

# **Rethinking the Structure of Prudential Bank Regulation**

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# Overview

- What is wrong with prudential regulation?
- How can those problems be fixed? 5-point, **incentive-robust** plan.
  - Loan risk measurement
  - Securities risk measurement
  - CoCos (Calomiris-Herring).
  - Costs and benefits of effective prudential regulation via capital or liquidity ratios; theory and practice of liquidity regulation.
  - Macro-prudential regulation

# Why Post-Crisis Reforms Often Fail

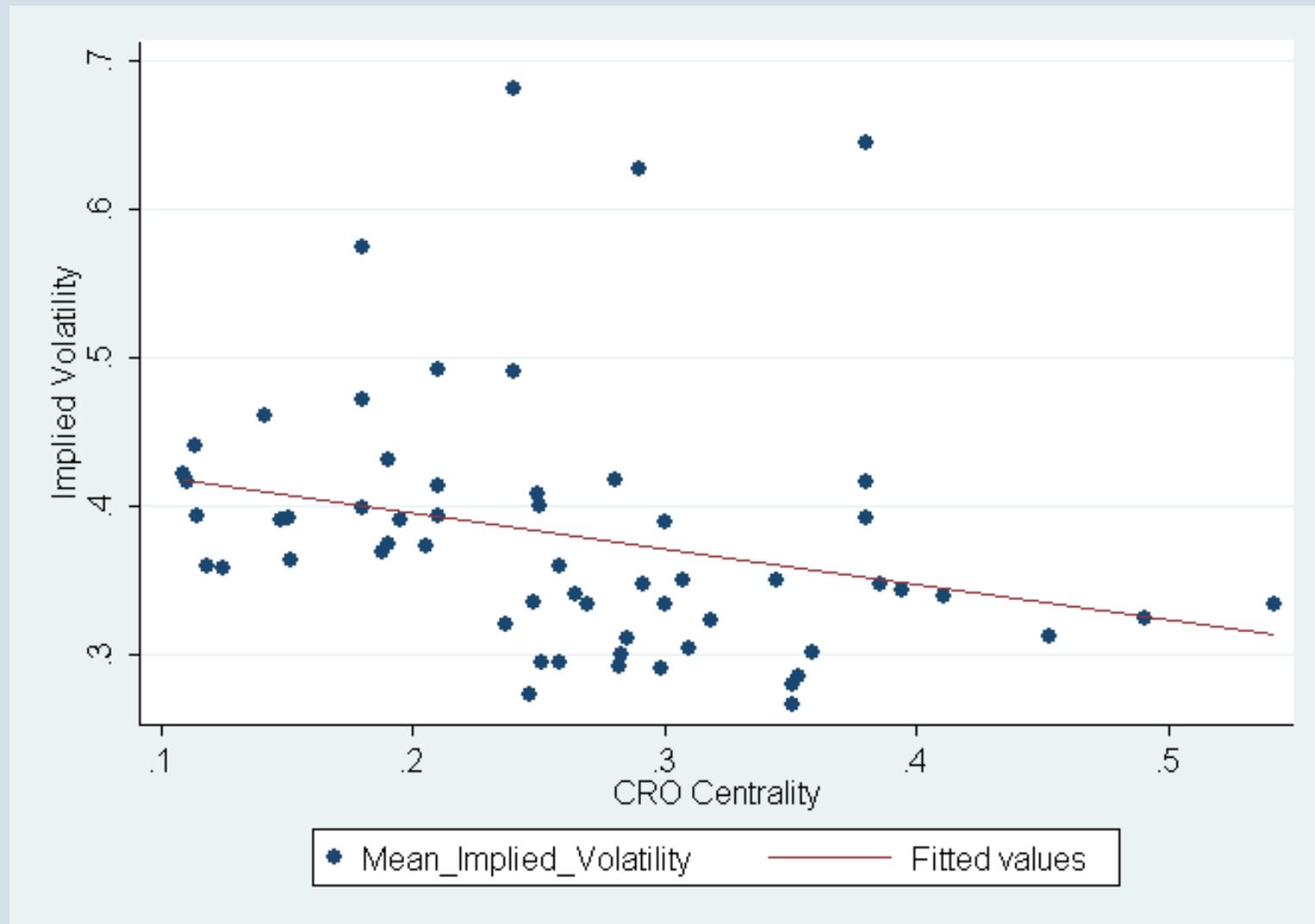
- Reformers construct laundry lists but ignore core incentive problems that gave rise to crisis (e.g., new rules on derivatives, securitization, proprietary trading, etc.).
- Worse, they ride decades-old hobby horses (Glass, Volcker), or just use the crisis to accomplish other objectives (Dodd-Frank imposes new quotas for hiring women and minorities in the financial sector, which was unrelated to the crisis).
- Successful reform requires identifying **fundamental incentive problems** and addressing them in ways that are **incentive-robust**, by which I mean that the design of reforms takes into account and is robust to the incentives of market participants, supervisors and politicians.



# Risk Management Failings

- Cross-sectional evidence shows that there was **not a common crisis experience**.
- Safety net interacted with purposefully bad risk management. (Ellul and Yerramilli 2010; Fahlenbrach, Prilmeier, and Stulz 2011; Aebi, Sabato and Schmid 2010, Agarwal and Ben-David 2012).
- Creating incentives that reward good risk management (through the various reforms I propose) is part of the solution.

# Risk Management: Ellul and Yerramilli (2010)

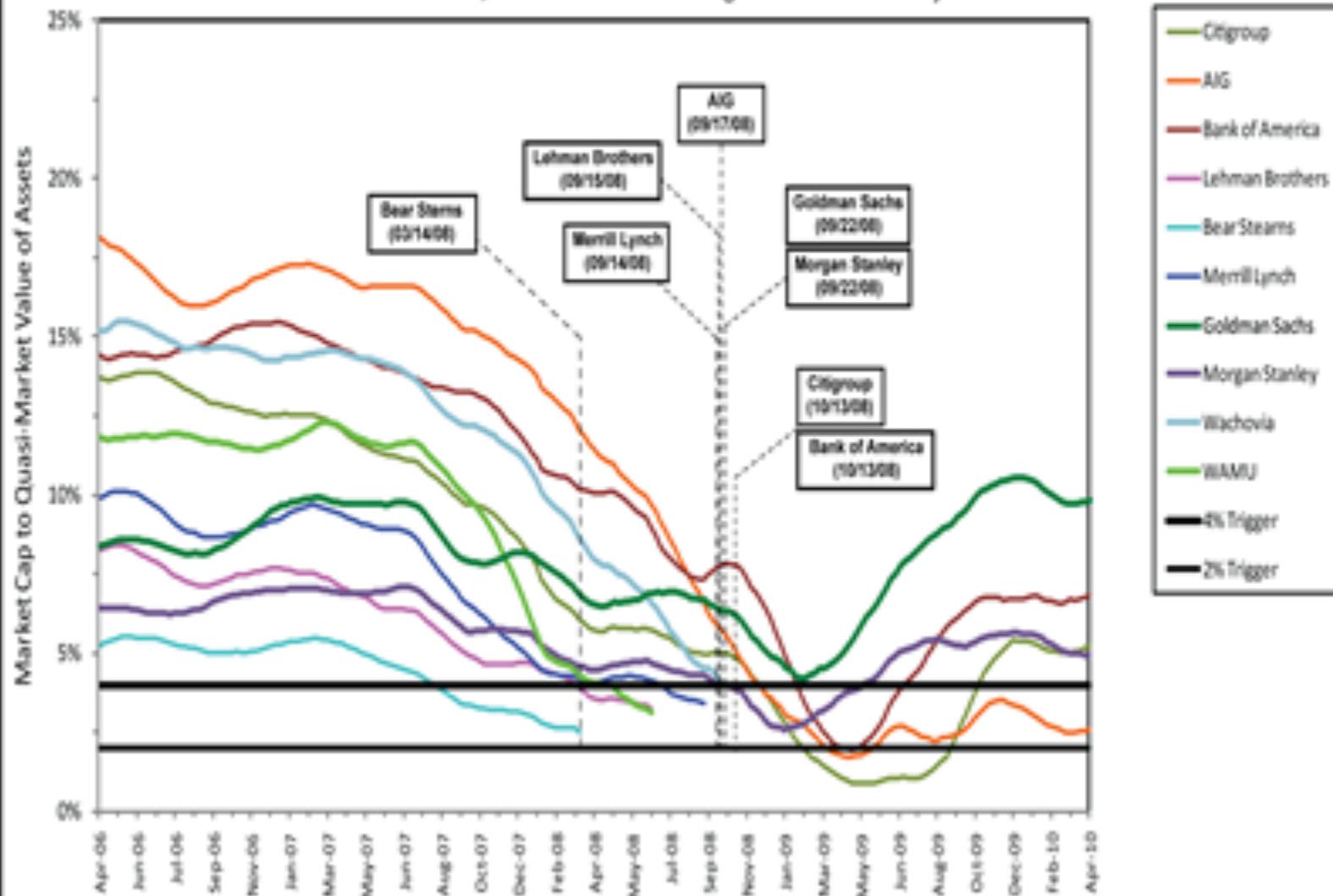


# Ineffective Banking and IB Regulation

- Prudential Regulation's failure to measure risk and maintain capital accordingly:
  - Not leverage arbitrage but **risk mis-measurement**
    - On balance sheet risk measurement failings
    - Off-balance risk measurement failings.
- After March 2008, **too-big-to-fail** problems prevented proper increases of capital in response to losses, **which were feasible**.
- Failure to recognize losses and replace lost capital.

# 90 Day Rolling Market Cap to Quasi Market Value of Assets

U.S. SIFIs that Failed, Were Forced into Mergers or Received Major SCAP Infusions



# Main Prudential Reg. Reform Issues

- Micro prudential reform should focus on **credible measurement of risk**. “Capital, capital, capital” is not enough; many failed banks had more than newly mandated required capital (Citibank vs. Goldman Sachs).
  - Unbelievably, **we still just ask banks themselves and rating agencies to tell us what the risk is!**
- Capital must be observed credibly and **replenished** in a timely way when it is lost.

# Incentive Robustness

- The problems of inadequate measurement of risk ex ante and loss ex post reflect two sets of agents incentives to hide information.
- Bankers will pursue regulatory arbitrage (either due to value-maximization or agency)
- Supervisors have their jobs at stake, not their own money. They will forebear and permit evergreening, particularly because political equilibrium favors that.
- **An incentive-robust reform is one that works in spite of these two sets of agents incentive problems.**

# Five Micro Prudential Discipline Specifics

- 1. Use **loan interest rates** in measuring the risk weights applied to loans for purposes of setting minimum capital requirements on those loans. (Ashcraft, Morgan 2003, Argentine experience in 1990s). Would have made a big difference in subprime crisis.
- 2. Reform the use of credit ratings to either eliminate their use or require NRSROs to predict PD, rather than give letter grades, and **hold them accountable for accuracy** using “sit outs.” (Calomiris 2009)

# Ratings Shopping

- Incentive to inflate ratings from **buy side**, due to regulatory use of ratings.
- Congress: Eliminated automatic relationship between regulation and ratings. Better approach: Failed Boxer amendment, lobbied against by buy side.
- **Proposed Rule:** For each class of rated debt (e.g., credit card securitized debts) BBB is defined as an estimate of a 2% 5-year PD, and A as an estimate of a 1% 5-year PD. If a 5-year moving average of actual PD for the rated BBB instruments in this class exceeds 4%, then the NRSRO will have a six-month “sit out” in rating that class of debts. (2% ceiling for A-rated)

# CoCos (Calomiris and Herring 2011)

- 3. Establish a **minimum uninsured CoCo requirement** for large banks (a specially designed class of contingent capital), which improves risk management and capital raising incentives. (Calomiris, Herring 2011 based on Flannery)
- If designed properly (with sufficient conversion dilution risk), CoCos would incentivize **timely recapitalization** of bank to avoid dilutive conversion of CoCos.
- **Key point:** A combination of common equity and CoCo requirement can achieve more than a common equity requirement alone, and at a lower social cost.

# Contingent Capital Motives

- Contingent capital can be designed to accomplish several objectives, but these objectives conflict in their implications for CoCo design.
- CoCos cannot be all things to all people; we must choose what we want them to accomplish.
- If you begin with the list of important regulatory challenges listed on the prior slide, that implies the desirability of a particular

# Possible CoCo Motives Conflict

- a. Signalling (debt must be risky).
- b. Loss absorption/bail in (triggered near insolvency point).
- c. Incentivizing prompt replacement of losses via voluntary new issues of equity to avoid triggering dilutive conversion of large amounts of CoCos.
  - Early trigger not a bail in, debt not risky so little signalling, trigger is out of equilibrium event so loss absorption minimal.

# Prompt Issuance Objective

- Set trigger high (issuance is not occurring near failure point)
- Conversion should be dilutive (to encourage alternative of voluntary issuance)
- Make amount of CoCos large (to encourage alternative of voluntary issuance)
- Timely (costly) replacement of lost capital will not only protect against insolvency ex post, it will incentivize good risk management ex ante.

# Details of Our Proposal

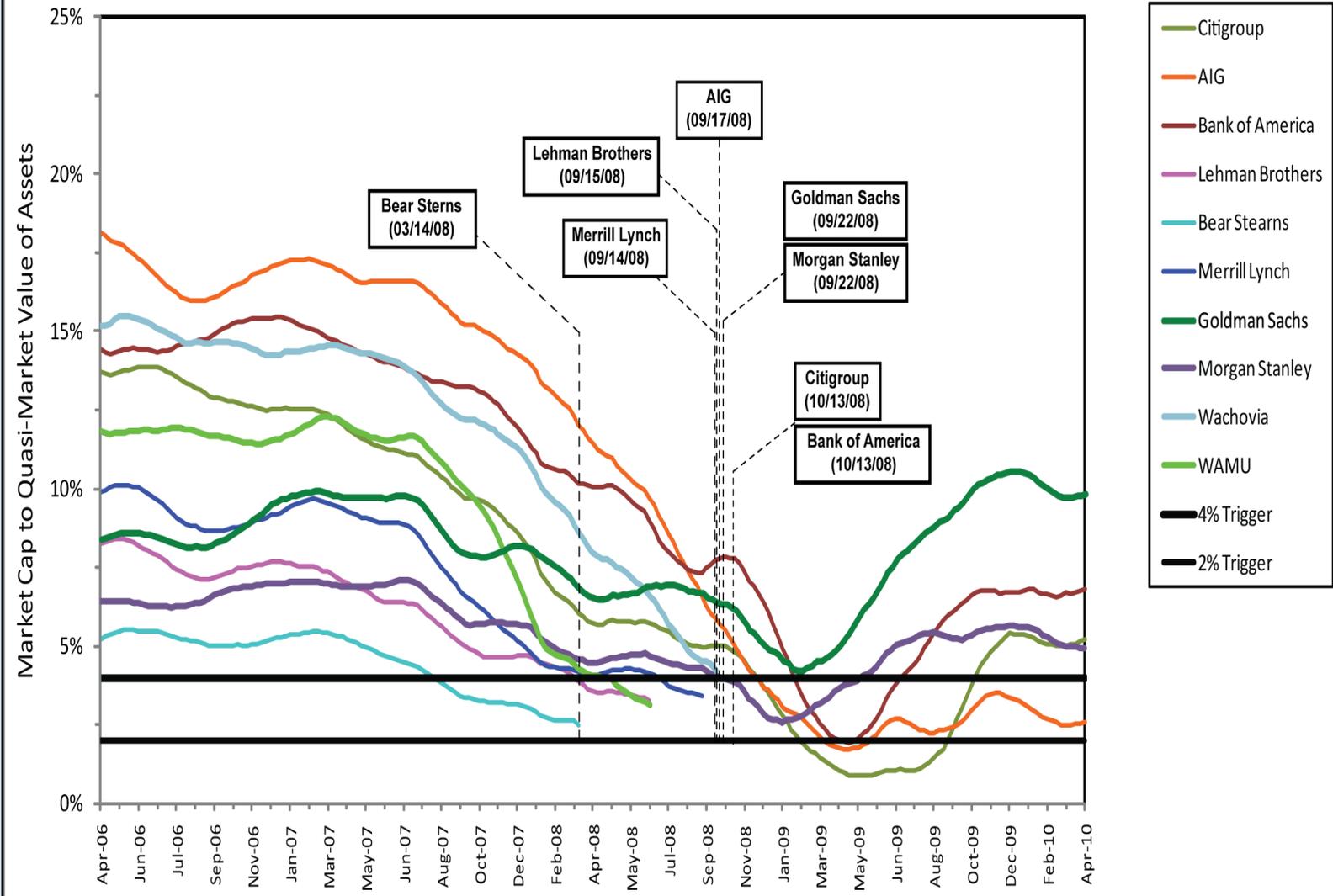
Primary Goal	Prompt Recapitalization
Min Amt of CoCos	10 percent of risk-weighted assets
Trigger	QMVER of 9 percent, using 90-day MA
Conversion ratio	5 percent dilutive of stockholders
Conversion amt	All CoCos converted on hitting trigger
Holder	Qualified institutions, no shorts
PCA trigger	If 9 percent trigger is breached twice
Time to replace	If converted, within one year

# Would This Have Prevented Crisis?

- Crisis did not occur overnight; losses accumulated over long time and were visible in declining market values of bank equity.
- Lots of moments of calm in which capital could have been raised (fall-winter 2007, April-August 2008).
- Equity market was wide open to banks (\$450 billion was raised prior to September 2008).
- Institutions limited offering because of dilution (my breakfast with senior manager).

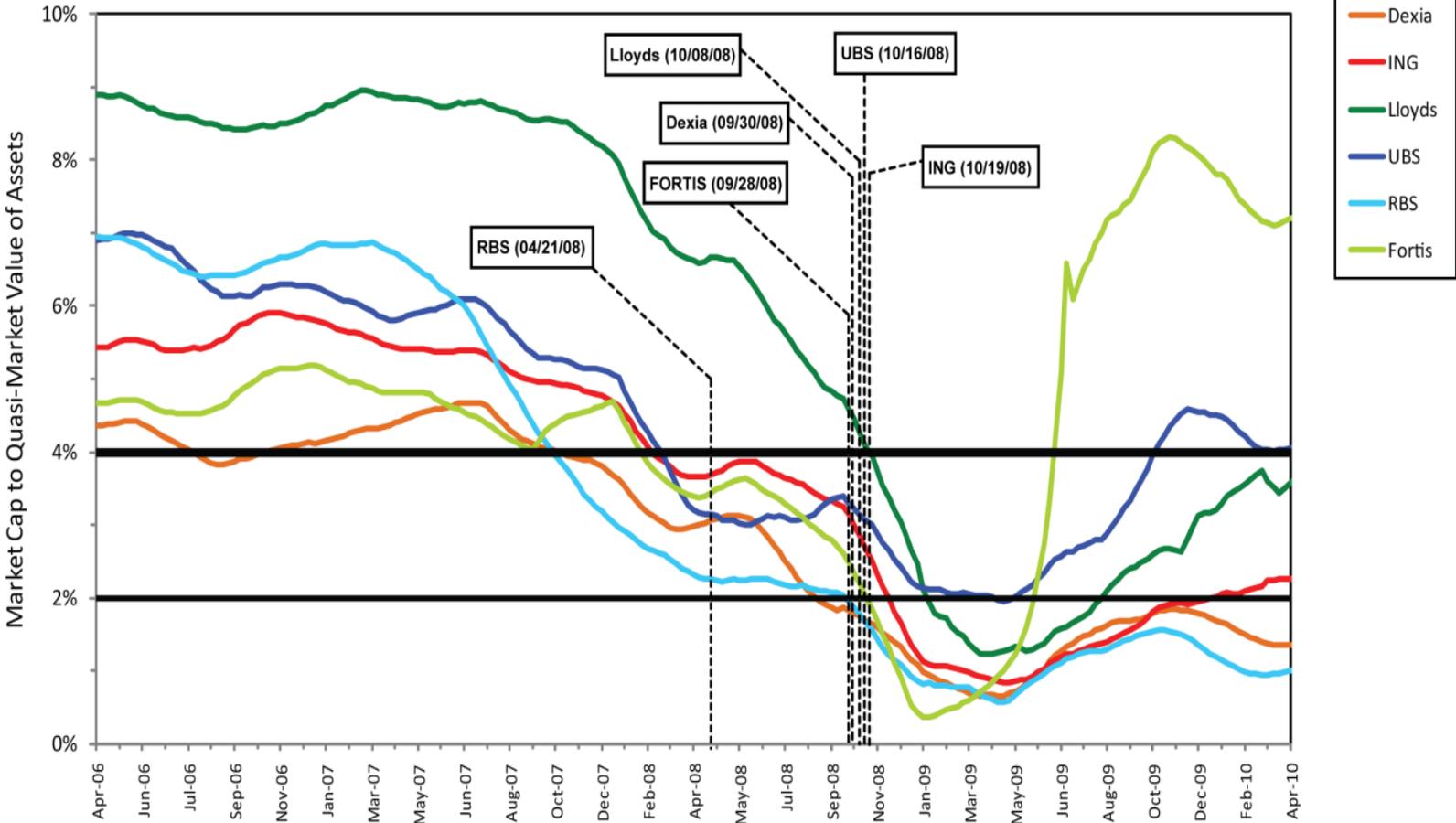
# 90 Day Rolling Market Cap to Quasi Market Value of Assets

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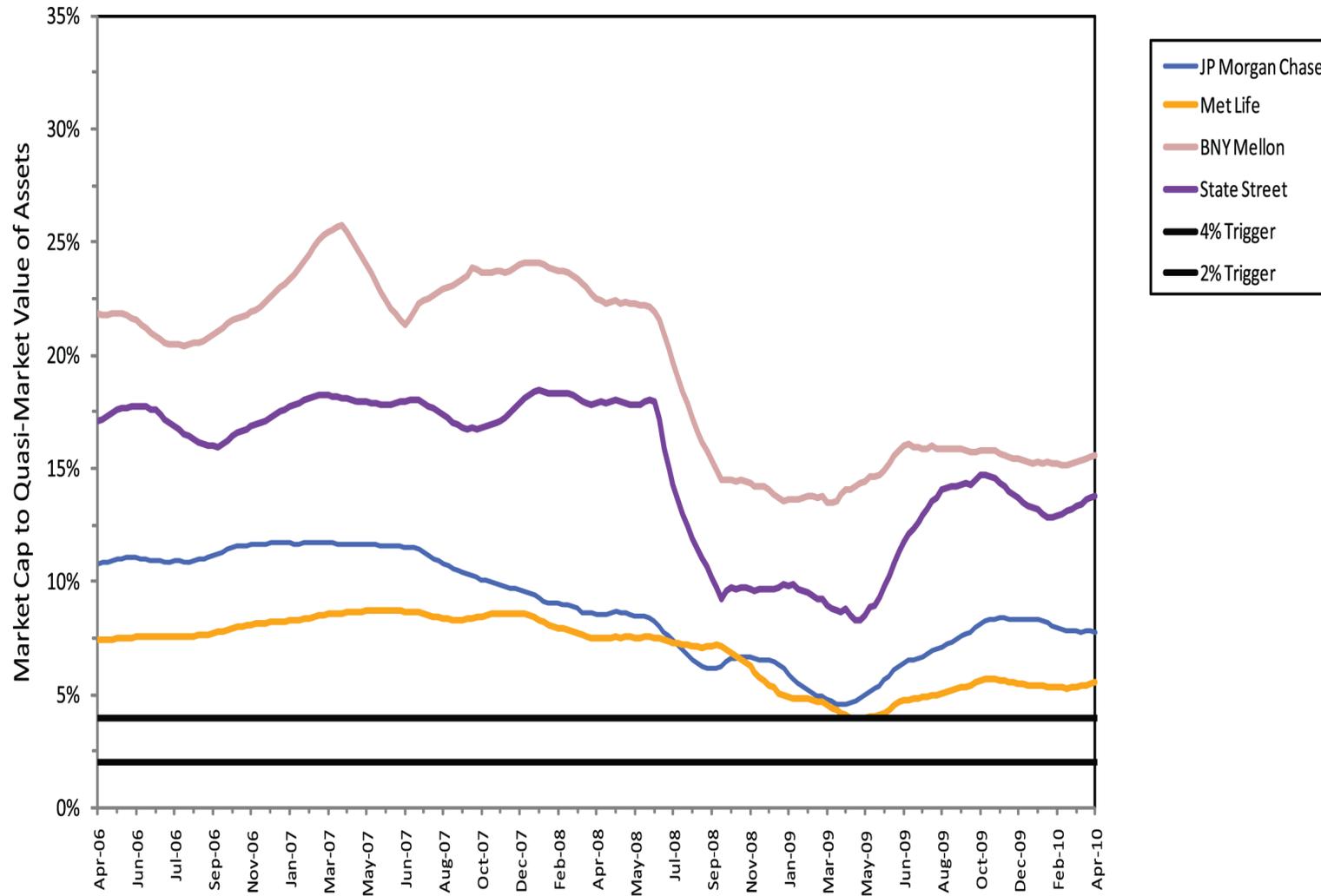
# 90 Day Rolling Market Cap to Quasi-Market Value of Assets

For select European financial institutions



# 90 Day Rolling Market Cap to Quasi-Market Value of Assets

For large American financial institutions that did not receive major subsidies



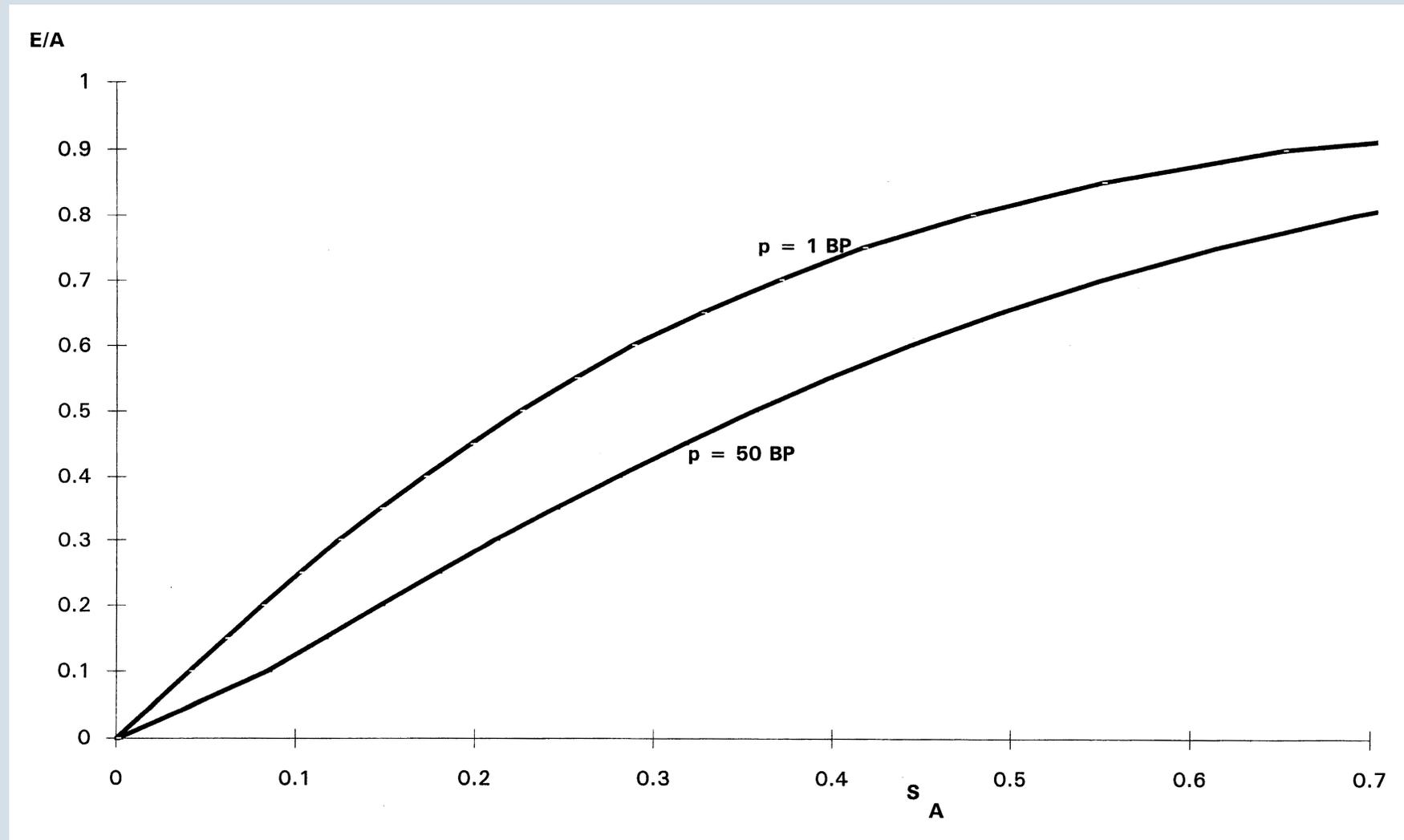
# Why Not Just More Equity?

- Equity alone is costlier than equity and CoCos:
  - Adverse selection costs (lots of room for signalling costs even with regulation)
  - Agency costs
  - Taxes
  - Huge literature provides evidence of these costs (bank capital crunches associated with equity scarcity; Aiyar, Calomiris and Wieladek 2012)
- Pure equity is less effective
  - Book equity losses are not recognized timely
  - Less incentive timely replacement of lost capital
  - Less incentive for risk management

# Liquidity Requirements

- **Basel III points to two new liquidity ratios to deal with systemic liquidity risk. But three problems:**
  - Systemic liquidity risk resulted from counterparty (solvency) risk. That was, and is, the source of all known banking crises. The focus should be on credible prudential regulation.
  - Banks should create liquidity; it is not desirable to eliminate it from the system!
  - We have a lender of last resort, and so long as banks are regulated problem, to limit moral hazard, we should use it!
- **4. Simple 20% of risk weighted assets cash reserve requirement.**

# Two Ways to Skin the Cat of Target Default Risk of Banks



# Liquidity Requirement? Theory

- Why restore liquidity requirements' importance?
  - **Observability of cash and its risklessness incentivizes good risk management, especially after unrecognized losses (Calomiris-Heider-Hoerova 2011)**
  - **Lack of substitutability of debt capacity for cash during times of need** due to financing frictions associated with asymmetric information. **This is especially true of banks (ABCP, repos, Libor)!**
  - **Reduce dependence on LOLR** (self-insure against liquidity risk).

**Table 2: NY Banks' Loans / Capital, Risk, Equity, Dividends**

	Loans / (R+A)	Risk	Equity / Ass.	p	Div
1923	2.2	1.9	0.20	0.0	
1929	3.3	17.5	0.33	33.5	\$392m
1933	1.0	6.1	0.15	41.7	
1936	0.6	4.3	0.17	1.3	
1940	0.3	2.0	0.10	2.1	\$162m

Source Calomiris and Wilson (2004).

# Proper Design of Requirements

- Remunerative (no reason for a new tax).
- No complex Basel formulas or politicized substitutes for cash (like covered bonds).
- Relaxed by regulator during crisis.
- Imposed on banks, and perhaps on non-bank intermediaries for whom liquidity risk is high (safe harbor for non-banks that don't rely heavily on repos or CP).

# Macro Prudential Regulation

- Act preemptively to deflate credit-driven asset price bubbles, and during recessions relax standards to mitigate credit crunches. **At no time** imprudent.
- 5. Vary capital, provisioning, not liquidity requirements, using **simple dual threshold model of credit growth and asset price growth** (Borio and Drehman 2008), based on an “enforce or explain” mandate => accountability.
- Preserves accountability of monetary policy by keeping things separate and rules-based.

# Why Simple Macro-Pru Rules?

- Correlations, concentrations, etc., are a fool's game; not reliably identifiable based on past patterns or current measures.
- Accountability and predictability of monetary policy and macro prudential policies are crucial.
- Following separate Taylor Rule (or nominal GDP targeting, or something else) for monetary policy, and a Borio-Drehman rule for macro-pru gives predictability and accountability for both.

# Macro Prudential Case Study: Colombia 2008

- Financial system loan growth rose from 10% in Dec 2005 to 27% by Dec 2006. Core CPI rose from 3.5% in Apr 2006 to 4.8% in Apr 2007). Real GDP growth in 2007 8%. Curr acc deficit rose from 1.8% GDP in second half of 2006 to 3.6% GDP in first half of 2007.
- Monetary authority reacted directly to credit growth in real time: Interest rates were increased 400 bps from April 2006 to July 2008. But central bank saw too small a market response to this, so it
  - increased reserve requirements for banks and
  - convinced superintendency to raise provisioning for credit,
  - imposed measures to raise costs of borrowing short-term from abroad (deposit requirement reactivated), and
  - Limited currency mismatches of banks and other FX exposure in system, and gross currency positions (limiting counterparty risks).
- Credit growth fell to 13%; risk-weighted capital ratio for banks 13.9% first half 2008. 4.9% above first half of 2007

# Incentive Scorecard of Five Proposed Prudential Reforms

## Proposal

## Market Incentives?

## Political /S&R Incentives?

***Require NRSROs to use numerical forecasts of PD, with “sit out” penalties for egregious errors.***

Rating agencies will have strong incentives to make estimates accurate, and will resist buy-side pressures to inflate ratings.

Avoids micro-managing NRSROs; ensures transparency, accountability of enforcement.

***Use loan interest rates to help set capital ratios.***

Loan pricing reflects risk, and will continue to do so.

Standards are transparent and rule-based, and therefore, credible.

***Require CoCos with market triggers.***

Banks preemptively raise equity.

Automatically convert s before intervention, so will not be bailed out

***Remunerative 20% liquid reserve requirement.***

Improves risk management.

Clearly observable => enforced.

***Macro prudential changes based on dual threshold.***

Anticipation improves incentives to manage risk.

Easy to enforce => credibly enforced.

# Importance of Simplicity

- Avoiding discretion requires constructing simple rules that do not depend on regulators' or supervisors' discretion and can be observed publicly.
- Automatically enforced, transparent rules are incentive robust for regulators.