INTERNATIONAL MONETARY FUND

THE INSURANCE SECTOR
TRENDS AND SYSTEMIC RISK IMPLICATIONS

Based on Global Financial Stability Report, IMF, April 2016

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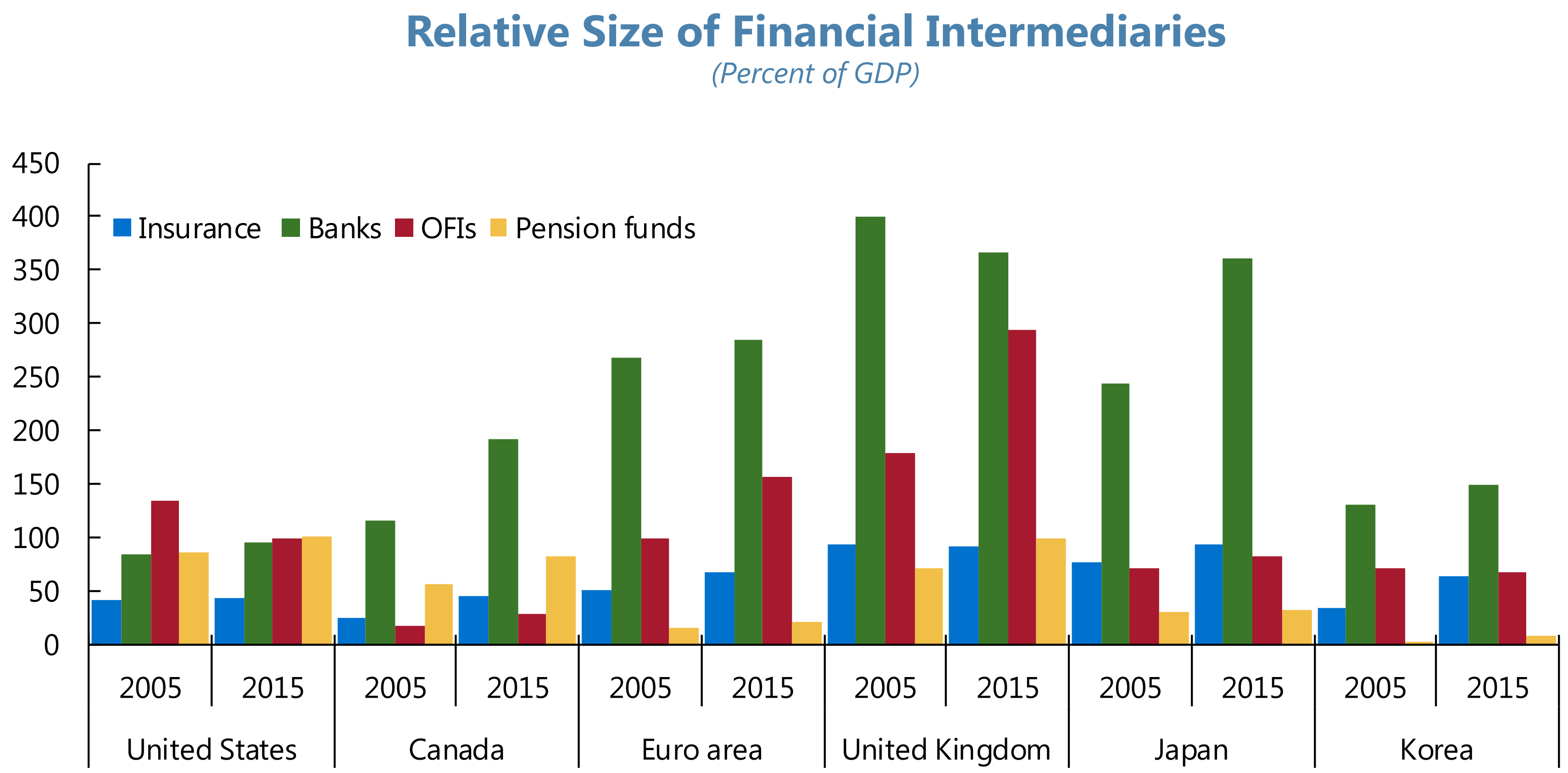
Workshop on Systemic Risk in Insurance

Columbia Business School, October 28, 2016

Motivation and Main Findings

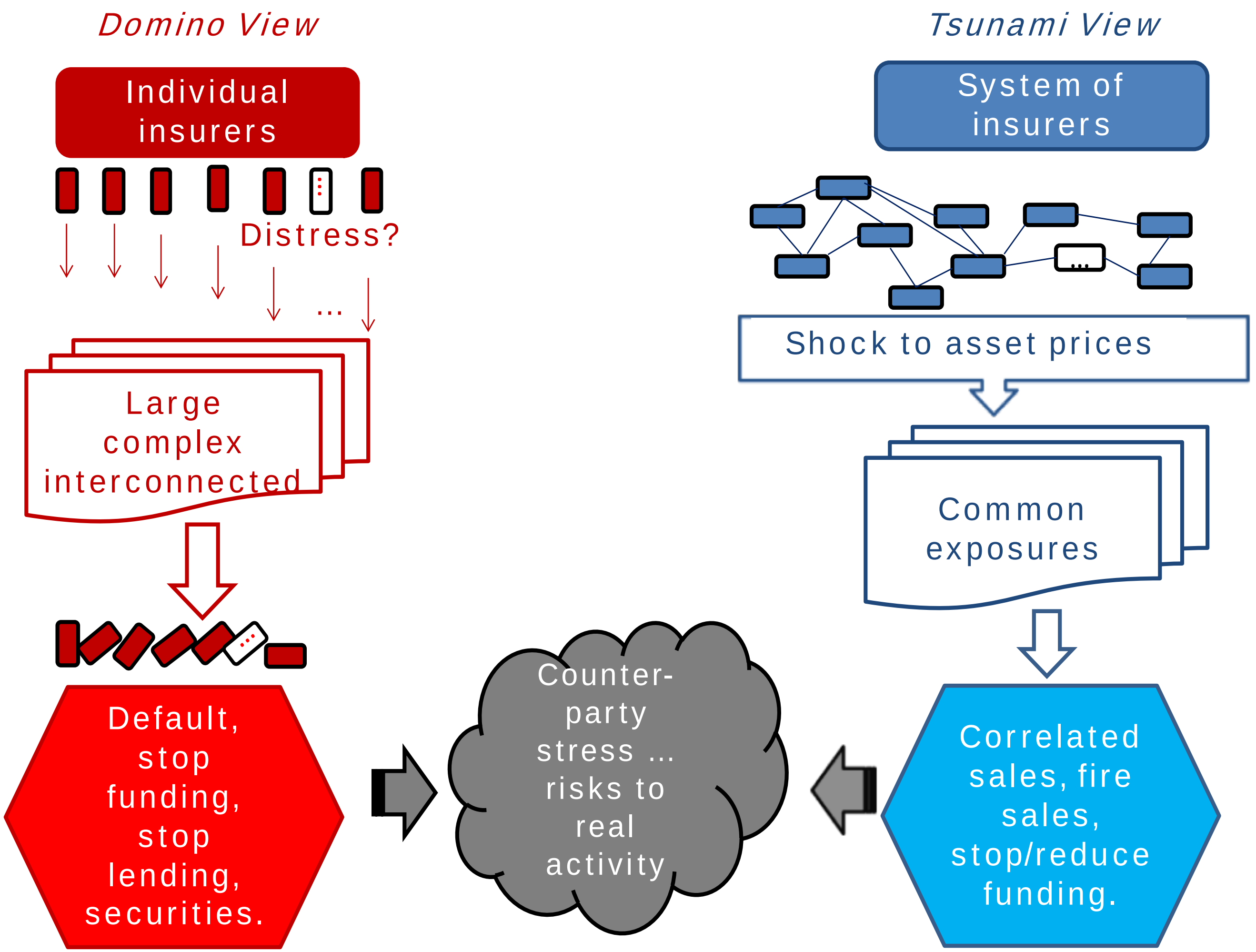
Motivation (1)

- Insurance sector:
  - Big player in financial markets
  - Important economic functions



Motivation (2)

- Two views on systemic risk



Questions answered in GFSR

Has insurance sector's systemic importance changed over time/countries?

What explains changes in systemic importance?

- Investment behavior
- Maturity mismatches
- Business models
- Broader market dynamics

Implications for insurance regulation?

Main findings

Systemic importance

- Increased, esp. life, but lower than banks
- More homogenous, higher commonalities
- Increased market risk and interest rate sensitivities

Spillovers

- Insurers transmit shocks across financial system
- Especially in Europe and North America

Life insurers' assets

- No major shift towards "riskier" assets
- But assets have become "riskier"
- Search for yield among weaker, smaller firms

Regulatory implications

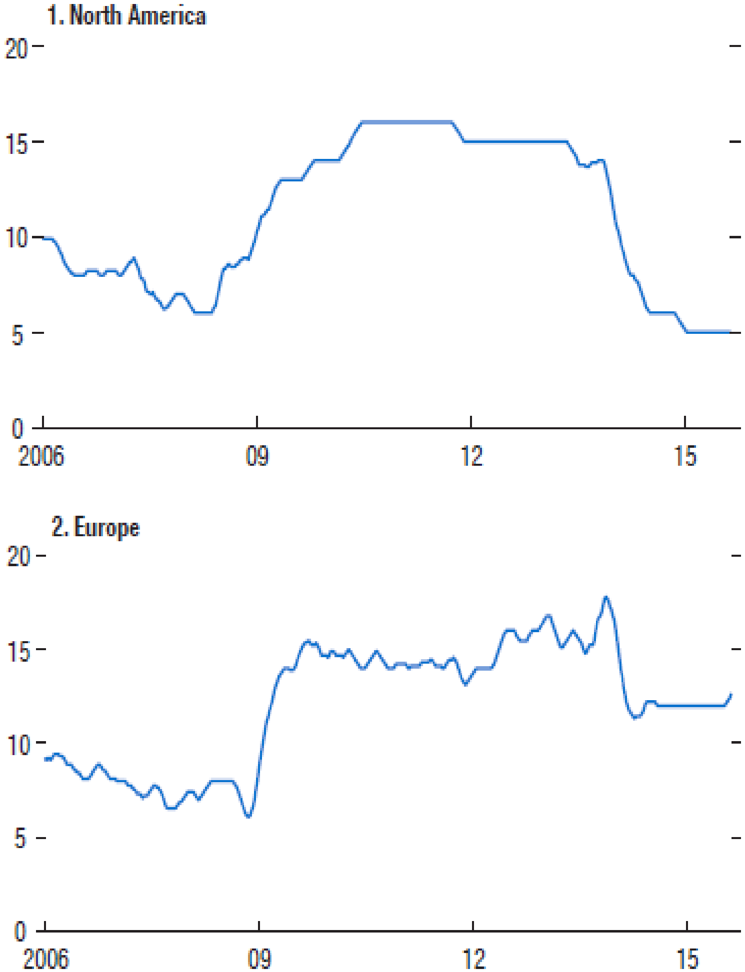
- Macro-prudential approach needed
- International capital and transparency standards
- Focus on smaller and weaker firms

Insurance Sector: Systemic Importance

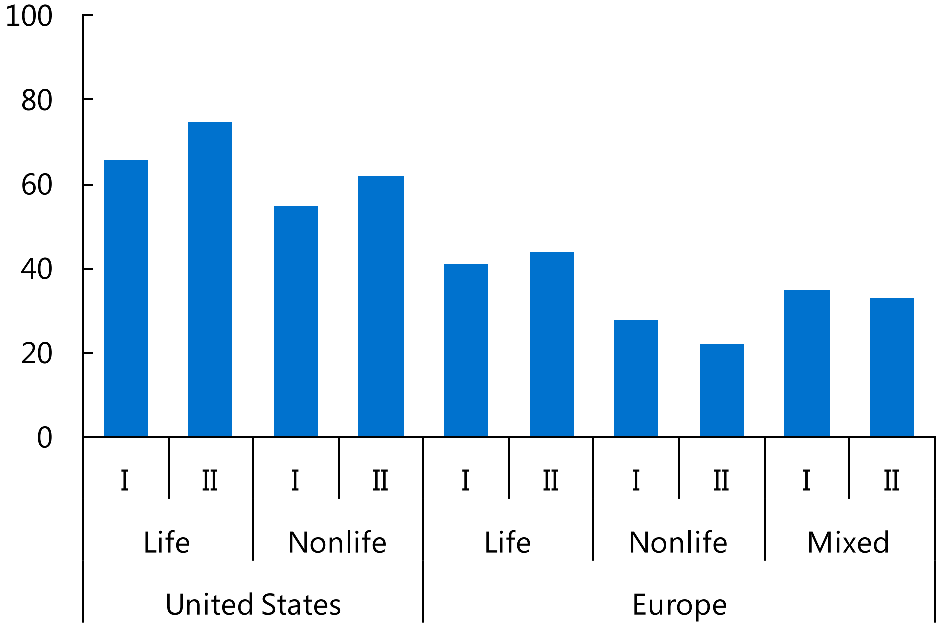
Increased price comovement among insurers

Time series clustering

(Number of clusters)



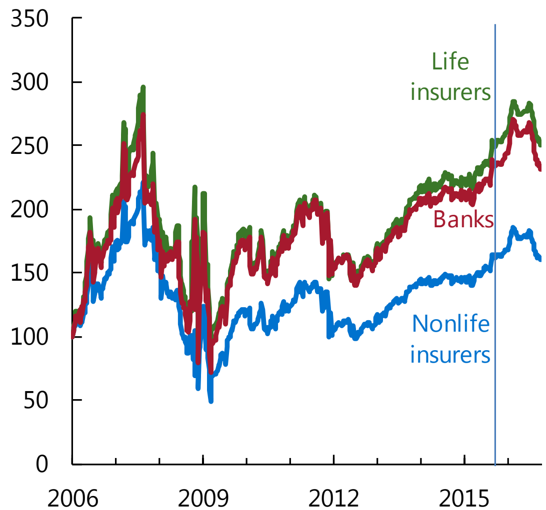
Insurers' Equity Return Due to First Principal Component *(Percent)*

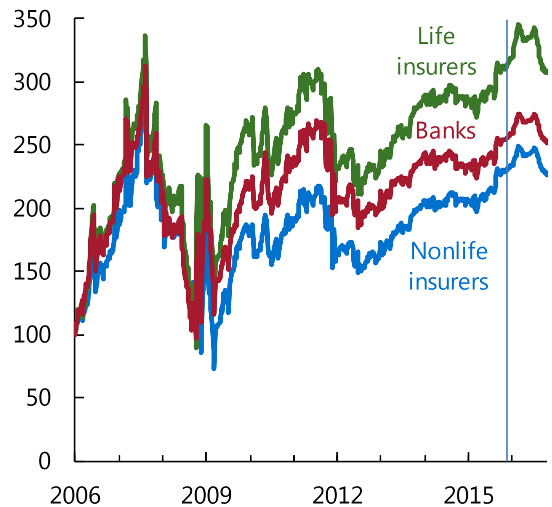


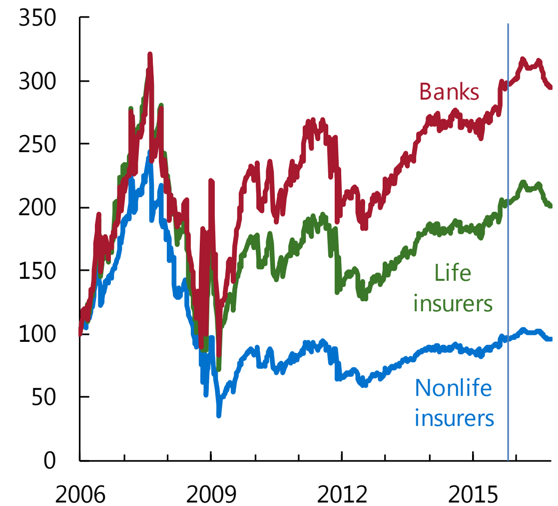
Systemic Risk – rising CoVaR and capital shortfalls

North America | **Europe** | **Advanced Asia**

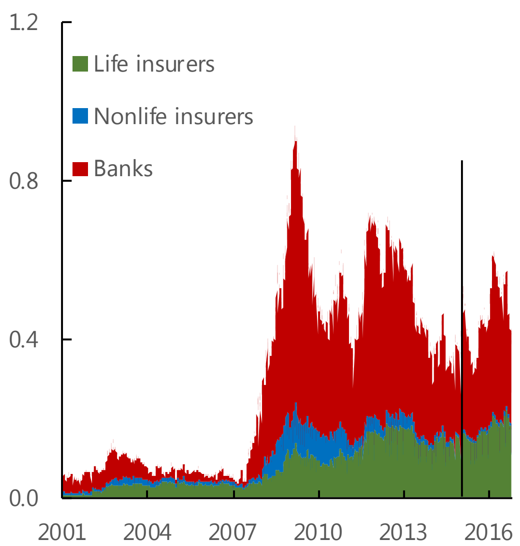
CoVaR Indices *(Normalized, 2006=100)*

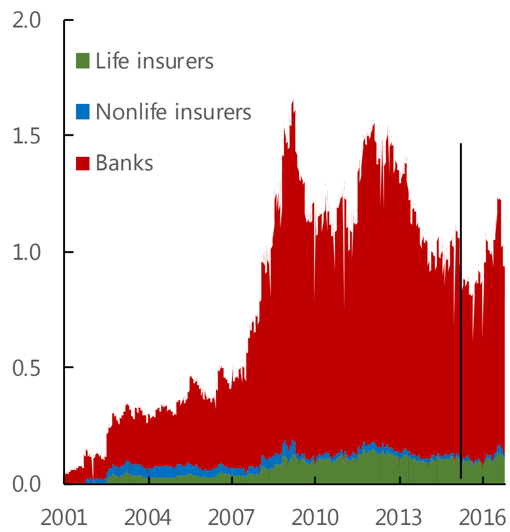


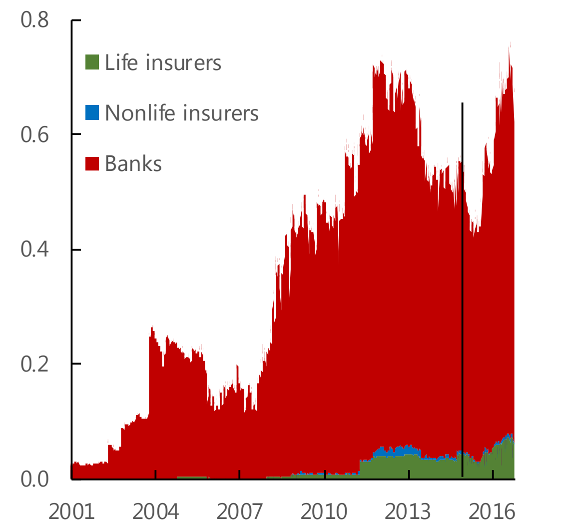




Conditional capital shortfall *(USD trillions)*



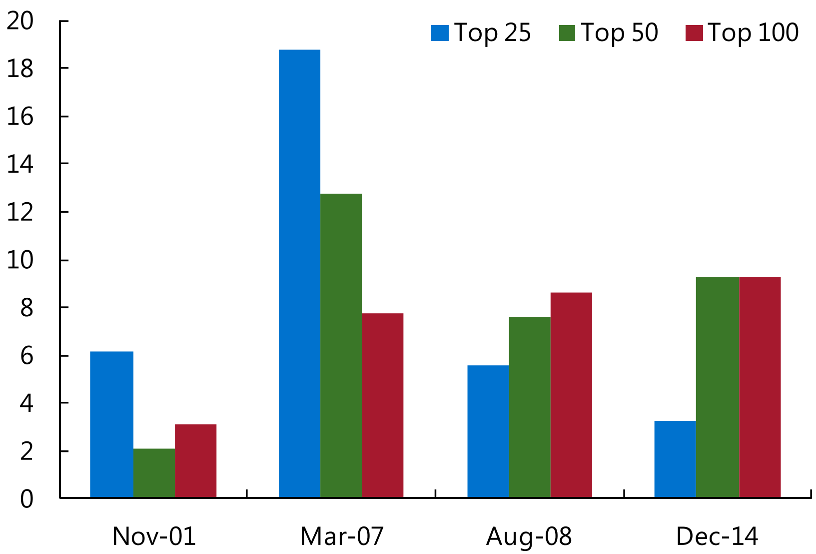




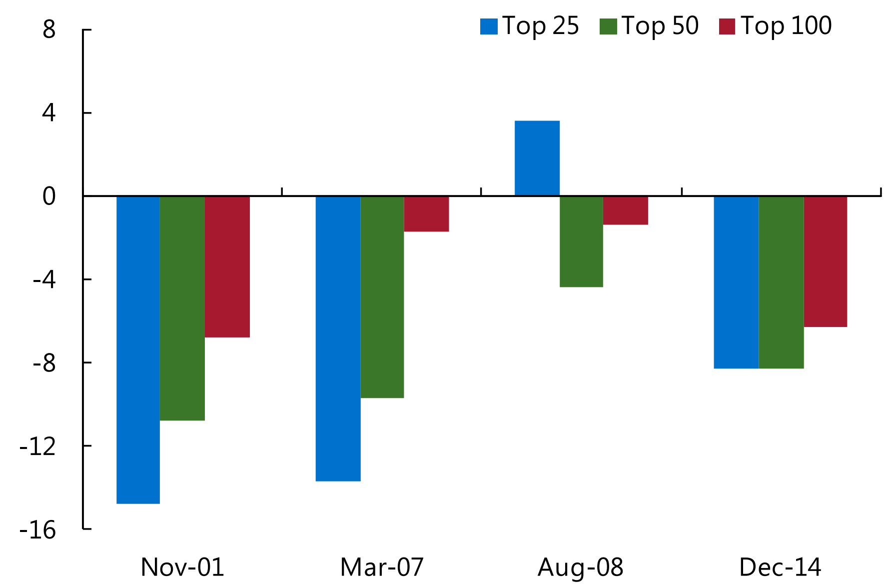
Systemic Risk
Default Correlation Networks rank Life high

Forward-Looking Default Correlation Networks
(Percent; over- or underrepresentation of insurers)

Life insurers



Non-life insurers

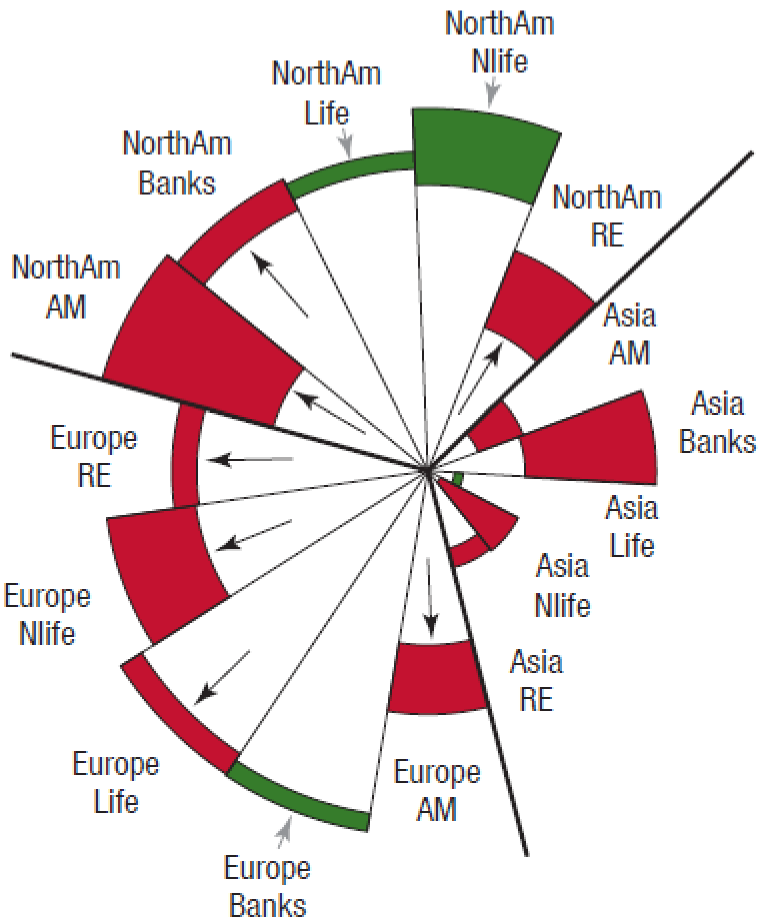


A +10 percent value for the top 100 indicates that there are 10 percent more insurance firms among the top 100 than justified by their sample share.

Systemic Risk Spillovers:
Insurance is shock transmitter

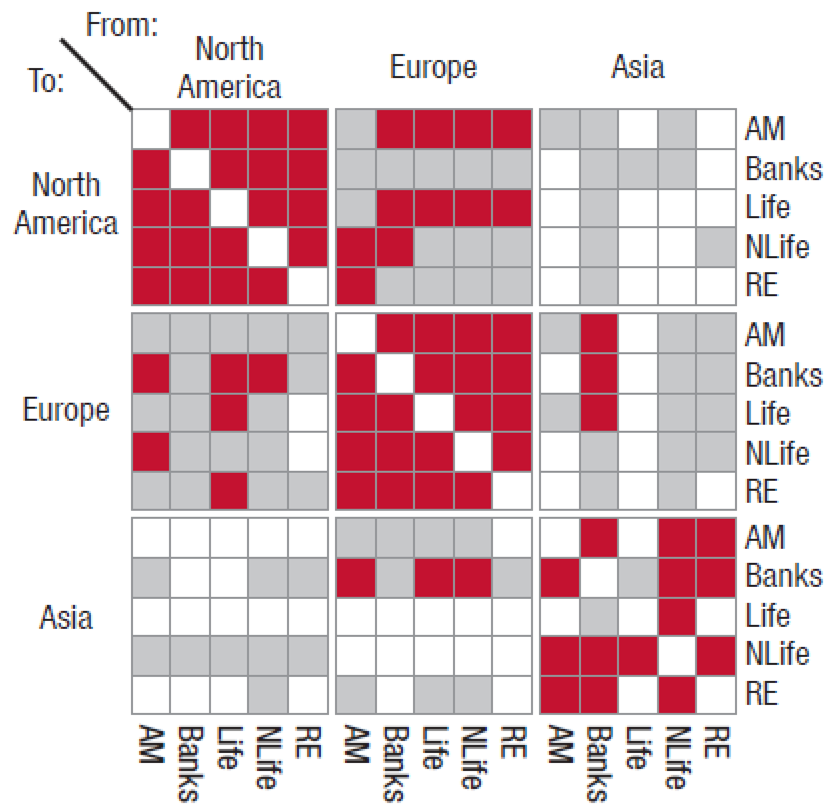
1. Change in Spillover Size Pre- and Post-GFC

Post-GFC increase in spillover magnitude
Post-GFC decrease in spillover magnitude



2. Sector-to-Sector Spillovers

Low-magnitude spillovers
Medium-magnitude spillovers
High-magnitude spillovers



Systemic Importance Drivers

Investment behavior

- Take on greater asset risk in low interest rate environment?
  Across asset categories true only for weaker, smaller firms

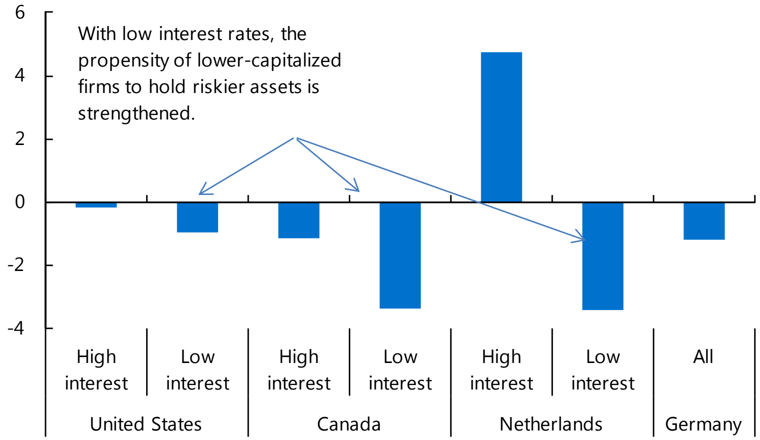
- Increased similarity in asset composition?
  Not apparent

- Greater procyclicality in investment behavior?
  Mixed evidence

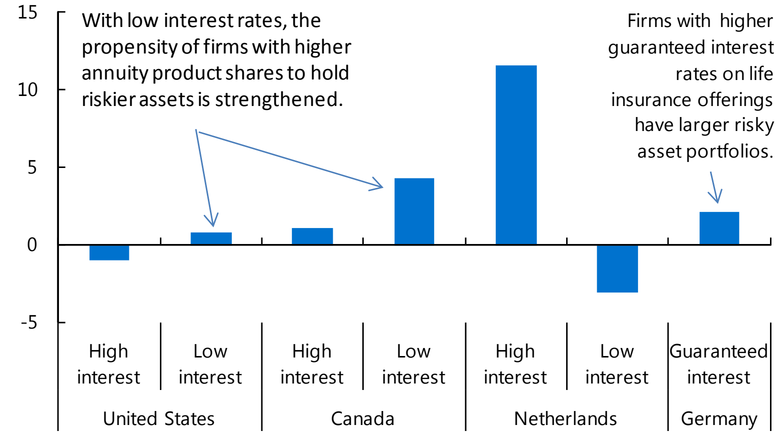
- But greater common exposure to
  aggregate risk
  interest rates

1. More risky investments: *at lower cap, smaller firms and those with more annuity/min.return products*

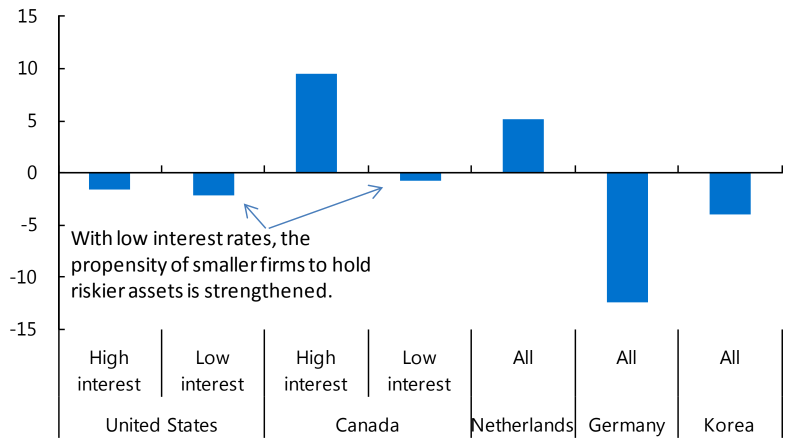
1 In low interest environments, factors that contribute to higher exposure to riskier assets are lower-capitalization ….



2 … a higher share of annuity products in total liabilities …



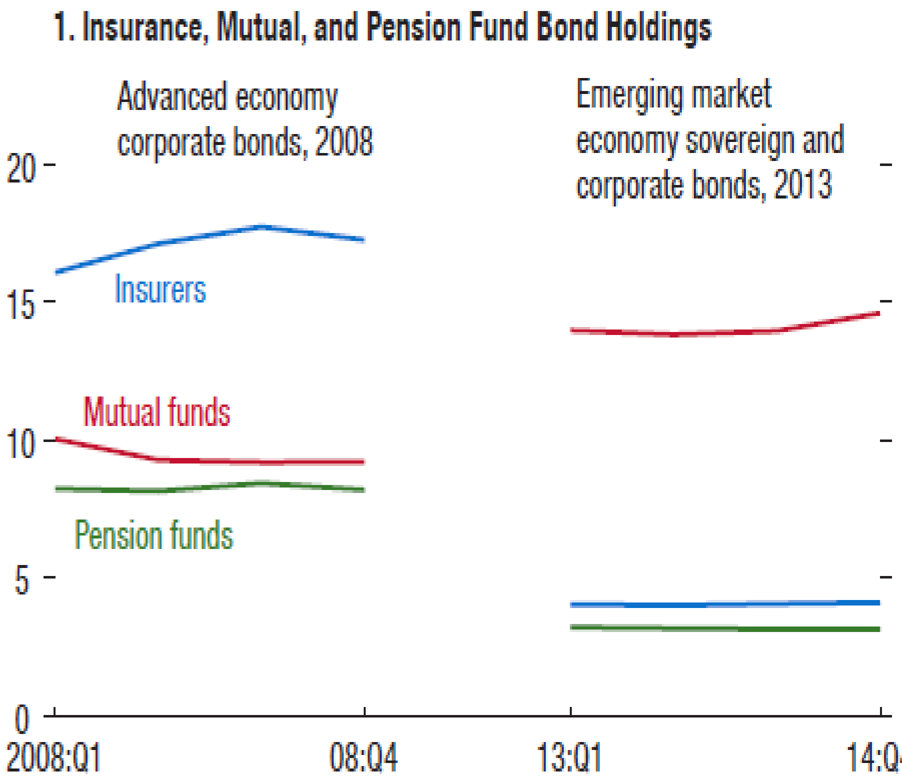
3 … and the size of the firm , with smaller being more exposed



2. Procyclicality
- Mixed evidence

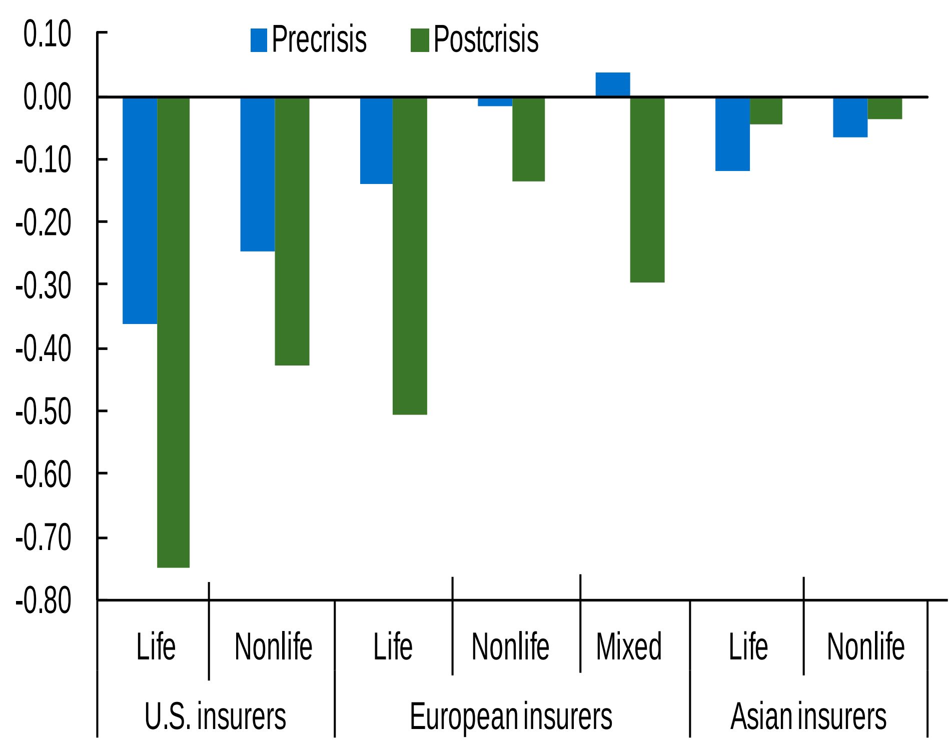
3. Duration mismatches
- Higher i-rate sensitivity

U.S. insurers acted countercyclically in 2008 and contributed to stability



But… *turnover* at firm level did not increase in recent years

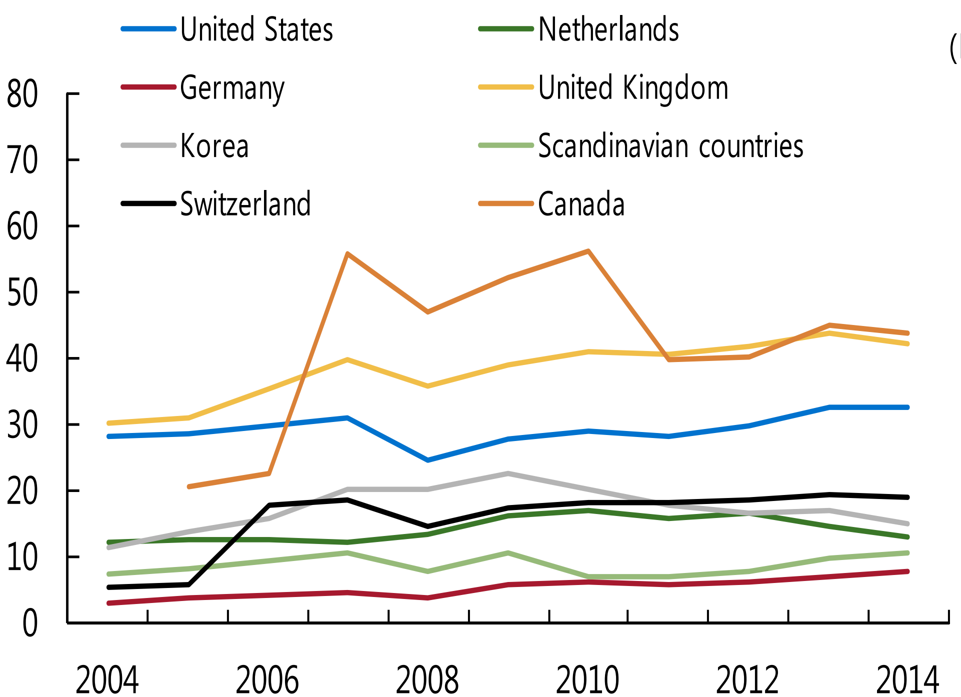
US and European Insurers' Equity Returns' Interest Rate Sensitivity Increases …and so does their net duration mismatch



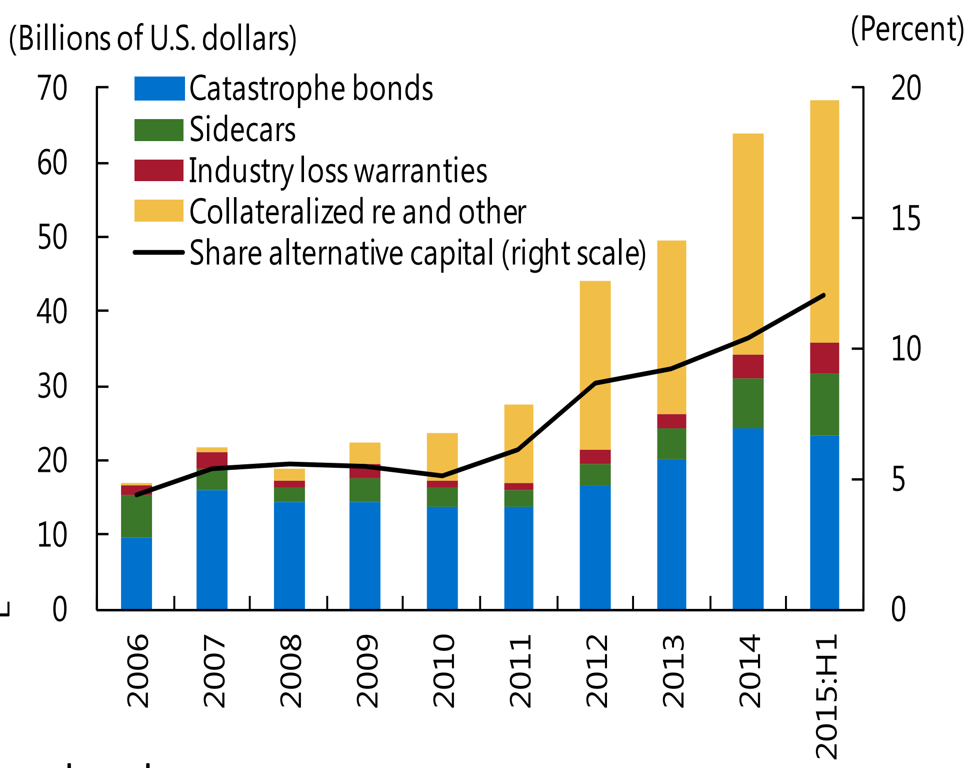
Note: For a negative (net) duration, insurers' liabilities are longer than their assets. Insurers' future business prospects get better (worse) when interest rates increase (fall).

4. Liability side developments *may also contribute to riskiness…*

Life Insurers' Unit-Linked Products (Percent of assets)



Alternative Insurance Risk Capital Instruments



Unit-linked products are a form of long-term insurance whereby the policyholder chooses the investment strategy. These products can, but do not necessarily have to, include guarantees.

5. Changed Market Dynamics
Higher cross-asset correlations post-2010

Temporary factors

- Search for yield
- Lower risk aversion

Structural changes

Increase risk of market illiquidity
Benchmarking more widespread

Greater similarity across insurance firms' stock prices

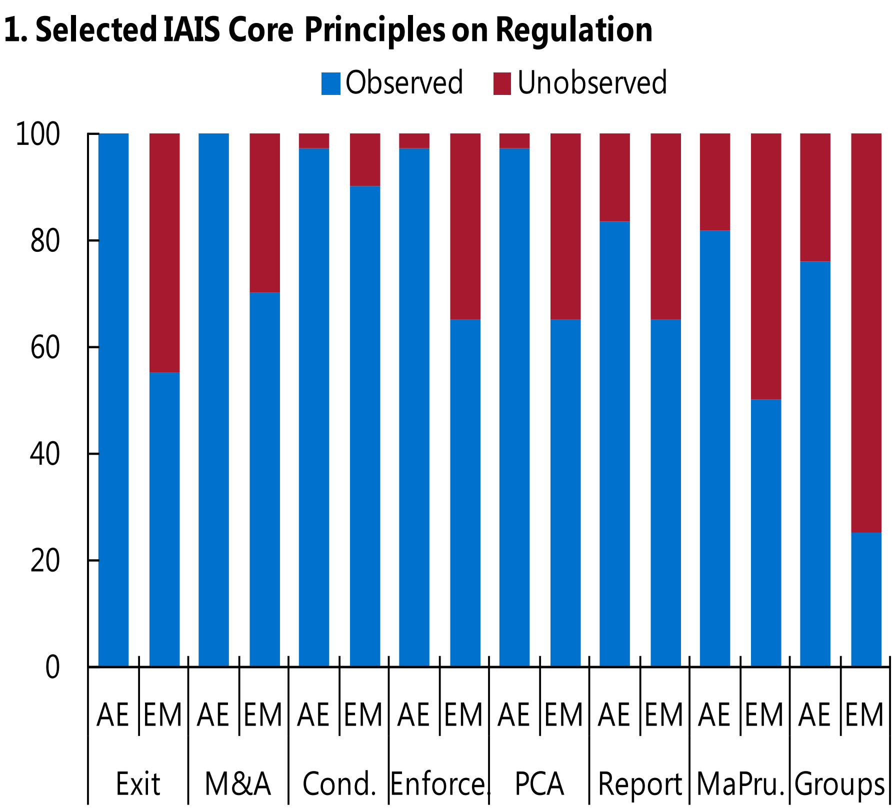
Insurance stocks more affected by ***common shocks***

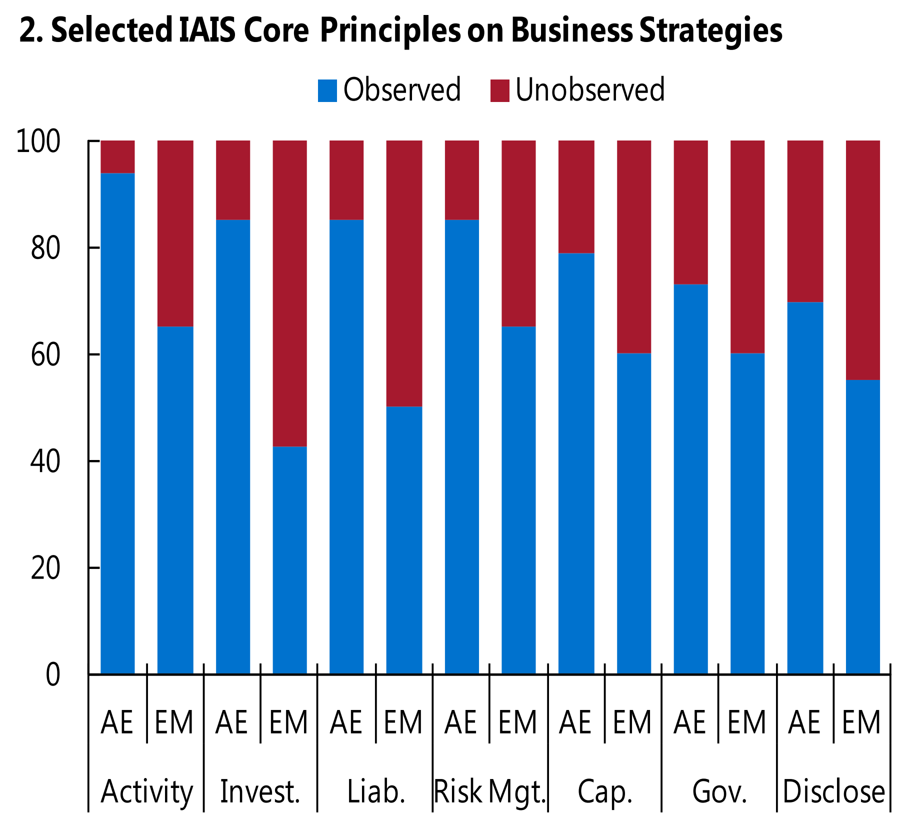
Implications for Regulation

Recent Regulatory Developments

- Regulations now more risk-based and accounting principles more market-based
  - valuations more market-sensitive
  - investment horizons of risky investments shortened
  - the maturity of safe assets extended
- Wide variations in capital requirements and the use of internal models
  - These are among the main problems in developing a global capital framework
  - But progress is being made

Compliance with ICPs





Forward looking lessons for Regulation

- Macro-prudential approach
  - address risks related to common exposures
- Market-consistent valuation standards
  - enhance transparency
  - address duration mismatches
- Supervisory follow-up of smaller and weaker firms
  - Focus should not be restricted to only large firms
  - Too-many-to-fail problem
  - Contagion
- Vigilance to avoid regulatory arbitrage