



Are Insurance Firms Systemically Important?

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(NYU-Stern, CEPR and NBER)

Based on Chapter 9

“Is the Insurance Industry Systemically Risky?” with Matt Richardson in

Modernizing Insurance Regulation, John Biggs and Matth Richardson, eds, John Wiley and Sons, Inc., forthcoming

What is “systemic risk”?



- **Micro-prudential view: Contagion**
 - ✦ Failure of an entity leads to distress or failures of others
- **Macro-prudential view:**
 - ✦ Common factor exposures + Runs
 - ✦ Several entities fail together as
 - Short-term creditors demand immediacy
 - Against long-term assets
 - But the system has limited capacity (capital?) to provide immediacy
- The micro-prudential and macro-prudential views are not necessarily mutually exclusive

What about contagion?



- Macro-prudential view: Contagion can amplify problems *provided* rest of the system cannot
 - ✦ Withstand the distress or failures of others, e.g., because it is under-capitalized too due to a common shock (AIG FP failure)
 - ✦ Re-intermediate the liquidated assets of distressed firms (Lehman)
- Contagion can arise *without* inter-connections
 - ✦ Information contagion
 - Learning about common assets (Great Depression “runs”)
 - ✦ Flow of funds or re-intermediation contagion
 - Insurance firms withdraw from bonds inducing LC runs on banks

NYU Stern Systemic Risk Rankings at

<http://vlab.stern.nyu.edu/>

SRISK = Capital shortfall of a financial firm relative to 8% market equity capitalization in an aggregate market crash of 40% over six month period

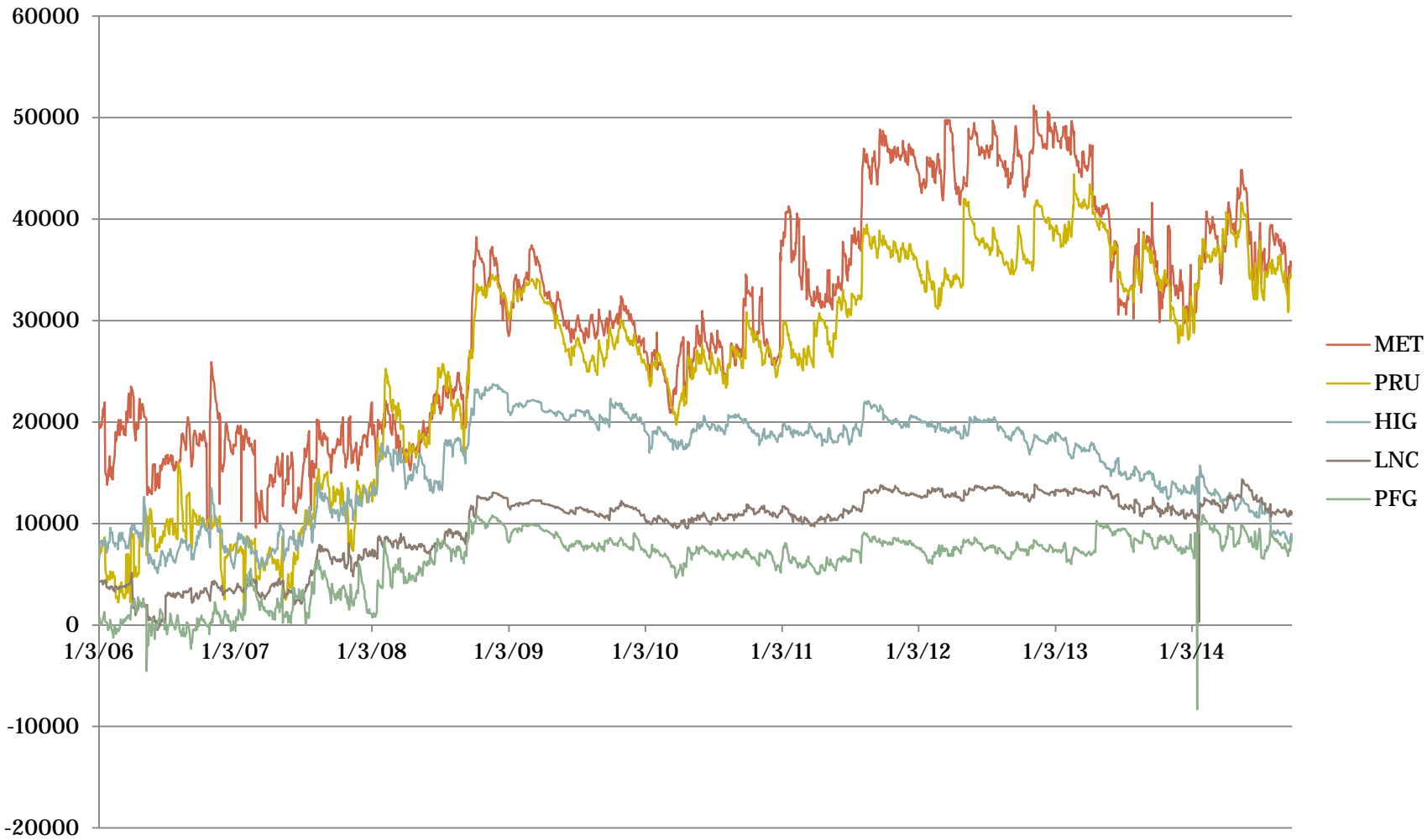
Top 5 Bank and Bank Holding Companies

Ticker	Asset	SRISK	GICS Subindustry
BAC	Bank Of America	44313.28	Other Diversified Financial Services
JPM	JP Morgan Chase	47295	Other Diversified Financial Services
C	Citigroup	44649.47	Other Diversified Financial Services
MS	Morgan Stanley	23395.54	Investment Banking & Brokerage
GS	Goldman Sachs	10925.95	Investment Banking & Brokerage

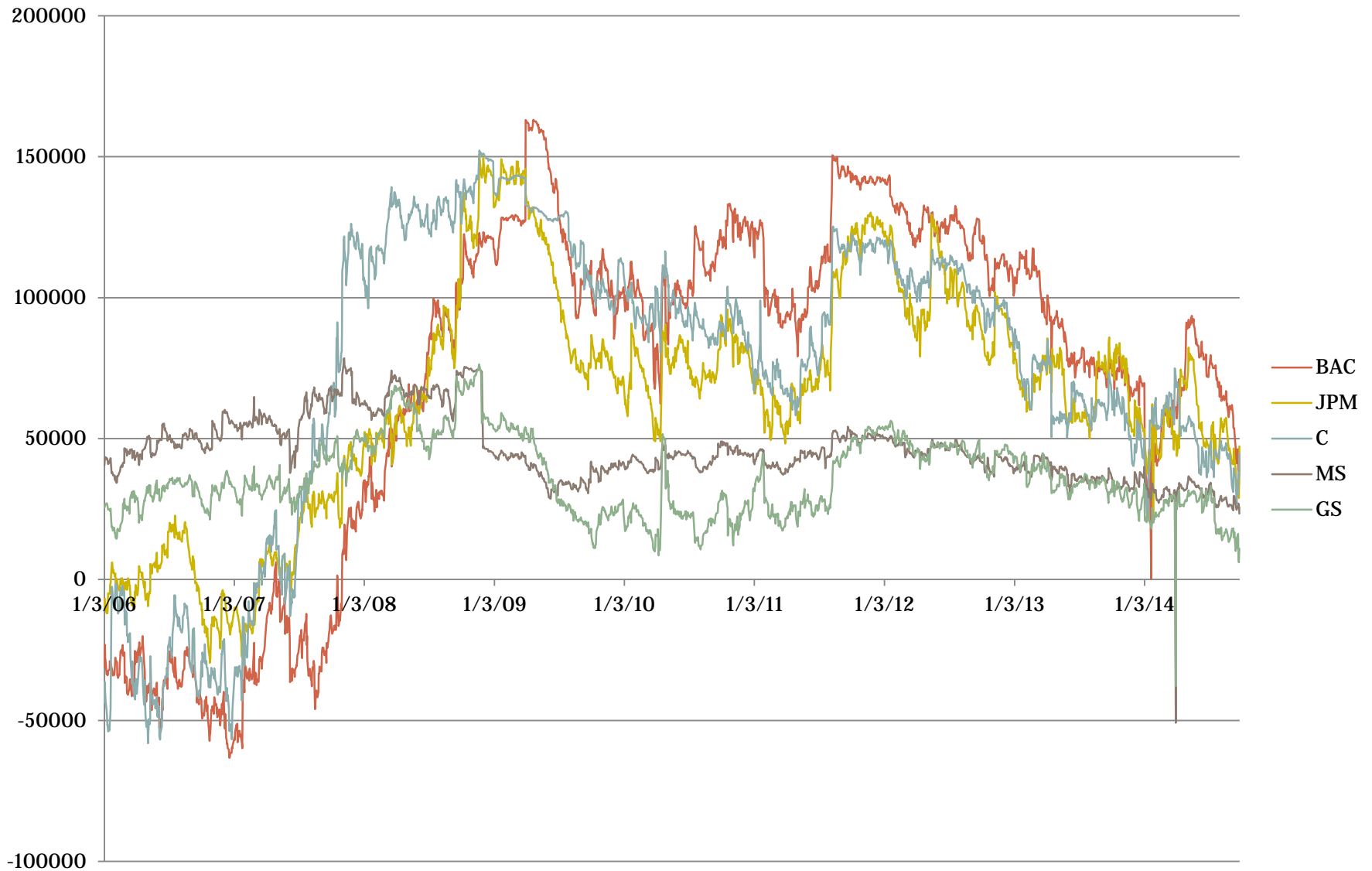
Top 5 Insurers

Ticker	Asset	SRISK	GICS Subindustry
MET	MetLife	35385.7	Life & Health Insurance
PRU	Prudential Financial	34374.54	Life & Health Insurance
HIG	Hartford Financial Services	8226.044	Multi-line Insurance
LNC	Lincoln National Corp	10986.44	Life & Health Insurance
PFG	Principal Financial Group	8237.13	Life & Health Insurance

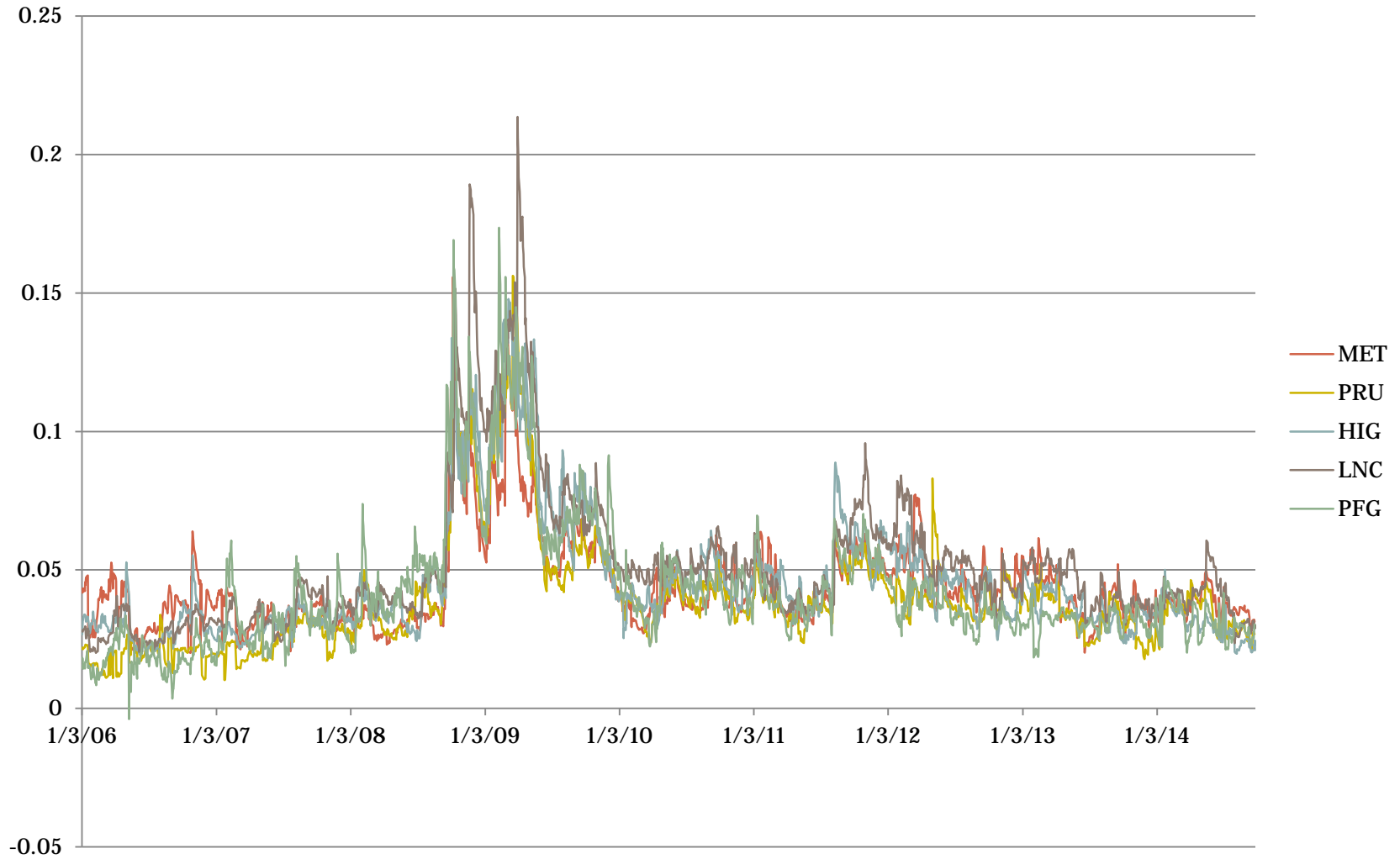
SRISK: Capital shortfall in case of 40% market correction



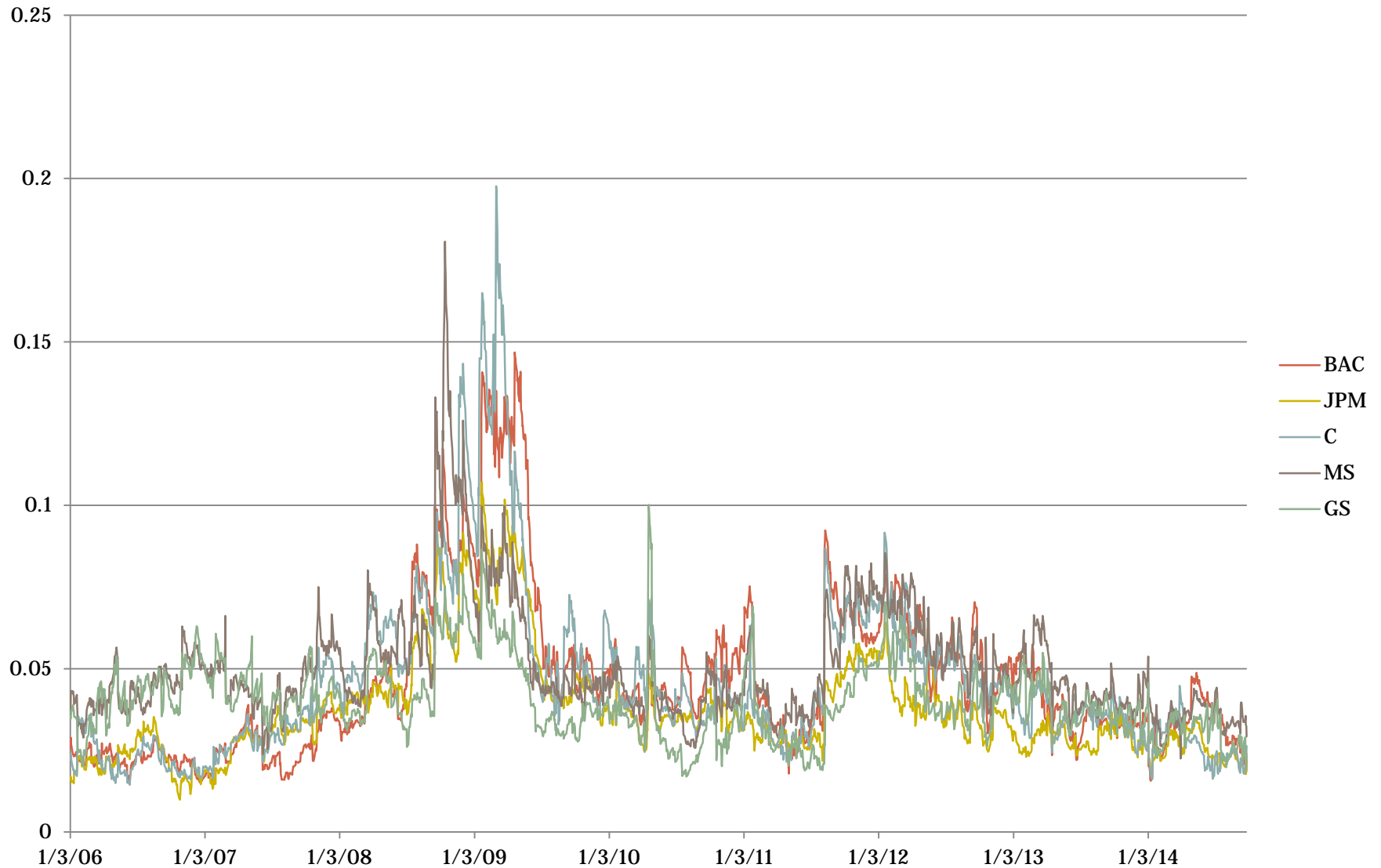
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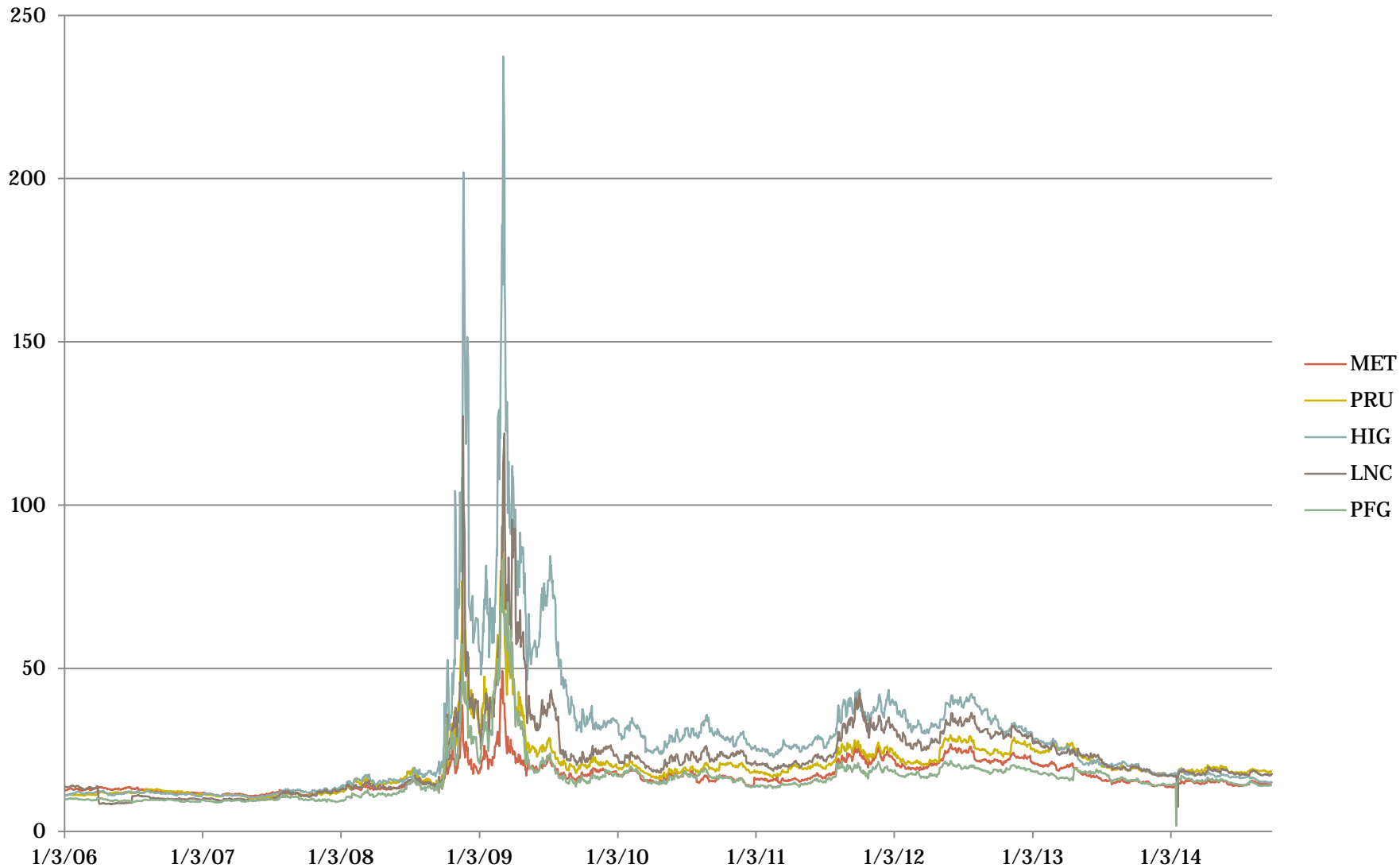
MES: %Loss of market value in case of 2% market correction



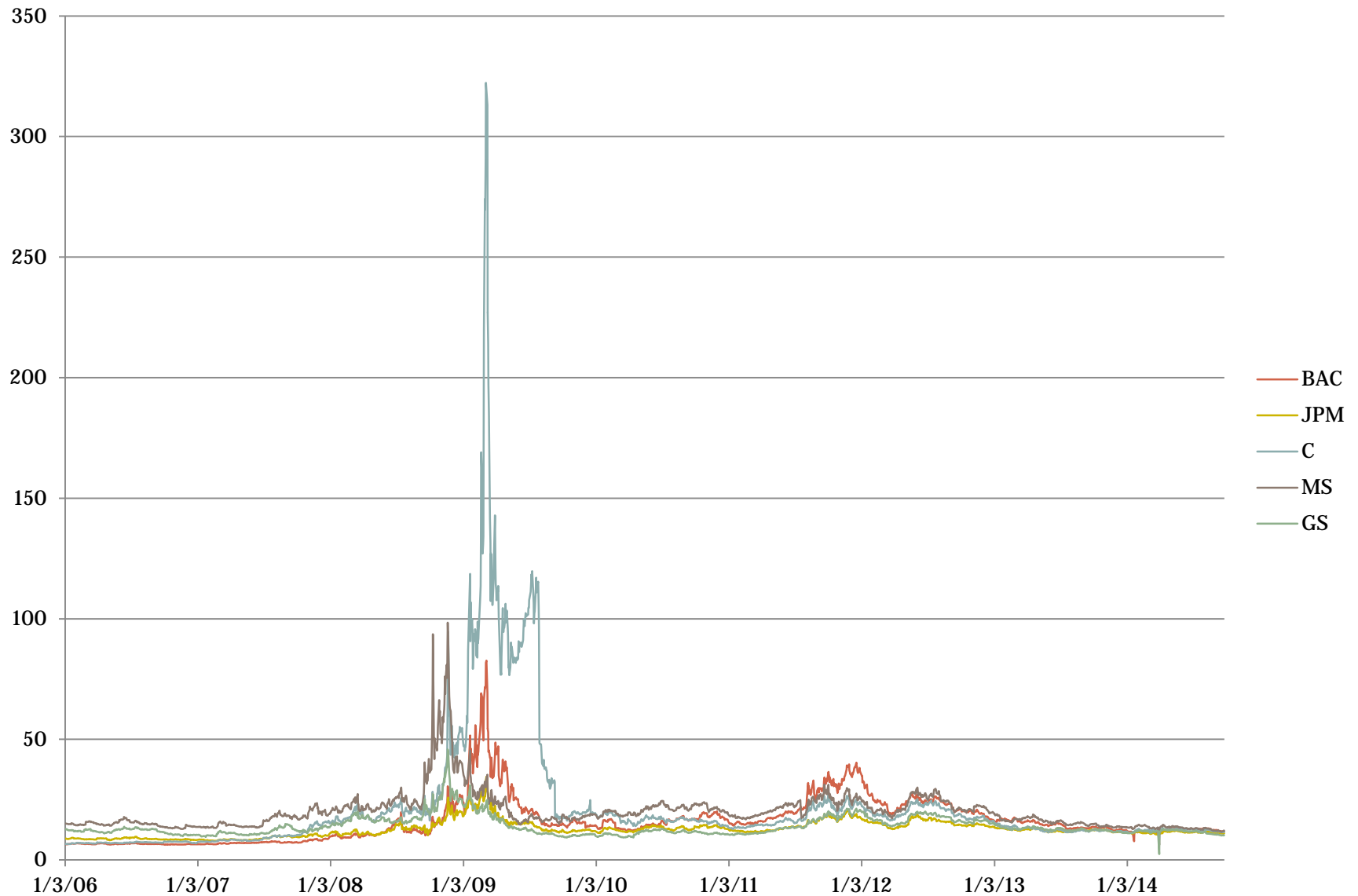
MES: %Loss of market value in case of 2% market correction



LVG: (Book Liabilities + Mkt Equity) / Mkt Equity



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Open questions (for Insurance Firms!)



- Why did market values of insurance firms collapse so much in Fall of 2008?
- Why did some of the firms need TARP?
- Why are downside risk (MES) or beta estimates of insurance firms as high as those of banks and bank holding companies?
- Why were insurance firms owning banks, making guaranteed financial products, selling CDS, etc.?
- Why does capital shortfall of MetLife and Prudential show increase post 2010 when banks are de-leveraging?

Open questions (for Insurance Firms!)



- If insurance firm liabilities are more stable, won't they take advantage of that and keep less equity on balance-sheet a priori?
 - ✦ Recent evidence that insurance firms engaging in capital-reducing and risk-enhancing strategies
- When market value of insurance firms collapse, won't that affect their corporate bond market purchases and potentially also result in fire sales, policy lapses, etc.?
 - ✦ Insurance sector own \$2.5trn of corporate and foreign bonds
- Won't lack of corporate bond market access cause firms to draw down bank lines of credit causing "bank runs"?
 - ✦ Is insurance sector really not connected to the financial plumbing?

Recent evidence – Insurance firms appear to be seeking risks like banks!

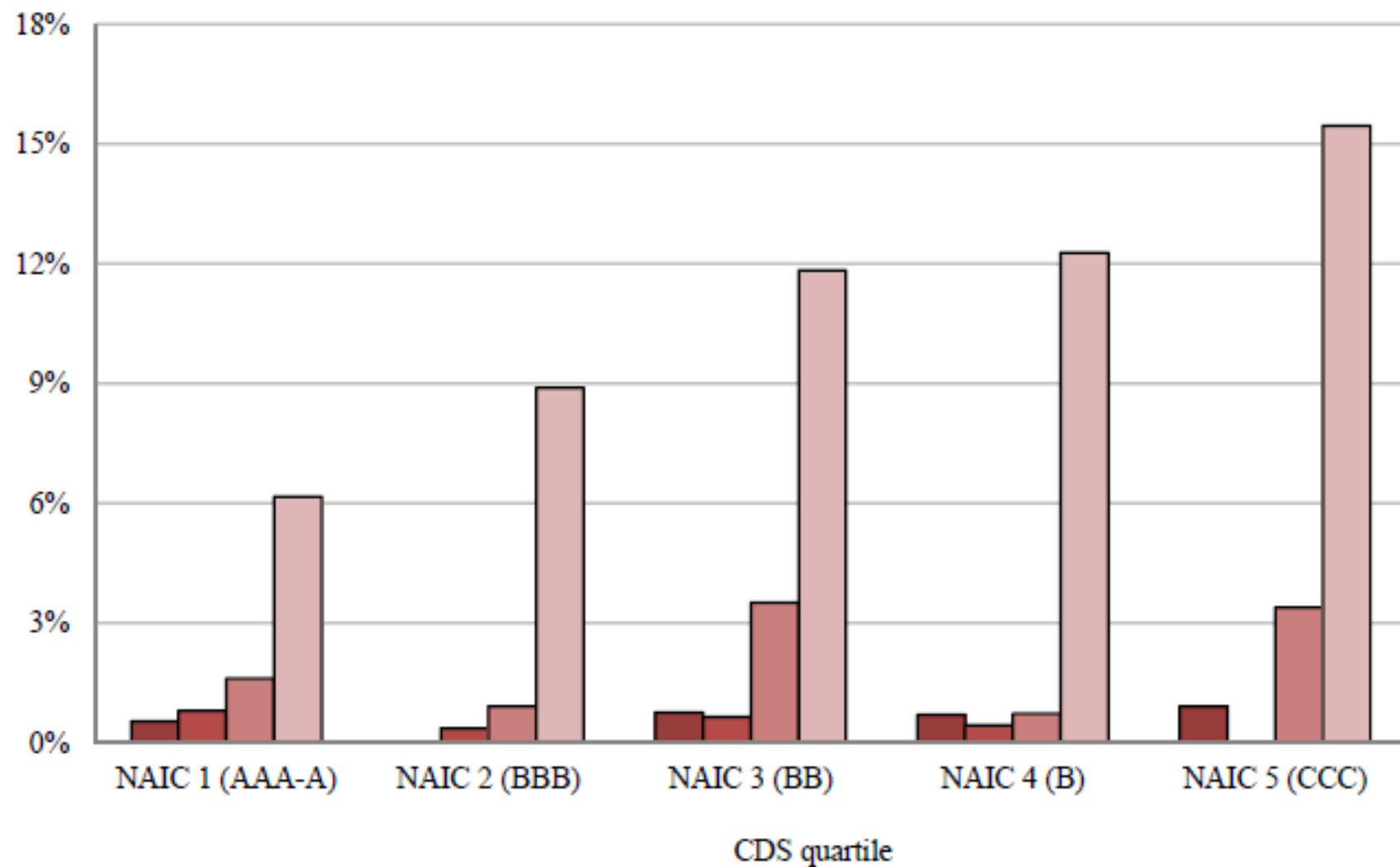


- Becker-Ivashina (HBS Working Paper, 2013):
- Insurance firms “search for yield” in corporate bond holdings within a rating class
 - ✦ Regulatory arbitrage subject to risk (ratings)-based capital requirements
 - ✦ Shows “capital efficiency” or in other words “leverage”-building
 - ✦ Behavior akin to that observed in banks
 - Greater reaching for yield in economic expansions
 - More by insurance firms closer to regulatory capital constraint

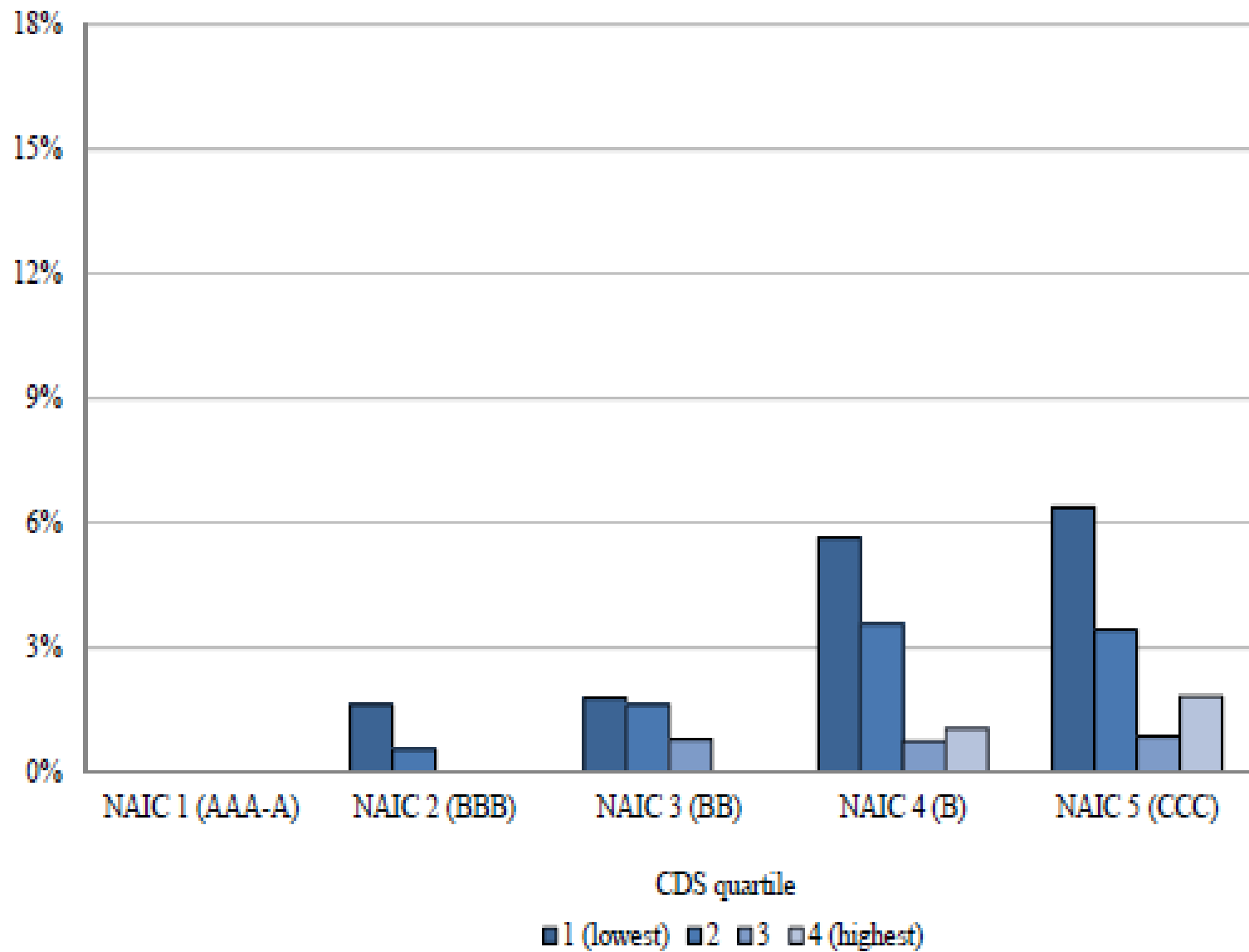
NAIC Quarterly Transition Probability by CDS Quartile

Figure shows probability of downward (Panel A) and upgrade (Panel B) transition between different NAIC ratings sorted by CDS quartiles. For example, probability of NAIC 2 asset in the highest CDS quartile to be downgraded is 9%. However, probability of NAIC 3 asset in the highest CDS quartile to be downgraded is 12%. Downgrade as a change in rating that moves an issuer from one NAIC to any lower NAIC within the quartile.

A. Downgrades



B. Upgrades



Recent evidence – Insurance firms appear to be seeking risks like banks!



- Koijen-Yogo (FRB Working Paper, 2013):
- Insurance firms deploy riskier, weakly-regulated, off-balance-sheet “shadow insurance” or “captive” vehicles (in South Carolina, Vermont or off-shore):
 - ✦ E.g.: MetLife owns affiliated firm that “reinsurances” MetLife!
 - ✦ \$11 bln in 2002 to \$363 bln in 2012
 - ✦ A benefit of three rating notches in AM Best (ignores shadows!!)
 - ✦ Expected losses to state guarantee funds greater by \$15bln
 - ✦ “Capital efficiency” aka “regulatory arbitrage” has allowed the insurance sector to free up reserves and increase its size
 - Akin to bank-sponsored ABCP conduits, first “runs” of 2007?

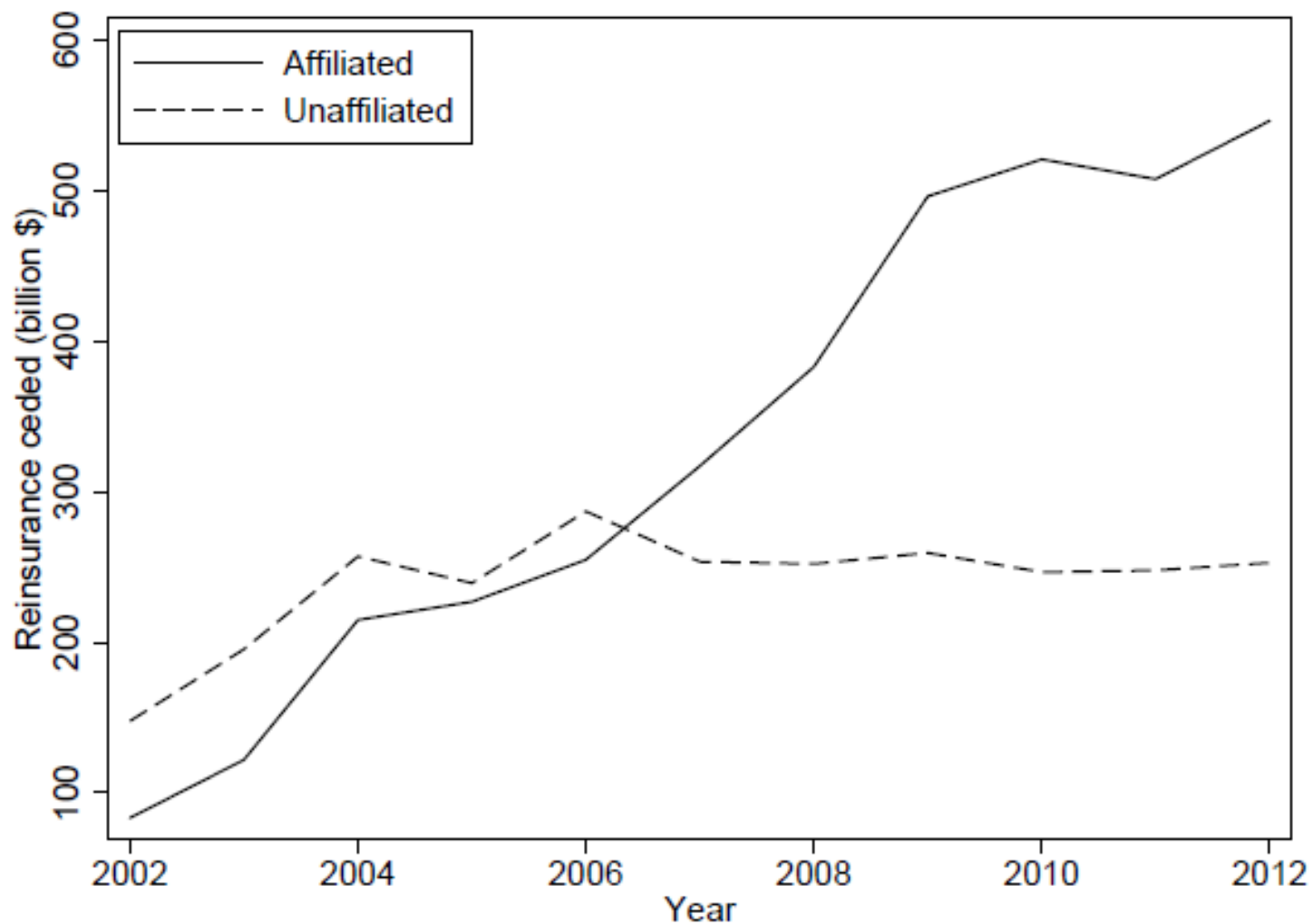


Figure 1: Reinsurance Ceded by U.S. Life Insurers

This figure reports life and annuity reinsurance ceded by U.S. life insurers to affiliated and unaffiliated reinsurers. Reinsurance ceded is the sum of reserve credit taken and modified coinsurance reserve ceded.

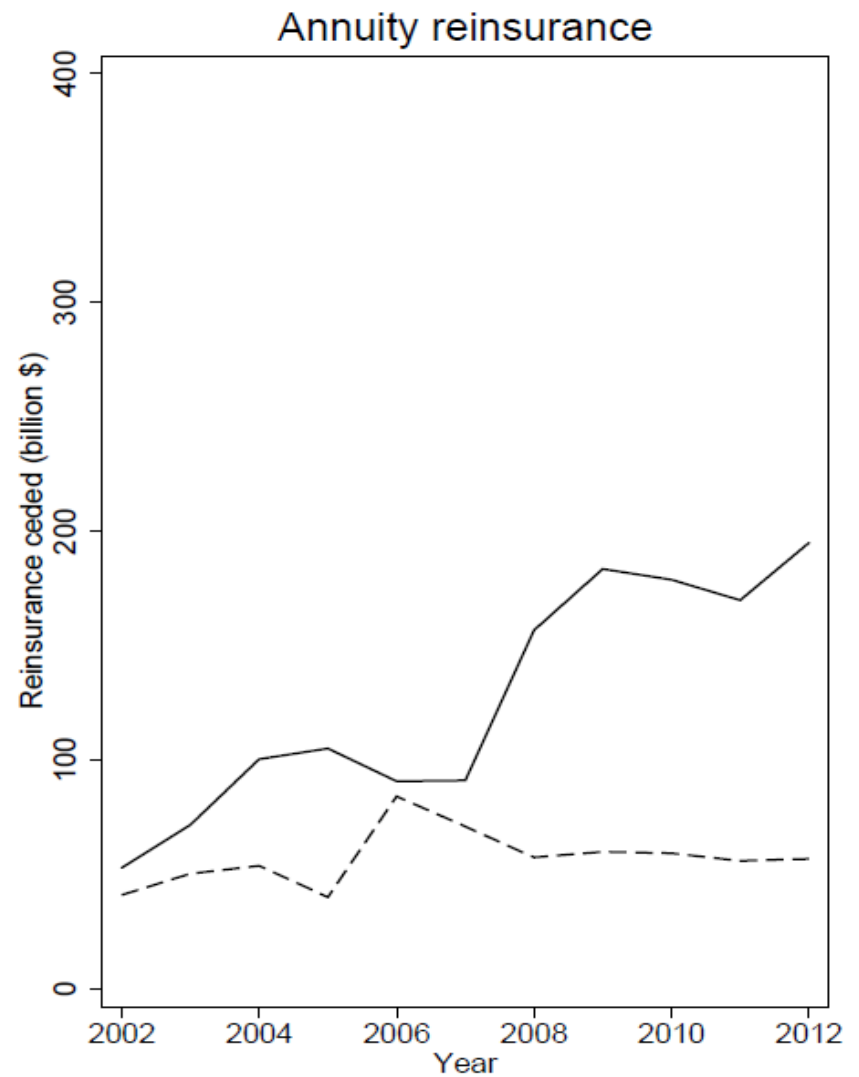
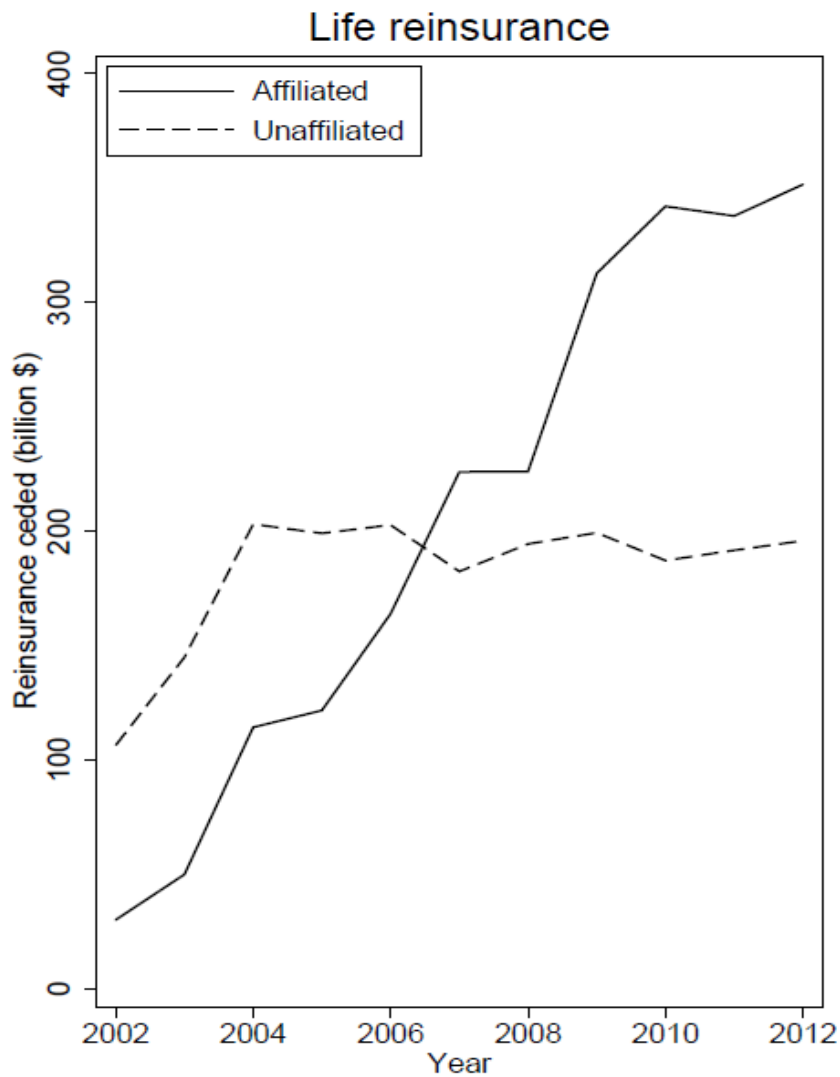


Figure 2: Life versus Annuity Reinsurance Ceded by U.S. Life Insurers

This figure reports reinsurance ceded by U.S. life insurers to affiliated and unaffiliated reinsurers, separately for life and annuity reinsurance. Reinsurance ceded is the sum of reserve credit taken and modified coinsurance reserve ceded.

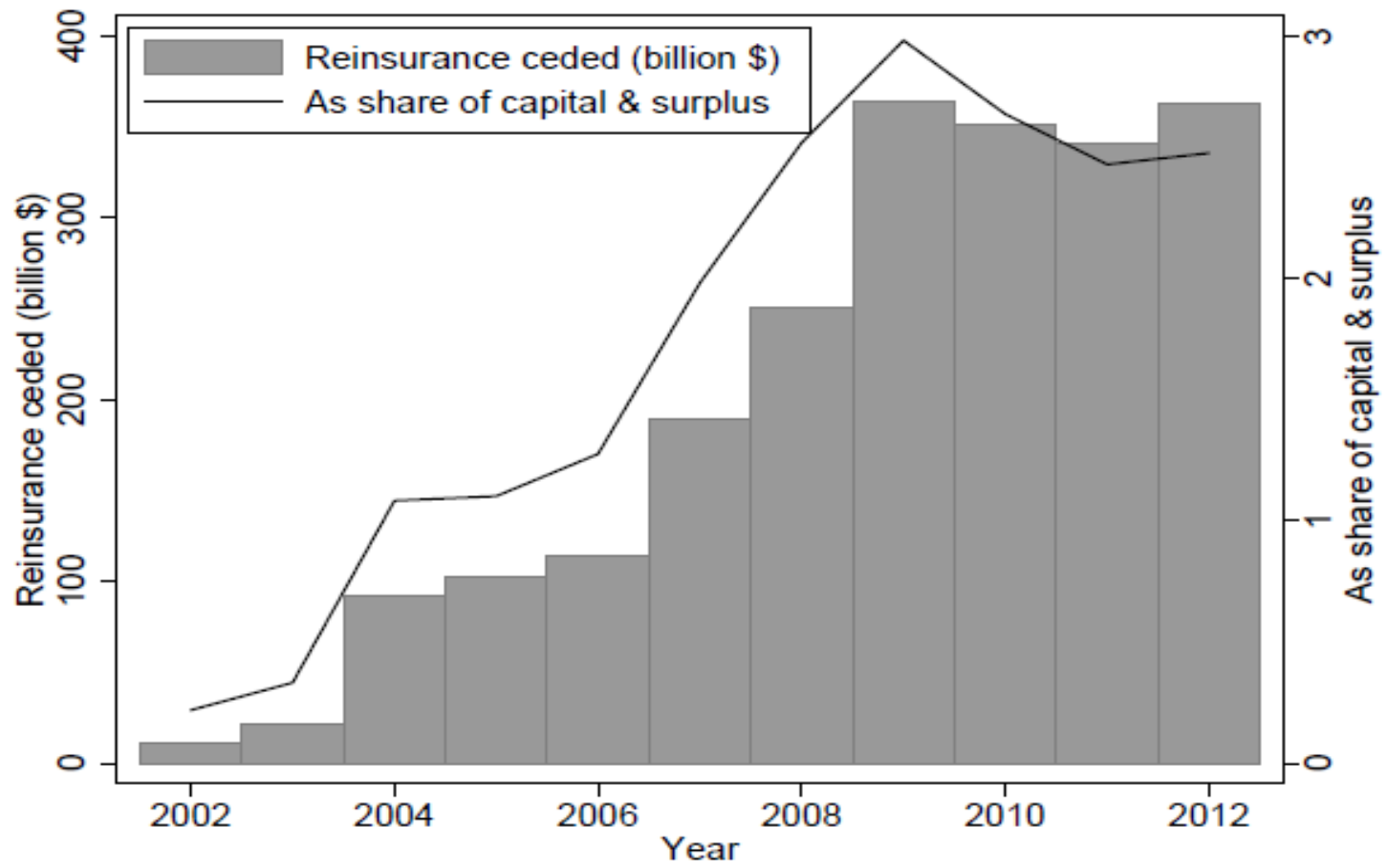


Figure 6: Reinsurance Ceded to Shadow Reinsurers

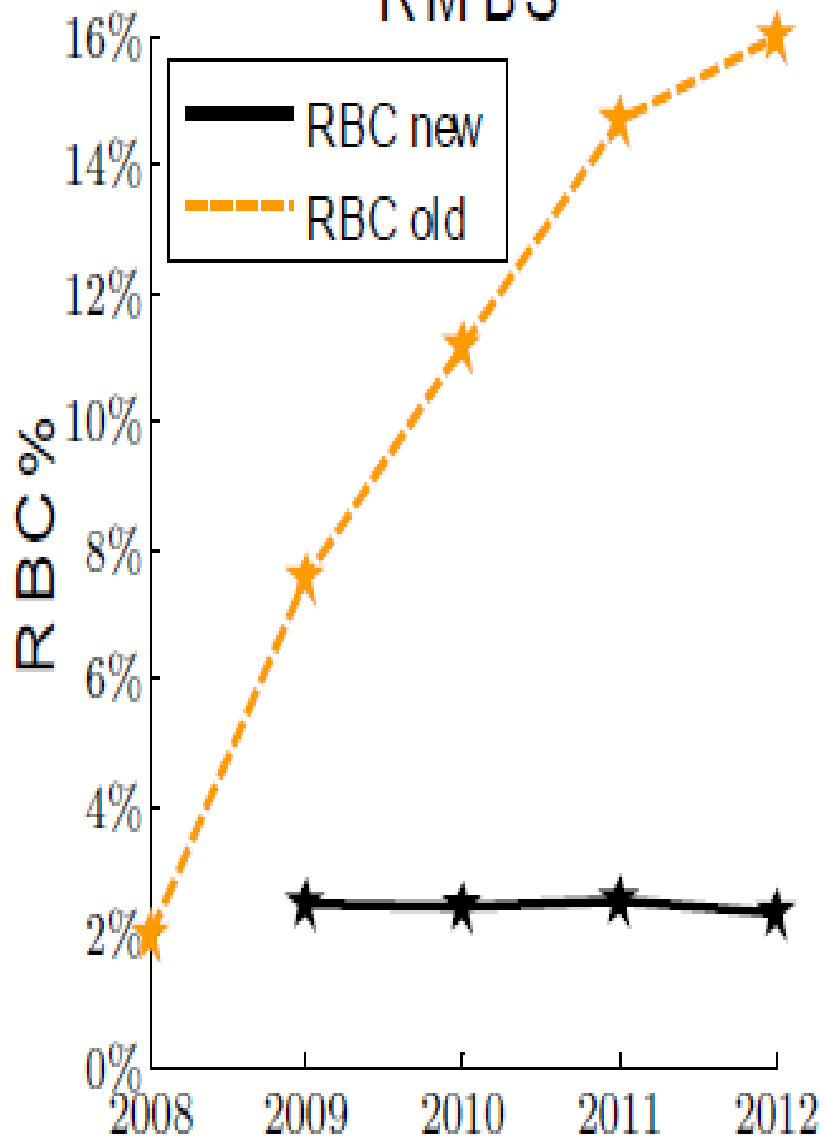
This figure reports life and annuity reinsurance ceded by U.S. life insurers to shadow reinsurers, both in total dollars and as a share of the capital and surplus of the ceding companies. Shadow reinsurers are affiliated and unauthorized reinsurers without an A.M. Best rating. Reinsurance ceded is the sum of reserve credit taken and modified coinsurance reserve ceded.

Recent evidence – Insurance firms appear to be seeking risks like banks!



- Becker-Opp (Berkeley Hass Working Paper, 2014):
- Capital requirements for RMBS holdings reduced dramatically while moving from ratings to prop measures
 - ✦ Approx 20% of asset holdings of insurers in structured products
 - ✦ 2009 reform by the NAIC reducing RMBS capital required by 67%
 - ✦ Capital calculation based on expected losses!
 - What about “unexpected losses”? – Flies in the face of basic principles of prudential capital requirements
 - ✦ Capital calculation based on book value of asset rather than its risk!
 - Asset held at purchase price in normal market has zero capital
 - ✦ A capital relief (for large and perhaps distressed-in-2009 insurers) amounting to over \$15 bln relative to the earlier risk-based system

RMBS



CMBS

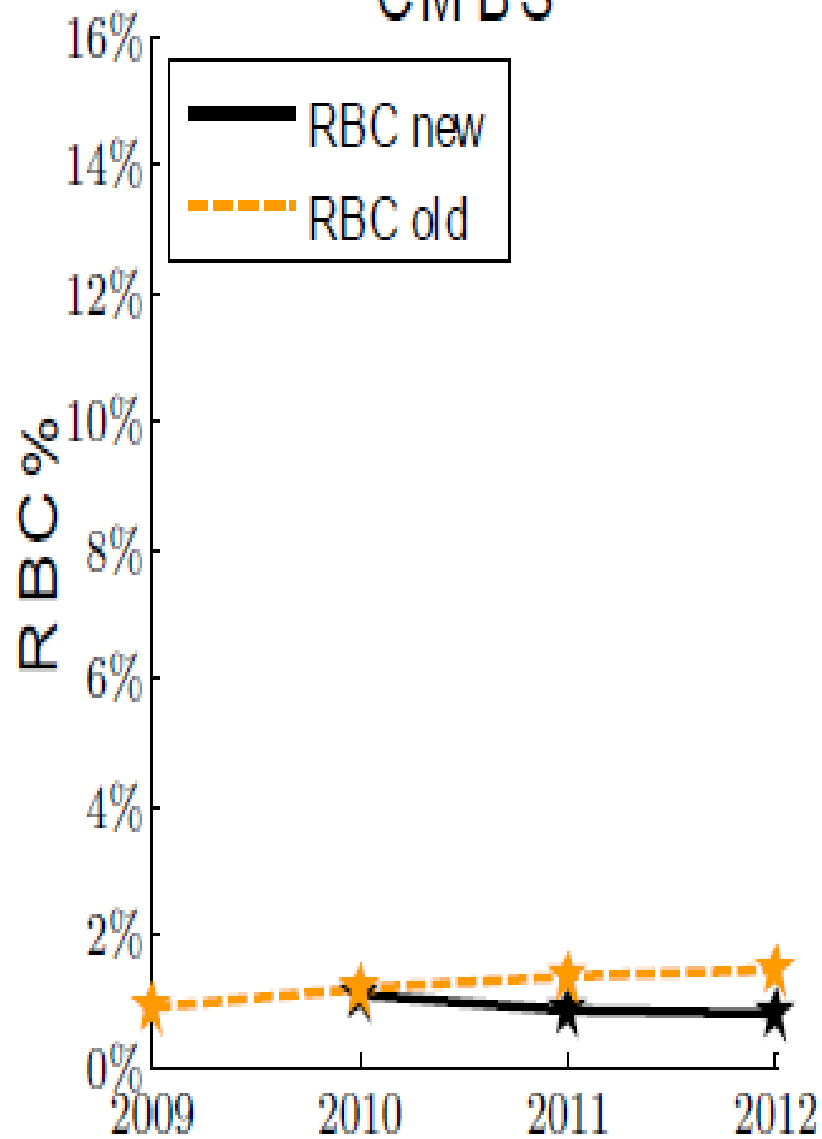
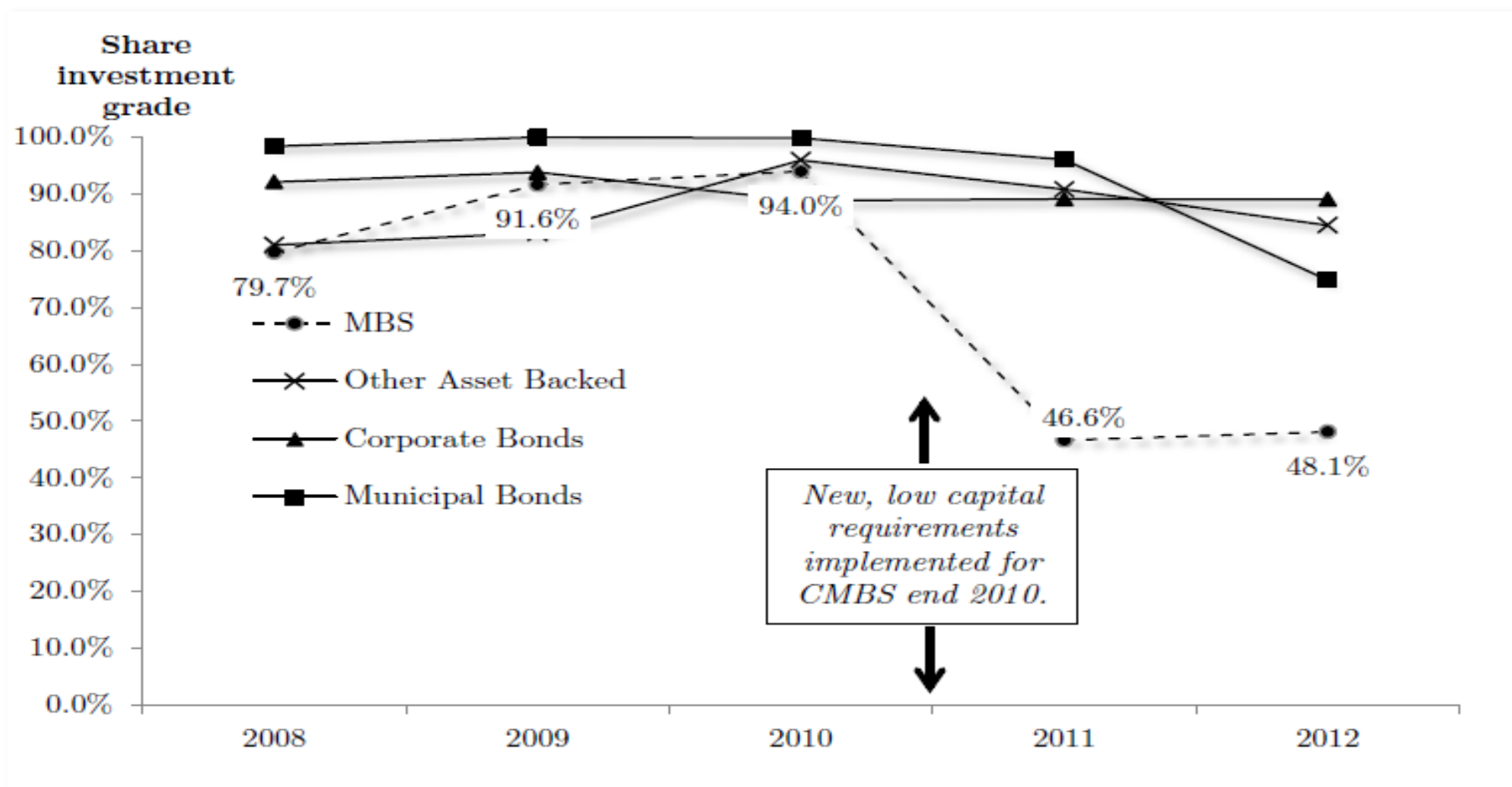


Figure 5 – Risk taking across asset classes as a function of the new system

The figure plots the composition of the insurance industry's purchases of newly issued securities 2008-2012, by asset category. Asset categories are Corporate Bonds, Municipal Bonds, MBS, Other Asset Backed (Federal Government securities are excluded). Only rated securities with a category indicated in NAIC data are included. Each graph represents the fraction of aggregate purchases in a category (valued at par) that are rated investment grade. For expository clarity, exact values are only displayed for MBS. Total purchases of \$980 billion are reflected in the graph.



Conclusion



- The jury is still out on whether insurance firms are systemically risky or not
- Their historical and current behavior does not give academics confidence that they are not SIFI candidates
- The regulatory and risk-taking practices at insurance sector look as problematic as those at pre-crisis banks
- Crisis always happens in institutions and assets we make the mistake of treating as “fail-safe”!

I am not impressed!



“They take one class of securities and change the rules to give insurers capital relief. Let’s just hope they aren’t picking something out that results in inadequate capital.”

I believe large insurance firms are prone to same risk-taking and capital-efficiency games as banks and should be subject to SIFI rules by the FSOC

SELF-REGULATION IS TO REGULATION AS

SELF-IMPORTANCE IS TO IMPORTANCE! 😊