Discussion: The Role of Capital for Non-bank Actors[1]

Ralph S.J. Koijen - London Business School

[1] Based on "Risks of Life Insurers: Recent Trends and Transmission Mechanisms," which is joint work with Motohiro Yogo (Princeton University).

Risk transformation of the life insurance sector

- Traditional risks:
  1. Interest rates.
  2. Aggregate longevity or mortality.
  3. Policyholder behavior.
- Modern risks:
  1. New products:
     - Minimum-return guarantees (variable annuities).
  2. New tools to manage capital:
     - Shadow insurance.
     - Securities lending.
     - Derivatives.

Outline

- Objectives:
  1. Summarize recent trends for U.S. life insurers.
  2. Discuss potential amplification and transmission mechanisms.
- Main themes:
  1. Risk concentration.
  2. Individual risk exposure easier to quantify, but overall risk mismatch is much harder.
  3. Poorly designed accounting standards and capital regulation can have unintended consequences. Life insurers increase risk to improve RBC.

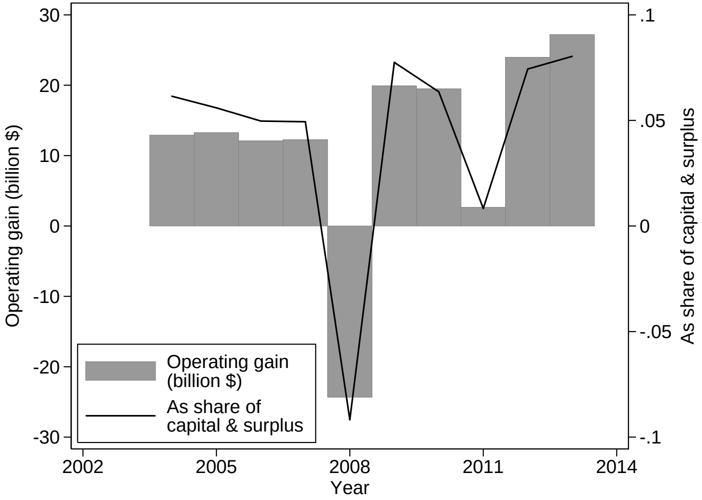
Life insurers during the 2008 financial crisis

- AIG lost $21 billion from securities lending, compared to $34 billion from CDS (McDonald and Paulson 2014).
- Hartford also received TARP because of VA losses.
- Others involved in VA or securities lending applied for TARP: Allstate, Genworth Financial, and Prudential Financial.

Operating gain in 2008 for top 10 financial groups by variable annuity account value

Financial group	Account value (billion $)	Operating gain (share of capital and surplus)
AXA Financial	179	-0.18
MetLife	143	-0.05
Hartford Life	119	-0.52
AIG Life	105	0.00
ING USA Life	98	-0.14
Lincoln Financial	97	-0.01
Manulife Financial	94	-0.46
Prudential of America	79	-0.28
Aegon USA	61	-0.26
Genworth Financial	60	-0.13
Total for life insurers		
with VA guarantees	1,521	-0.09
without VA guarantees	0	0.01

Operating gain from annuities for life insurers with variable annuity guarantees



Shadow insurance

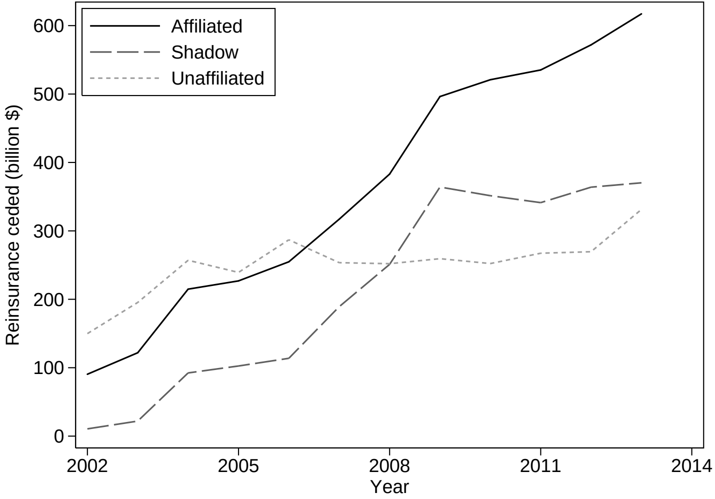
- Shadow insurance: Affiliated reinsurance with an unauthorized and unrated reinsurer.
- Some captives are actually authorized.

1. Liquidity risk from mismatch between LOC and insurance liabilities.
2. More investment risk?
3. Less equity and higher leverage?
   - Lawsky (2013): Conditional LOC and naked parental guarantees.
   - Iowa released financial statements for 8 captives in 2014. Under statutory accounting, surplus would be $-\$2.663$ billion (instead of \$1.497 billion).

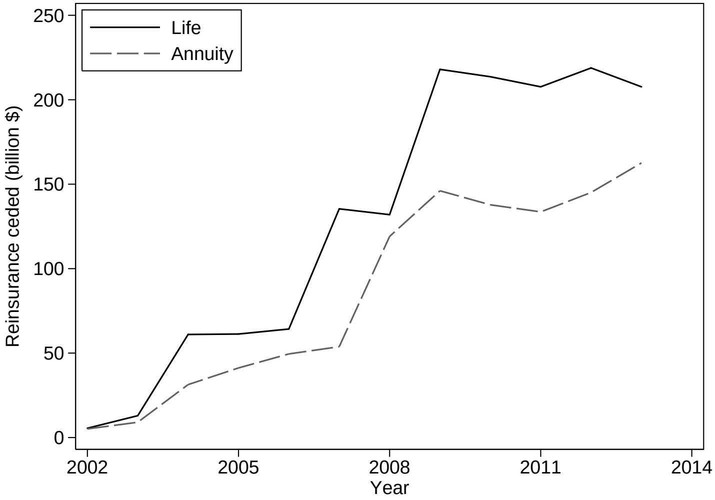
Top 10 financial groups by shadow insurance

Financial group	Reinsurance ceded (billion $)
John Hancock Life Insurance	118
MetLife	45
Athene USA	40
Hartford Life	40
Aegon USA	30
Great-West Life	14
Voya Financial	13
AIG Life and Retirement	12
Global Atlantic	11
Lincoln Financial	7

Reinsurance ceded to affiliated, shadow, and unaffiliated reinsurers



Life versus annuity reinsurance ceded to shadow reinsurers

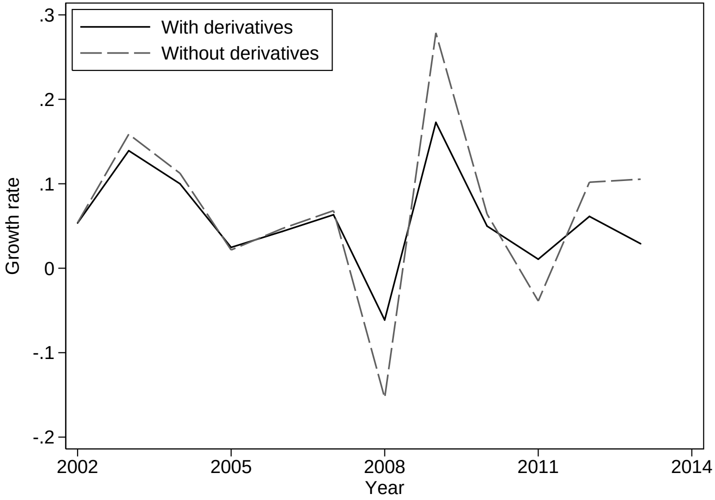


Do derivatives hedge volatility?

- Total notional amount of OTC derivatives held by U.S. life insurers was $1.1 trillion in 2014.
- Question: Hedge or amplify volatility? Derivatives amplify volatility for banks.

1. Basis risk.
    - Long duration of VA guarantees.
    - Hedge statutory, GAAP, or economic capital?
2. Counterparty risk.

Growth rate of capital and surplus with and without derivatives



Potential transmission mechanisms

1. Banks:
   - Captive reinsurance funded by LOC.
   - Counterparties in securities lending and derivatives.
   - Funding through corporate bonds.
2. Corporate bond market:
   - Fire-sale dynamics.
   - Higher borrowing costs for firms.
3. Households:
   - Solvency worries could lead to debt overhang and collapse in demand.
   - Increase in precautionary saving and welfare loss.