

# Academic Perspectives on Systemic Risk and Insurance

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# What do we know...

## What don't we know?

No universally accepted definition of systemic risk

No universally accepted measures of systemic risk

**Beware:** Many “measures” of systemic risk do not differentiate between instigators of a crisis and victims of a crisis

# Academic Review: Eling and Pankoke (2014)

Exhaustive study of all academic and practitioner work on systemic risk and insurance

43 theoretical and empirical papers reviewed  
30 academic articles (weighted more in deriving conclusions)  
19 Practitioner articles

# Academic Review: Eling and Pankoke (2014) (Cont'd)

Traditional activities distinguished from non-traditional activities

Traditional activities:

- idiosyncratic

- not correlated with each other

- not influenced by economic cycles

# Academic Review: Eling and Pankoke (2014) (Cont'd)

## Overriding conclusion:

No contribution to systemic risk associated with traditional underwriting, and funding and investing activities of insurers.

# Academic Review: Cummins and Weiss (JRI,2014)

FSB and systemic risk factors:

Size, Interconnectedness and Substitutability

These factors do not contribute to systemic risk for insurers...but some caveats:

## 1. Ability of guaranty funds to absorb losses:

“a completely unprecedented, worst case scenario for the life industry could in theory challenge the liquidity of the guaranty system(Gallanis,2009,p. 4)

## 2. Corporate clients with large asset blocks and withdrawals.

# Nontraditional Activities

Examples:

securities lending

life insurer products with guarantees

asset–liability mismatching

reliance on short term funding

providing financial guarantees and CDSs

**Note: None of activities above are necessary for insurance to take place.**

# Academic Review: Harrington, JRI, 2009)

“AIG was heavily exposed to the subprime crisis and the bursting of the housing price bubble. Whether AIG’s CDS portfolio and securities lending actually presented significant risk of contagion has been and will be debated. Critics of the bailout ... argue that the slow and painful process of bankruptcy is generally preferable [to bailouts of selected institutions], especially for nonbank institutions. (p. 803)”



# Specific Comments: Life Insurance

## Regulatory safeguards:

10% capital to asset ratio and mandatory control level RBC

Assets of insurer are not sold at “fire sale” prices in the event of an insolvency

## Specific Comments on Life Insurance: Vaughan (2012) and Schwarcz and Schwarcz (2014)

### Vaughan (2012)

Argues life insurers provide stabilizing force in crisis (i.e., counter-cyclical behavior)

### Schwarcz and Schwarz (2014)

Argues (among other things) that correlated trading among life insurers could contribute to systemic risk

# Specific Comments on Life Insurance: Chiang and Niehaus (2015)

Life insurers' selling off of corp. bonds are correlated i.e., pro-cyclical sell herding.

Behavior is more pronounced in smaller bonds and lower-rated bonds **AND** more pronounced among small insurers with relatively poor performance and low RBC -  
**NOT SIFIs!!**

Although some evidence for pro-cyclical sell herding, no evidence that sell offs have impact on corporate bond prices

**Conclusion: life insurers do not pose potentially destabilizing effects from corporate bond fire sales.**

## Specific Comments on Life Insurance: Berry–Stoelzle, Nini, and Wende (JRI, 2014)

Insurers were able to raise capital during crisis:

“roughly 30% of U.S. life insurers raised new capital during 2008–2009, about double the frequency during the prior 5 years. New issuance was concentrated in insurers specializing in annuities, who suffered particularly large drops in profitability due to their exposure to equity markets through variable annuity products (p. 530).”

## Specific Comments on Life Insurance: Berry–Stoelzle, Nini, and Wende (JRI, 2014) (Cont’d)

### Conclusion:

“This research has important public policy implications. First, if there was no disruption in life insurers’ access to external capital, the extension of the TARP to life insurers...was unnecessary. Second, if life insurers were able to weather the financial crisis like other economic downturns in the past, there is no obvious need to respond to the crisis with additional regulations. Indeed, our results show that earnings and capitalization quickly returned to their pre-crisis levels (p. 559).”

# Specific Comments on Reinsurance: Park and Xie (JRI, 2014)

Likely impact of major global reinsurer insolvencies on U.S. property-casualty insurance industry

Even under an extreme assumption of a 100% reinsurance recoverable default by one of the top three global reinsurers, only 1% of insurers would become insolvent (and 2% would be downgraded).

# Specific Comments on Reinsurance: Chen, Cummins, Sun and Weiss (2015)

Analyze all bilateral reinsurance counterparty relationships of U. S. property-casualty insurers using **network analysis**.

## Results:

Failure of world's top 10 professional reinsurers sustainable (surplus loss  $< 6\%$ ) even with 100% loss given default.

Failure of top 10 group affiliated insurers with 100% loss given default more impactful (18% surplus loss).

# Where Does That Leave Us?

1. How can regulation be designed so that systemic risk is mitigated?
2. Does new regulation such as Solvency II contribute to systemic risk?
3. How can regulatory arbitrage be avoided?
4. What is systemic risk contribution of alternative risk transfer used by insurers (e.g., derivatives)?
5. How do existing risk measures translate into an overall negative impact on the economy?



# Conclusion

## Billio et al. (JFE, 2012)

“As long as human behavior is coupled with free enterprise, it is unrealistic to expect that market crashes, manias, panics, collapses, and fraud will ever be completely eliminated from our capital markets. The best hope for avoiding some of the most disruptive consequences of such crises is to develop methods for measuring, monitoring, and anticipating them. By using a broad array of tools for gauging the topology of the financial network, we stand a better chance of identifying “black swans” when they are still cygnets (p. 555).”

**Thank  
You!**

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# Definition of Systemic Risk

Systemic risk is the risk that an event will trigger a loss of economic value or confidence in a substantial segment of the financial system that is serious enough to have significant adverse effects on the real economy with a high probability. (Group of Ten, 2001.)

# Example of a network

