreign economies where it developed.

Here is a warning in an American textbook from a lawyer who represents policyholders, "Delay is the single most common problem for clients dealing with catastrophe losses. The insurers involved are overloaded, and then hire inept or incapable independents. Claims get lost or delayed, and policyholders need money and cannot get advances. This unfortunate systemic breakdown and downward spiral has not changed. Every insurer could improve in their catastrophe responses. In the future, though coverage will be available, prices will increase and there will be a closer examination of the risks involved. In place of one insurance company with one policy there will be market policies featuring 5% coverage from AIG, another 5% from Lloyds, and so on, ensuring that no single carrier assumes so much risk that a major catastrophe would put them out of business."

Here is the assessment of a lawyer that represents insurance companies, "After a large loss, many policyholders

have become frustrated to find that, after years of paying premiums, the insurer contends that the coverage doesn't work the way they thought it did. Disaster coverage policies are written to limit liability. Risks are assessed in the premium so insurers are getting premium to pay their losses. The policyholder must understand why explicit documentation is necessary. Unfortunately, when catastrophes strike, many insurers grow frustrated when their policyholders' delay in producing information that would help get the claim paid, and estimates are not established on a timely basis and documentation is not assembled. Insurance companies must have documentation and justify to the reinsurers why they paid."

Here are some of the problems in using insurance and reinsurance in the pilot projects.

In light of the economic costs of the July typhoon causing huge losses in Shenzhen's neighboring provinces and the August earthquake losses impacting Yunnan, foreign reinsurers' appetite for taking inadequately priced risks can at any time disappear abruptly for many reasons beyond China's control. The costs of municipal governments committed to a system based on buying insurance and reinsurance protection are beyond their control unless they stop providing that protection or buy it at whatever price the foreign reinsurers dictate. It may be difficult to get consumers to buy coverage voluntarily. It may become evident that

the costs of actuarially sound pricing of them doing so makes insurance coverage unattractive to consumers. The insurance coverage that municipal governments and consumers are willing to pay for may be much less than their economic losses from catastrophes. The frustrating complexity and delays in municipal governments and Chinese consumers trying to make insurance claims in the midst of a catastrophe and then of insurance companies trying to make successful reinsurance claims and the inherent delays in reinsurance and insurance companies paying accepted claims. If SOEs provide catastrophe insurance coverage to a municipal government and reinsure over 99%, as PICC did in the Shenzhen pilot project and for any reasons foreign reinsurers do not pay, they may require government bailouts.

All these problems are inherent in insurance and reinsurance. They can increase the costs of Chinese governments at all levels and trigger public anger at China's government owned insurance companies and municipal governments that try to rely on catastrophe insurance and reinsurance. These are not the results the State Council is seeking in the pilot projects. 50% of US\$ 3.5 Trillion of world's catastrophe reinsurance and cat bond protections. We recommends that State Council develop and test the "Contingent Capital Financing Model" in order to build a catastrophe risk transfer and financing system with Chinese characteristics that has affordable and sustainable benefits for China.

Sidebar



John & Dai Min Milligan-Whyte

John Milligan-Whyte, the author of Whyte Daimin Reinsurance Finance Center's China Catastrophe and Agriculture Insurance System Plan and Shanghai's Free Trade Zone Plan, was Chairman of the Committee advising Bermuda's Minister of Finance, member of Bermuda's Law Reform Commission and United States National Association of Insurance Commissioners' Advisory Committee Drafting the US Model Insurance Act and Vice Chairman of the American Bar Association's Tort & Insurance Section. He is a director of China Capital Limited and was a director of insurance, reinsurance and hedge fund companies, co-recipient of the 2002 Asian M&A Deal of the Year Award and of the 2010 China Business Leaders Summit's Outstanding Business Leaders' Social Responsibility Award.

Dai Min, a Research Professor and President of Whyte Daimin Reinsurance Finance Center, initiated the China Insurance Industry Leadership Program with Wharton School and Renmin University, funded by XL Group Plc, approved by the China Insurance Regulatory Commission and was a currency trader on Wall Street and has advised Chinese and foreign companies since 1990.