



SOCIETY OF ACTUARIES

Article from:

Reinsurance News

July 2011 – Issue 70

Reinsurers: The Impact of Systemic Risk and Natural/Manmade Catastrophic Disasters

Before the financial crisis, I don't recall the term "systemic risk" having been bantered around much. Not so since the financial crisis. We are two-plus years into the financial recovery and we seem to hear this term quite frequently on the news and in print—and not just from financial reporters or financial media. Just to be clear, here is a definition I Googled from the Internet:

"Systemic risk is the risk imposed by inter-linkages and interdependencies in a system or market, which could potentially bankrupt or bring down the entire system or market if one player is eliminated, or a cluster of failures occurs at once. Systemic financial risk occurs when contingency plans that are developed individually to address selected risks are collectively incompatible. It is the quintessential 'kneebone is connected to the thighbone ...' where every element that once appeared independent is connected with every other element."

We hear this term used in conjunction most often with banks and other financial institutions. Much activity since the crisis has been centered on the structure of massive and unprecedented federal bailouts—not just in the United States, but also around the globe—of financial firms and financial systems. We have witnessed the passage of legislation in attempts to try and avoid such an occurrence in the future, or at least to make the impact not as severe.

There are two key assessments to measuring systemic risk: the too big to fail (TBTF) and the too interconnected to fail (TICTF). TBTF can be measured in terms of an institution's size relative to the national and global marketplace, market share concentration, and competitive barriers to entry. TICTF is a measure of the likelihood and amount of medium-term net negative impact to the larger economy of an institution's failure to be able to conduct its ongoing business.

Couldn't the essence behind the kneebone connected to the thighbone be a reference to the reinsurance community as well? Doesn't the reinsurance community rely on "inter-linkages and interdependencies ... which could bring down the entire system if one player is eliminated or a cluster of failures occurs at once?" Are there reinsurers TBTF? Is the reinsurance community TICTF?

The issue of TBTF is not necessarily a problem for insurance and reinsurance companies where bigger is considered better in terms of



Larry Stern is president of Canterbury Consulting, LLC in Charlotte, NC. He can be reached at larry_stern@earthlink.net.

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being able to diversify risk. Although one might ask, "Didn't the U.S. government classify AIG as TBTF?" I contend the insurance units within AIG were operating efficiently and profitably. It was not their failure which brought the company to be so classified. However, the issue of TICTF may be more applicable to insurers and reinsurers.

Studies looking at the interaction of the reinsurance market with other parts of the financial system in recent years have concluded the comparatively small size of the reinsurance sector makes it difficult to conclude it is systemic in the broader sense of the definition. It appears the reinsurance sector perhaps has limited influence to cause significant damage to the entire financial system. On the other hand, the reinsurance sector does have an effect on the real economy in terms of goods and services. Reinsurers provide risk diversification and increase capacity to direct insurers by:

- widening the capital base available to support undiversifiable risks;
- pooling risks across different direct insurers, sectors, and geographical markets; and
- supplying information, expertise and similar services to their insurance company clients, making it possible to insure risks which otherwise could not have been.

Reinsurers have been remarkably resilient in the face of extreme stress events—the Northridge earthquake, Hurricanes Andrew and Katrina, the destruction of the World Trade Center, the earthquake/tsunami in Indonesia, and, to a lesser extent the earthquake in Haiti, to name a few of the more recently publicized. It is anticipated the damage from the earthquakes in Chile and New Zealand, and the earthquake/tsunami in Japan will also demonstrate the resiliency of the reinsurance sector. Extreme stress events provide the opportunity for the sector to increase rates which in turn encourages new capital to the sector creating new capacity.

Don't conclude this gets the reinsurance sector completely off the hook. There are dangers to thinking so auspiciously.

- First, is there a limit to capacity? Increases in frequency and severity of claims; and, the market attempting to provide capacity to the rapidly expanding economies of India and China.
- Second, the emergence of a small number of very large, well capitalized expert reinsurers. This increases capacity. However, would the reinsurance sector be in a position to absorb the failure of one of these reinsurers, especially if the occurrence is a consequence of an event significantly impacting other reinsurers? This failure would lead to a mismatch in supply/demand for reinsurance coverage leading to a mismatch in supply/demand in the insurance market—regardless of price.

Ultimately, increases in prices would attract new capital increasing capacity and competition would reset prices to economically affordable levels. But how long will this recovery take?

- Third, disruption could also be triggered by an event causing significant impairment to reinsurance liabilities at the same time as assets are depressed due to a financial crisis (sound familiar?). This could arise from any extreme event or combination of events. The impact of such a failure could be significant—leading to a lack of capacity in existing markets and a lack of available capital to create new capacity. Such an event would ultimately impair insurers, as the lack of reserve credit from reinsurers would make them technically insolvent. This sort of event could pose major structural implications across the global economy, more so than just the failure of one reinsurer, even if it were considered TBTF. Does this make the reinsurance community TICTF?

Food for thought ...

Sorry to disappoint those of you expecting a detailed update on Reinsurance Section activities normally appearing in the Chairman's Corner. We have been busy planning some upcoming thought provoking webcasts and sessions sponsored by the Section for the spring and fall. In this issue you will find:

- A summary from ReFocus written by this year's Co-Chair, Ronnie Klein. This year's conference was the best yet, and attendance has increased each year. You won't want to miss it next year.
- A summary of the LEARN team's activities visiting with state regulators to disseminate reinsurance knowledge written by Jeff Katz.
- The report of the Mortality Improvement research project written by Marianne Purushotham.

The Section is also commissioning the fourth edition of the Life, Health & Annuity Reinsurance textbook authored by John Tiller, Jr. and Denise Fagerberg Tiller. This edition is anticipated to be available in June 2012.

As always we welcome your suggestions and participation in Section activities. Get involved!

Until next time, may all your experiences be "profitable" ones!

Resources used for this article include:

Systemic Risk – Wikipedia
Containing Systemic Risk – Report of CRMPGIII, 2008
Systemic Risk – The Big Picture: David Kotok, 3/16/09
Globalization and Systemic Risk: Douglas Darrell Evanoff, David S. Hoelscher, and George G. Kaufman, 2009