Incentive-Robust Banking Reform: Emerging Market Leadership

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EM Banking Problems

- Fiscal costs of banking crises in EMs amounted to $1 trillion in 1980s and 1990s, equal to foreign assistance transfers from 1950-2001.
- Excluding transition countries, prior to 2007, 99 major banking crises worldwide with negative NW/GDP averaging 16%, and foregone GDP averaging 20%.
- Many collapses also involved twin crises.
- This UNPRECEDENTED frequency and severity is not just an EMs problem!

Central Questions about Bank Risk and Prudential Regulation

- Why are crises so common and so severe?
- Crises are not inherent in the function and structure of banks, but rather reflect government protection of banks and subsidization of banks' risk taking.
- How can we limit the protection of banks?
- Given constraints that make it hard to limit protection ex post, what kinds of prudential arrangements work to limit the risk of banking crises?

Two Channels

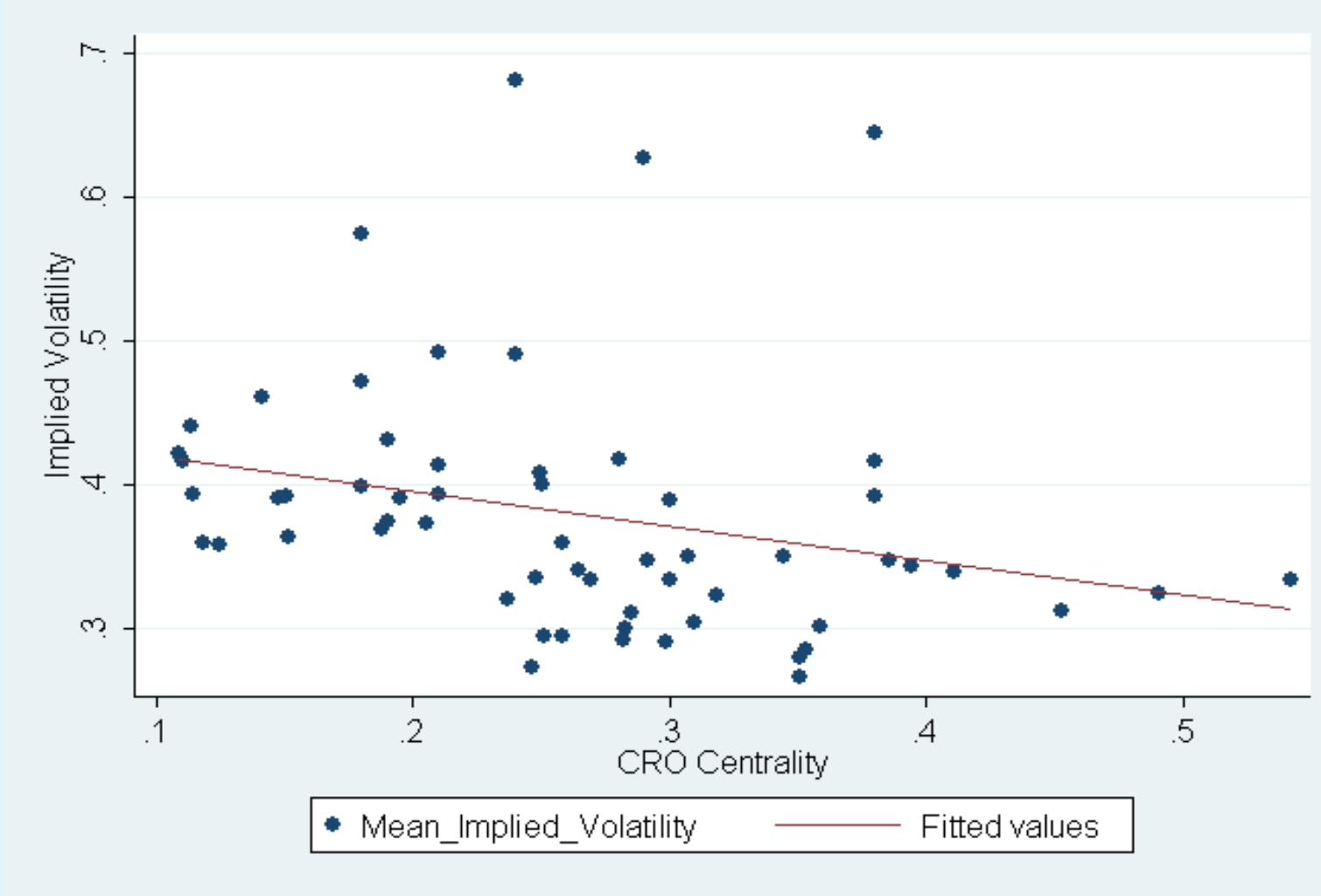
- Safety net removes market discipline that used to operate, both as a check on (a) conscious risk taking, and (b) on the quality of bank management making risk taking decisions. Both effects are important.
- Effects vary over the cycle.
  - Conscious risk taking increases in wake of losses (resurrection bets on unlikely outcomes with high risk premia, especially in currency markets, which deepens extent of twin crises through feedback effects).
  - Management quality problem can be most hazardous during booms, and becomes visible during busts (WWI grain price bets).

State Deposit Insurance, 1920s

	3 Insured	15 Controls
Asset Size	$320	$622
Equity / Assets	0.11	0.13
Growth during Boom	185%	128%
Loans / Assets	0.76	0.70
Negative NW of fails / NW of Survivors	3.5	0.5

Source: Calomiris JEH 1990.

Risk Management in US Banks, 2006: Ellul and Yerramilli (2010)



Reforms Often Fail

- Politics tends to produce strong incentives for protection of banks and forbearance, more in some countries than in others (Demirguc-Kunt, Kane and Laeven 2007). Politics often thwarts reform.
- More rules and more supervisory discretion don't work. They may sound good, but they fail.
- Book capital requirements invite discretionary forbearance, as do reliance on supervisory judgments when measuring risk and capital.
- Barth-Caprio-Levine find that regulatory and supervisory practices, other than practices that introduce market discipline, **make no difference for banking sector growth or stability. But market discipline works.**

Barth et al Findings

"Across the different statistical approaches, we find that empowering direct official supervision of banks and strengthening capital standards do not boost bank development, improve bank efficiency, reduce corruption in lending, or lower banking system fragility. Indeed, the evidence suggests that fortifying official supervisory oversight and disciplinary powers actually impedes the efficient operation of banks, increases corruption in lending, and therefore hurts the effectiveness of capital allocation without any corresponding improvement in bank stability.

In contrast to these findings...bank supervisory and regulatory policies that facilitate private sector monitoring of banks improve bank operations."

Three Goals of Prudential Regulation

- Measure risk accurately.
- Budget capital accordingly.
- Replace lost capital in a timely fashion.

- If credible, these would provide ample protection against failure, and would incentivize good risk management.

Two Key Incentive Problems

- Regulatory arbitrage
- Supervisory “forebearance”

- Solution: Use objective measures of risk, with consequences for maintaining capital and liquid assets and other objective phenomena, with neither measures nor consequences subject to manipulation or discretion.

Specific Ideas

- Limited safety net (but only within realistic limits).
- Free entry (to limit cronyism, spur competition).
- Privatization of SOBs (same).
- Use of loan interest rate spreads to set minimum capital requirement (objective measure of risk).
- Reform credit ratings: numbers with penalties.
- Cash reserve requirements (with compensation), which limits both liquidity risk and credit risk.
- Sub debt alongside equity (best embodied in “CoCos,” which are less costly and more effective than equity capital alone).
- Living wills, with haircuts upon intervention.
- Macroprudential variation over cycle in capital and provisioning requirements.

Latin Models of Success

- Free foreign entry (Mexico post-1996, etc.)
- After 1982-83 crisis, Chile limits protection. (Similar in Argentina, Colombia, etc.)
- Use of loan spreads, VAR in Argentina to measure risk and budget capital.
- Argentina's experiment with minimum sub debt.
- Argentina's experiment with credit ratings (an instructive failure).
- Successful macroprudential regulation in Colombia (and Peru).
- Focus on cash requirements, not just capital, is common in LA (e.g., Brazil's case).

Evidence on Foreign Bank Entry

- Greater supply of credit (Goldberg, Dages, Kinney 2000), although based more on “hard” information than “soft” information (Mian 2003)
- Less local presence => greater volatility of credit (Herrero and Peria 2005)
- Giannetti and Ongena (2005) find that foreign presence reduces connected lending problems, improves access of funds to efficient non-connected borrowers, and improves efficiency of capital allocation, although effect seems confined to medium and large firms
- Similarly, Bonin and Imai (2005) show that sale of Korean banks to foreign lenders had large negative effects on stock returns of related borrowers.

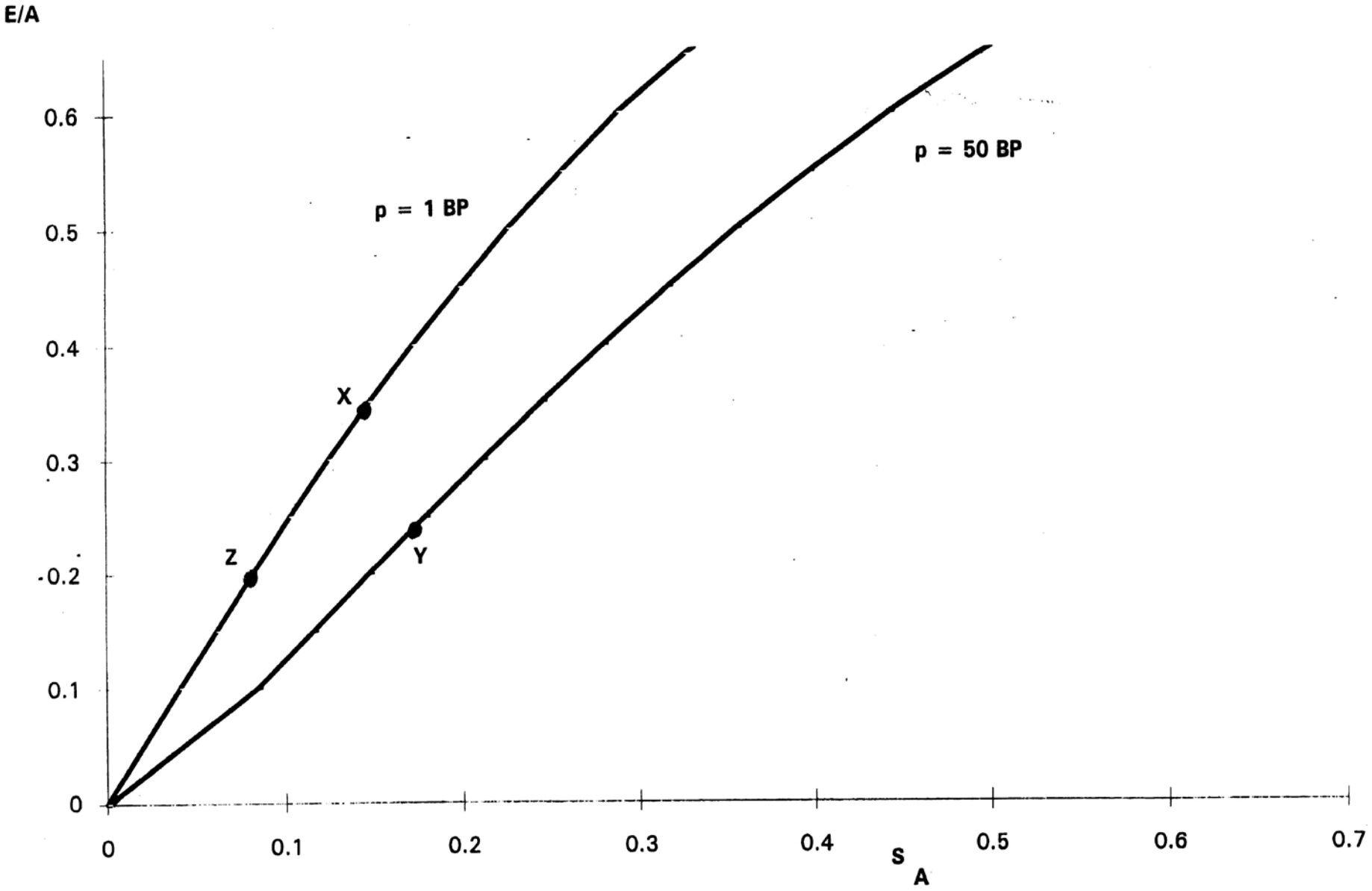
% Banking Foreign-Controlled (IMF 2000)

	1994	1999
Czech Rep.	5.8	49.3
Hungary	19.8	56.6
Poland	2.1	52.8
Argentina	17.9	48.6
Brazil	8.4	16.8
Chile	16.3	53.6
Colombia	6.2	17.8
Mexico	1.0	18.8
Peru	6.7	33.4
Venezuela	0.3	41.9
Korea	0.8	4.3
Malaysia	6.8	11.5
Thailand	0.5	5.6

How Do Disciplined Systems Behave?

- Disciplined Banking
  - Equity/Assets and Asset risk managed to target low default risk on debt of bank. During good times, equity capital is cheap (no lemons problems) and lending opportunities are good, so both asset risk and equity capital ratio rise.
  - When shock hits, banks face prospect of loss of deposits due to combination of risk aversion and need for liquidity of depositors, and asymmetric information problem about losses within bank.
  - As banks lose deposits they act to restore confidence by contracting loans, cutting dividends, and expanding cash asset holdings.

NYC Bank Capital and Risk 1920-1936



NYC Banks' Loans/Cash, Equity Ratio

	Loans/Cash	Equity/Assets	Dividends
1922	2.1	0.18	
1929	3.3	0.33	$392m
1933	1.0	0.15	
1940	0.3	0.10	$162m

Source: Calomiris-Wilson JB 2004.

Discipline Reflected on Liability Side

- If discipline exists, it appears in three forms:
  - Interest cost of debt goes up with risk
  - Rationing effect: deposits decline
  - Shift to high-cost, “monitored” marginal funds
- These effects are consistently visible historically, as well as currently, in all types of countries.
- Bank liability data, and liability interest rate data are the most reliable, consistently reported data on balance sheets, which helps make them especially useful as indicators.

Example: Chicago 1932

	1932 Failures	1932 Survivors
Number	46	62
1931 R_D	2%	1%
1931 Borr/Debts	12%	2%
1931 Dep growth	-45%	-33%

Source: Calomiris-Mason 1997 AER.

Example: Argentina 1995

	1995 Failures	1995 Survivors
R_D paid in 1993	13%	9.5%

Example: Mexico 1996

- Even though there was 100% deposit insurance, the losses were so large, and the political debate so uncertain, that insured deposits were not necessarily protected.
- Banamex (marginally solvent) paid 17% on its funds, on average, but Bank Serfin (deeply insolvent) paid 29%

Discipline, Even with Insurance

	All banks	Banamex	Serfin
1996 Dep. Int.	25.2%	17.4%	28.9%
1994 branches	5,051	710	561
1996 branches	6,264	912	578

Argentina 1992-2000

- Free foreign entry (competitive pressure, skills).
- Encouragement of privatization of loss-making provincial banks (pay provinces to privatize and renounce bank chartering). 18 privatized 1992-99.
- No explicit deposit insurance (modified in 1995).
- Book equity capital requirement depends on loan interest rate.
- VAR to set capital requirement for market risk based on market volatility.
- Liquidity requirement can be satisfied with standbys (rewards banks that command market confidence).
- Aggressive NPL policy.

Argentina (Cont'd)

- BASIC System: Integration of rules for information *creation, disclosure, and use*.
- Central de riesgo information pool (crafted to minimize free riding, while allowing banks to avoid bad credits, and avoid double pledging of collateral).
- Auditing supervised, bonded.
- Subordinated debt requirement forces banks to issue 2% of deposits in the form of uninsured subordinated debt held at arms length. (Concentration of uninsured claim may be desirable, as more informed, and harder to renege if amount is small...no systemic excuse.)
- Banks rated by approved rating agencies (good intentions, bad outcome).

Argentina (Cont'd)

- Argentina showed healthy signs of operating with prudent (old-fashioned) risk management.
- One indication of the effectiveness of the system is the fact that deposit growth rates reflect deposit risk, and that deposit risk is related to book measures of asset risk and equity capital.
- Another indication of effectiveness is that banks that experienced increases in their interest cost of debt acted quickly to reduce risk, and thus bring interest cost back down.

Argentina (Cont'd)

Dependent Variable: Quarterly Deposit Growth

Regressor	Coefficient	Stand.Error
Eq Ratio (-1)	0.277	0.074
Loan Int. Rate	-0.254	0.121
Loans/Cash	-0.0032	0.0007

Sample period: 1993:3-1999:1

Number of Observations: 1,138

Adjusted R-Squared: 0.31

Argentina (Cont'd)

Deposit Interest Rate Autoregression

Dependent Variable: Quarterly Deposit Interest Cost

Regressor	Coefficient	Stand.Error
R_D (-1)	-1.29	0.04

Adjusted R-Squared: 0.58

Number of Observations: 688

Argentina (Cont'd)

- Still, there is evidence that sub debt helped
- Low compliance was indicative of bank weakness, and central bank realized this, so it gave them a signal, but not one that the public had access to (so no discipline on regulatory forbearance). Source: Calomiris-Powell 2001.

	1996-99 High compliance	1996-99 Low compliance
R_D	7%	8%
NPL	14%	25%
Equity ratio	0.157	0.183

Contingent Capital (CoCos) Calomiris and Herring (2011)

- Sub debt requirement can be improved by taking the form of contingent capital (CoCos).
- Designed properly, CoCos incentivize **timely recapitalization** of bank to avoid dilutive conversion of CoCos.

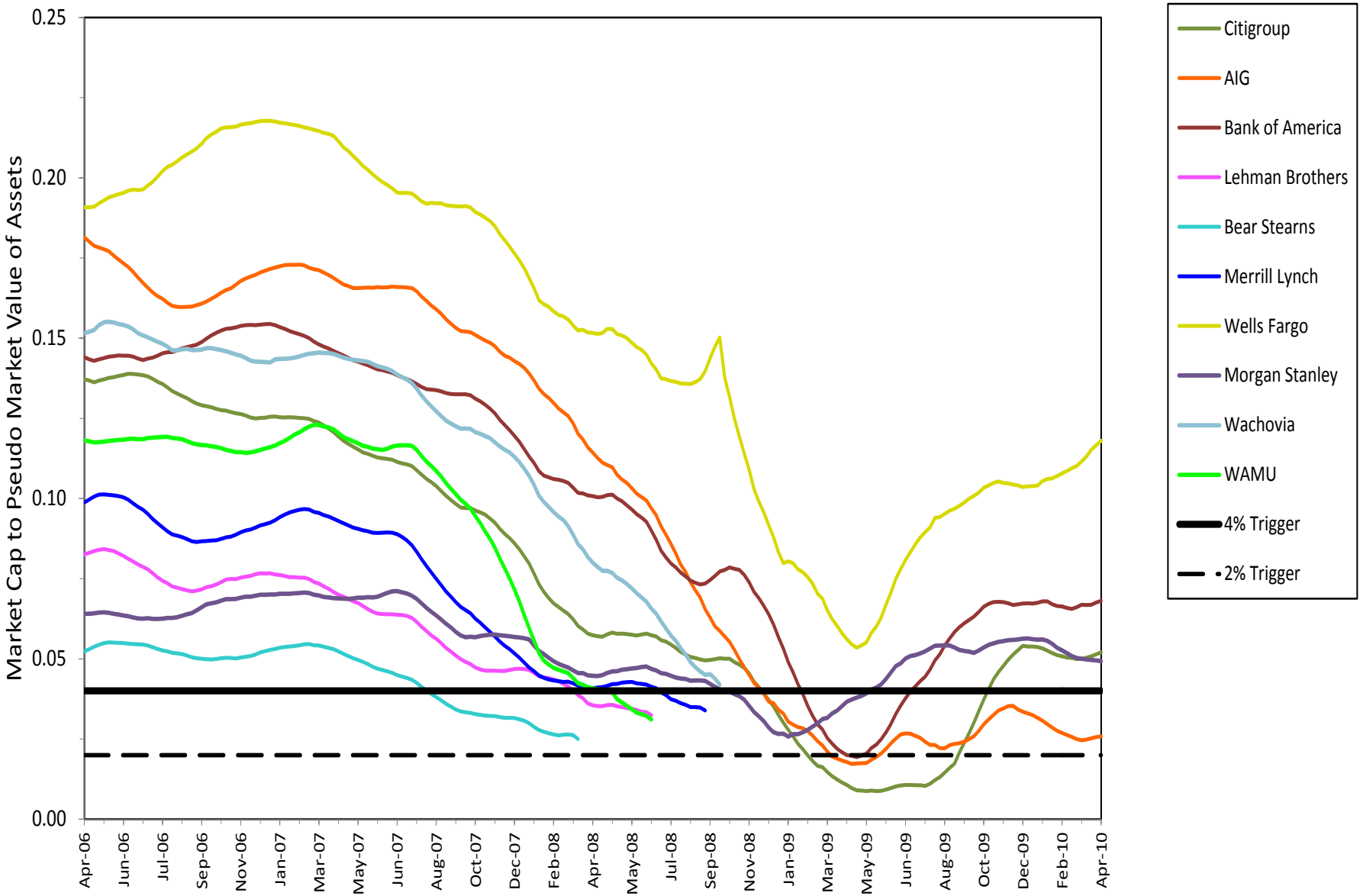
- **Key point:** A combination of common equity and CoCo requirement can achieve *more* than a common equity requirement alone, and at lower cost.

Implementation

- **Require CoCos** = 10% of (face value of debt and market value of equity)
- **Use market-based trigger** but dilute incumbents at conversion.
- **Use high trigger (8%),** to avoid problems of raising equity in pre-trigger zone.
- **How would this have worked** in U.S. crisis? **Very well.**

90 Day Rolling Market Cap to Pseudo Market Value of Assets

For large American financial institutions that received SCAP infusions



Macro Prudential Rules

- Macro prudential regulation that raises capital requirements during normal times in order to lower them during recessions.
- Additional macro prudential regulatory triggers that increase regulatory requirements for capital, liquidity, or provisioning as a function of credit growth, asset price growth (Borio and Drehman 2009).

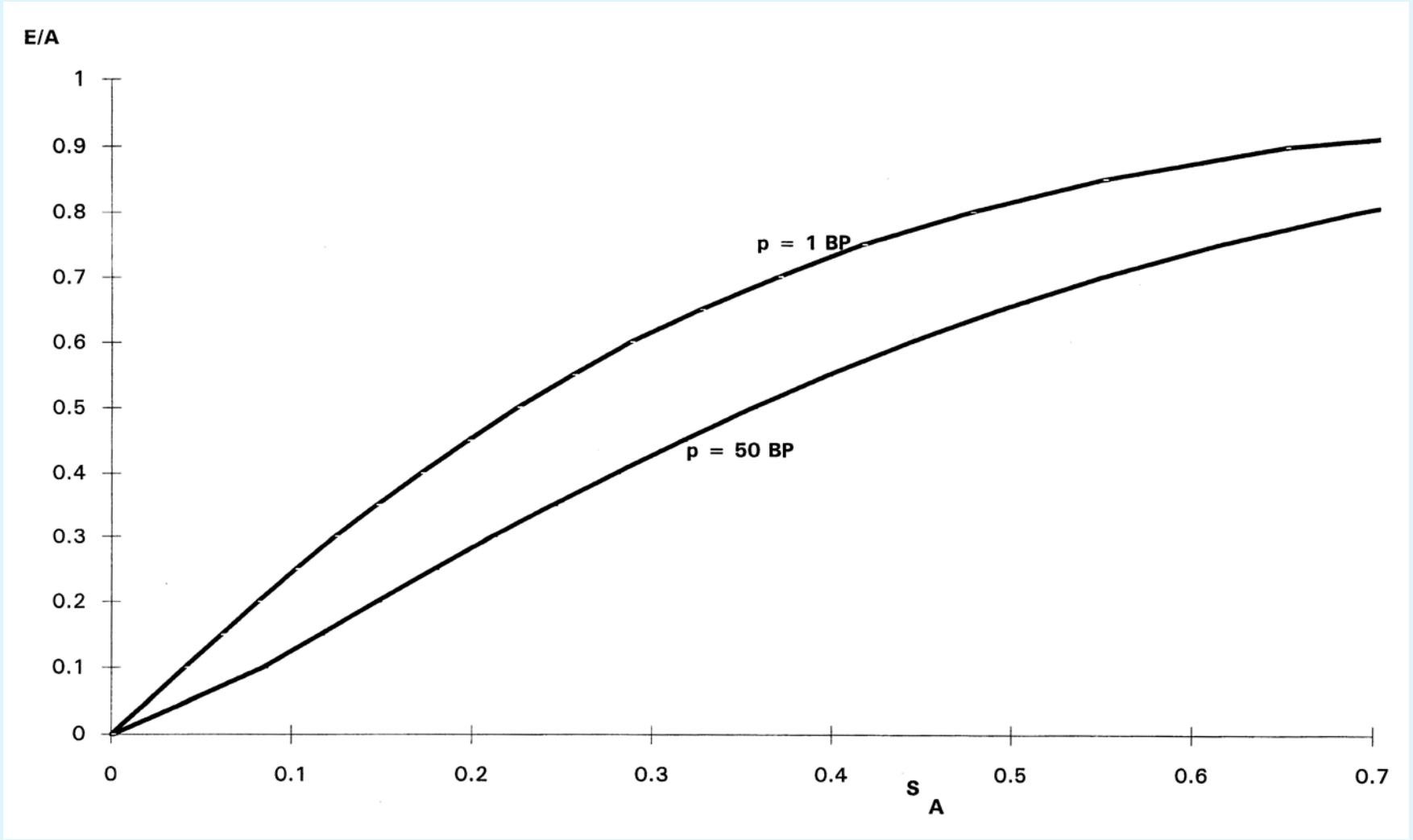
Case Study: Colombia 2006-2008

- Financial system loans annual growth rose from 10% in December 2005 to 27% by December 2006.
- Core CPI rose gradually relative to credit (from 3.5% in April 2006 to 4.8% in April 2007).
- Real GDP growth in 2007 was 8%.
- Current account 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 not only currency mismatches of banks and other FX exposure in the system, but also gross currency positions (to avoid counterparty risks).
- Credit growth dropped to 13%; risk-weighted capital ratio for banks is 13.9%, and first half 2008 was 4.9% above first half of 2007, fell to about 3.5% for 2008 as a whole.

Liquidity Requirement? Theory

- In frictionless world (perfect information, no transaction cost) a liquidity standard would add nothing (two ways to skin the cat of target default risk on bank debt).
- But in the real world, it could add a lot.
  - **Lack of substitutability of debt capacity for cash during times of need** due to financing frictions associated with asymmetric information (Almeida, Campello and Weisbach 2004, Acharya, Almeida and Campello 2006, Denis and Sibilkov 2007, provide empirical evidence that cash is not a perfect substitute for debt capacity). **This is especially true of banks (ABCP, repos, Libor)!**
  - **Observability of cash is better for moral hazard prevention after unrecognized losses** than for capital (important given regulatory incentives to hide losses, and asymmetric information problems about loans).
  - **Buffer against noisy signals** (Calomiris and Kahn 1991).
  - **Reduce dependence on LOLR** (and accumulation of assets by central bank during crisis) by having banks self-insure against liquidity risk.

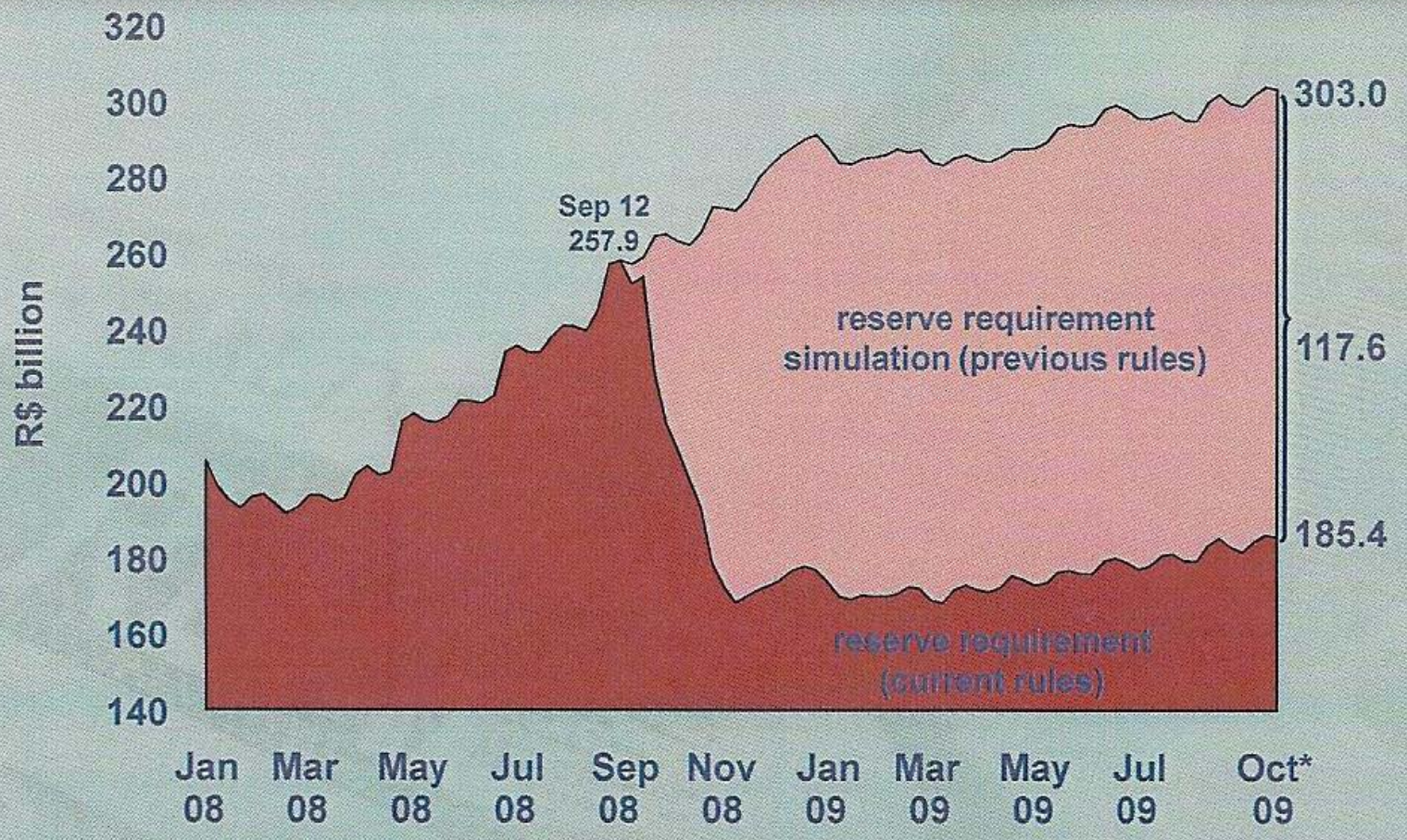
Two Ways to Skin Cat of Default Risk



Brazil's Response in 2008-2009

- Compulsory reserves were reduced by R$100 b
- Private deposit insurance was "encouraged" to extend its coverage for a special assessment
- The private deposit insurance fund was "encouraged" to purchase some loans from banks
- Liquid (large) banks were "encouraged" to lend to illiquid (smaller) banks
- Currency swaps from Fed passed through to banks
- Tier one capital requirements were relaxed by allowing excess provisioning to count as tier one capital
- Emergency measures were reversed in 2009 and 2010
- No LOLR lending was employed, as bank reserves took pressure off of the LOLR

Crisis Management (BRL)



Source: BCB

*up to 10/16

Proper Design of Requirements

- Remunerative (no reason for a new tax).
- Note partial offset via risk-based capital.
- Would be 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 on repos or CP to finance more than x% of assets).
- No arm twisting on interbank lending by government. Liquidity requirements do not prevent breakdown of interbank market, and so **LOLR is still needed.**
- Allow it to be met in part (say, up to 25%, similar to successful system in Argentina in the 1990s) through standby letters of credit by qualified institutional investors (which promotes transparency and market discipline).

Complex Basel III Liquidity Regs

- Liquidity coverage ratio – measures the ability of a bank to meet all its required cash outflows during an acute funding stress lasting a month. Liquid assets = cash and unencumbered government securities.
- Net stable funding ratio – measures the "stickiness" of funding sources; funding that isn't prone to flight in a crisis. Fed funds, commercial paper, and repo are not considered stable funding sources.
- Stable funding = retail deposits, long-term debt, and equity capital.

Haircuts and Living Wills

- CoCos for large banks probably will take care of much of the problem.
- Detailed regularly updated plans for intervention and resolution of large, complex institutions **prepared by them**, which specify how control the bank's operations when transferred to a prepackaged bridge bank if the bank became severely undercapitalized.
- **Hybrid reliance on bankruptcy with special resolution authority triggered by credible determination of real systemic risk.** Key problem: how to keep unwarranted resolutions from happening?
- Minimum 10% haircut on unsecured debts of intervened banks.
- Argentina's decision to allow losses on bank debt in 1995 was key to credibility of banking reform.

Is Anybody Listening?

- Basel isn't. One could describe it as a conspiracy to coordinate the absence of accountability for failed regulation.
- The U.S., Germany, France, and Italy seem to have no taste for credible reforms, and even Spain is unable to shut Caja Madrid to prove that it will protect its public finances from the destruction of caja bailouts.
- The UK and Switzerland, however, do seem to be paying attention to the lessons of the past thirty years, and the thought leadership of emerging markets. Like reforming EMs, small countries with big financial systems cannot afford to blow up again.