Modern finance: current crisis and policy debates II

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Bengaluru Winter School, Bengaluru, India 23-24 December 2015

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- 2. Bretton Woods system Financial stability without globally-induced macro stimulus
- 3. Financial markets and large banks: escape from regulation, phase 1
- 4. Hyman Minsky's financial instability hypothesis:
- 5. After the breakdown of Bretton Woods a cold plunge into Neoliberal era
- 6. Minsky's theory of crisis and crisis resolution in historical context
- 7. Financial crisis in the global South: Orthodox and heterodox explanations
- 8. The Neoliberal overseas lending/crisis cycle
- 9. Power in Finance 1: Hegemonic power and TBTF
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- 7. Financial crisis in the global South: Orthodox and heterodox explanations
- 8. The Neoliberal overseas lending/crisis cycle
- 9. Power in Finance 1: Hegemonic power and TBTF

7. Financial crisis in the global South: Orthodox and heterodox explanations

The credit-market supply side:

- Eurodollar recycling of oil-rich countries' surpluses to oil-poor countries came into being at the time of the two oil shocks in the 1970s (1973-74 and 1979-80).
- Nations with large reserves of natural resources and "untapped development potential" were regarded as great targets for these recycling loans.
- Large US and to a lesser extent Japanese banks were competing for new product markets. In the US case, their loss of blue-chip corporate customers plus the impact of disintermediation had them looking for new borrowers.

Latin American debt buildup in 1970s-1980s: institutional background

The credit-market demand side:

- Latin America was perfect esp. the big 3 of Brazil, Argentina, Mexico: big markets, resource-rich nations.
- Loans could be packaged using offshore facilities, esp. Euro-market branches: so little foreign-exchange impact for lending nations.
- The price of this lending for the Latin American nations was, significantly, a shift in their lending regimes. They moved from regimes of "financial repression" hostile to foreign-bank participation to more openness.
- Compromises were made. But the markets were opened.
- The lending was launched at a fierce pace. BankAmerica and Citibank, for example, competed to have the lead -- \$3 bn each.

Latin American debt buildup in 1970s-1980s: institutional background

The crisis road

- Things went along until the 1981-82 recession.
- This along with Paul Volcker's sky-high interest rate policy had a double and deadly impact.
- Commodity prices fell, including oil prices, due to falling demand and to new sources of supply. What had looked like the "Limits to Growth" era with Malthusian constraints binding rapidly turned into just another developing-world price bust. Interest rates exploded.
- Carlos Diaz-Alejandro labeled this situation perfectly when he wrote his JDE article (published posthumously in 1982), "Goodbye financial repression, hello financial crash."

Latin American debt buildup in 1970s-1980s: institutional background

- The Latin American debt crisis clearly resulted from a conjuncture of mistaken expectations, excessive banking competition, collapse in commodities prices, and a severe and unprecedented macropolicy environment.
- The stringent environment required lenders to roll over debt to permit payments to continue. The idea was suggested that the problem was one of "liquidity" not "solvency." [Supporting the view of Walter Wriston, Citibank, 1977: "Countries don't go bankrupt."]
- Mexico defaulted on its payment obligations in August 1982; Peru followed, and other nations too were sucked into the chaos.
- The Lost Decade followed in Latin America. Its leading industrial firms were virtually eliminated from the global scale.

The Latin American debt crisis and its "lessons": Orthodox approaches

Orthodox approaches

- Efficient-market models of financial crisis
 - "Public choice" political economy models
- Principal-agent models of financial crisis: "New Keynesian" microfoundations without macro
 - Stiglitz, Eaton, and Gersovitz, "The Pure Theory of Country Risk," *European Economic Review* 1986
- Sovereign nations, undisciplined savings-and-loan managers: all, unreliable agents

Efficient-market approach to financial crises

- If agents are rational, information is freely available or revealed through price movements in efficient markets, and if markets are deep enough, then every saver can manage their own risk-taking.
- Key results:
 - Modigliani-Miller theorem: the irrelevance of financial structure
 - Fama: the irrelevance of banking
- Disturbances to equilibrium:
 - Government interference in free market outcomes
 - Unwillingness of participants to honor contractual commitments
 - So "public choice" explanations are offered: political interference with the operations of markets.
- EG: Latin American debt crisis
 - Walter Wriston: "Countries don't go bankrupt."

The Latin American debt crisis and its "lessons": orthodox approaches

Eaton, Gersovitz, Stiglitz, 1986. Why do debt crises occur? The "absence of overt clues to what will happen to those involved with these debts generates a widespread interest in a conceptual framework useful in interpreting the current situation." ... "We seek to articulate very general principles for looking at the most essential problems posed by international lending." (481)

"[W]hat happens to a loan is a result of a series of decisions, not the mechanical realization of some outcome" (483). **Borrowers** Willingness to pay (moral hazard) is the issue, not ability to pay: "the resources of the debtor are likely to be adequate to repay the loans regardless." (485)

It is a principal-agent problem.

- Somewhere, a perverse incentive mechanism is lurking
- Principal-agent theories of credit markets stood opposed to EFM (efficient-financial market) theory.
- These theories saw financial markets as riddled with lots of missing and asymmetrically distributed information; in particular, potential borrowers would not be truthful about their capacity to repay (their 'type') or about how hard they would work if they received loans (their 'effort').

- In this view, maintained by Joseph Stiglitz and others, freeing financial markets can be disastrous; the reason is that when there is asymmetric information in credit markets, lenders must be able to set prices and choose only some applicants, leaving others unsatisfied (that is, monopolistic competition and rationing are 'optimal').
- The role of financial regulators is to provide fair rules so that incompetent lenders and cheating borrowers are disciplined or disappear.

Asymmetric information between borrowers and lenders

A principal-agent framework - A principal-agent relation arise when one economic unit (the principal) controls a scarce resource to which another unit (the agent) needs access — for example, credit, or a jobs.

The principal may some difficulty in choosing the right agent from among those who apply to use this scarce resource.

This difficulty arises because the principal is disadvantaged in one important sense – she knows less about the capability and/ or intended effort of her prospective borrower (employee) than the borrower (employee) herself does.

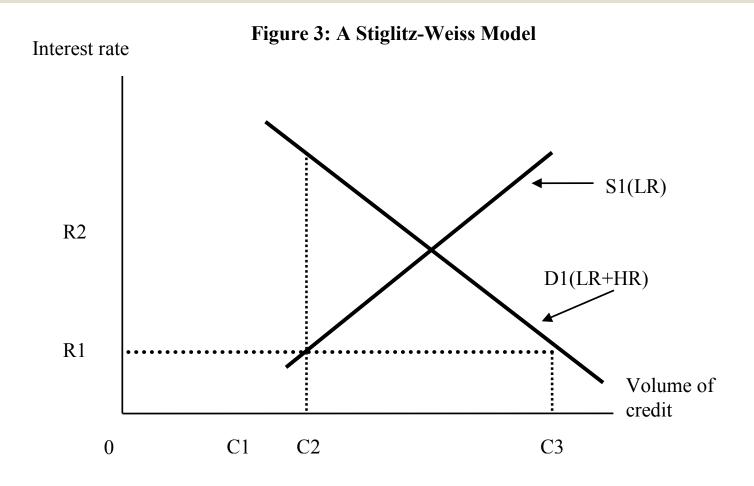
This difficulty matters when principal and agents are incentive-incompatible – that is, a situation wherein one's gain is another's loss. Incentive incompatibility problems of two kinds – variable capability / variable effort

Moral hazard problem – variability in agent effort *ex post:* either the agent may cheat (give low, not high, effort), or agent may engage in riskier projects/activities than principal wants (high/low risk)

Solution: Force incentive compatibility through "carrots" or "sticks"

Sticks – contingent contract renewal; probability of non-renewal or loss

Carrots – piece-work / incentive-based pricing



Adverse selection - variability in agent "type" (good / bad), (skilled/not skilled), etc. This is an "ex ante" problem... before the contract

There is a "revelation problem" due to incentive incompatibility

Solution – Non-dissipative signaling ("Spence" signals) with 3 criteria for a good signal:

- (1) costly for the agent to transmit
- (2) return to the agent is less than cost of emitting the signal
- (3) correlated with type

EGs: doctorate as a criterion for getting a job as professor; a "FICA" score for a potential borrower

Back to "Pure theory" model (Eaton et al, 1986):

• The borrower receives benefit L from loan L; if it pays back, it costs r(L); if it defaults, it pays penalty p*. So there is a comparison of:

U(L,r(L)) vs. $U(L,p^*)$; so repay if $U(L,r(L)) > U(L,p^*)$ which depends on p^* .

Conclusions: (1) if there are no penalties, there is no lending

- (2) If bank equity < sum of defaulted loans, then penalty cannot be imposed
- (3) Penalty will not be imposed if lender hopes to lend again.
- Q: Is there any case when penalty will be imposed?

The Latin American debt crisis and its "lessons": orthodox approaches

Stiglitz, Eaton, and Gersovitz conclude, "our analysis leads to a view that it is surprising that there has been as much lending to developing countries as there has been, not that there is not more." (512)

The Latin American debt crisis and its "lessons": Heterodox approaches

Heterodox approaches

- Critique of Orthodoxy: Ha-Joon Chang: "The hazard of moral hazard" *Cambridge Journal of Economics* 2000
- Constructive alternatives:
 - Global market segmentation
 - Class power, conflict in borrower countries
 - Financial instability (Minsky)

I. Global market segmentation approach

An approach built on the political economy of financial crisis –

- Debt pushing. Darity/Horn, "The Loan Pushers." Segmented credit markets, developing world is last served except when there is a surge of credit that finds its way to the global South.
 - Linked into the Sheila Dow/Vicky Chick approach to regional credit creation/starvation
- Competition push by intermediaries is a key: Hungry for credit, market share. Blind to risks ("Disaster Myopia," Guttentag and Herring, 1984, *Journal of Finance*).
 - Recently, this push can come from companies wanting to engage in foreign direct investment (FDI).
- Borrower countries are dependent, not 'free actors' in global credit markets. They receive low shares of aggregate global credit, except when there is a glut; and then that credit is "dumped" on them.
- The colonial legacy is not irrelevant; the links remain there

BIS-Reporting Banks' International Claims on Developing Nations, 1983-2003 (Millions US96\$)

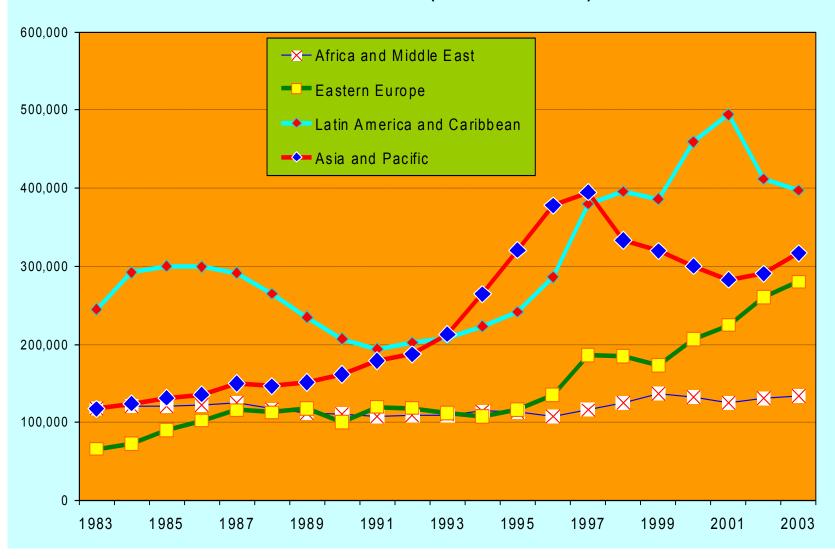


Figure 1: Banks' International Claims on Latin America by Nation of Lending Banks, 1983-2003 (Millions US\$96)

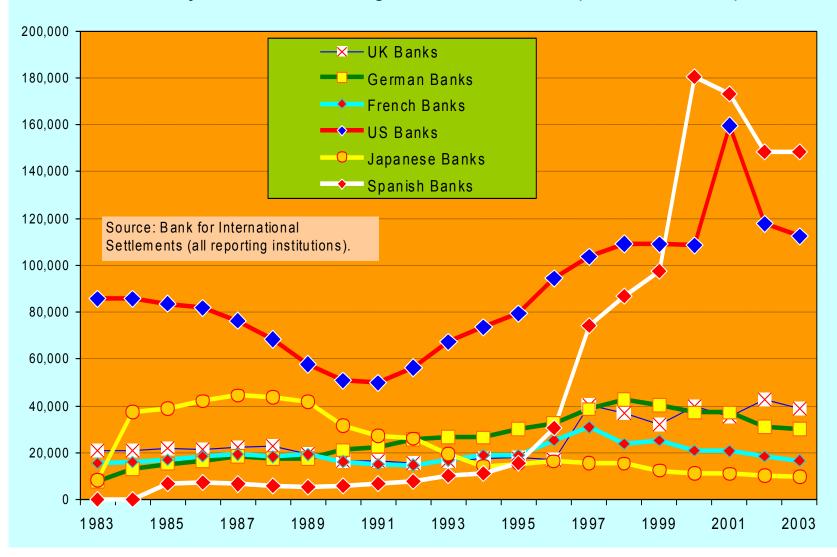
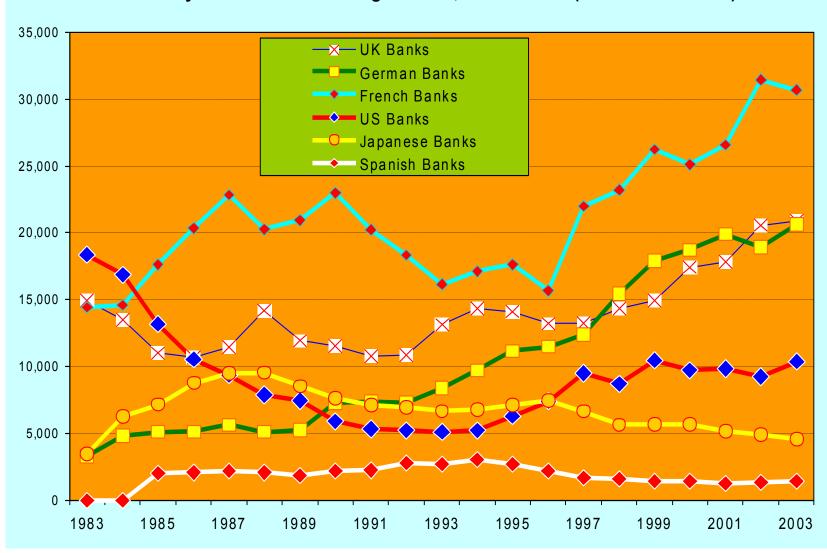


Figure 2: Banks' International Claims on Asia / Pacific by Nation of Lending Banks, 1983-2003 (Millions US\$96)



BIS-Reporting Banks' International Claims on Africa by Nation of Lending Banks, 1983-2003 (Millions US\$96)



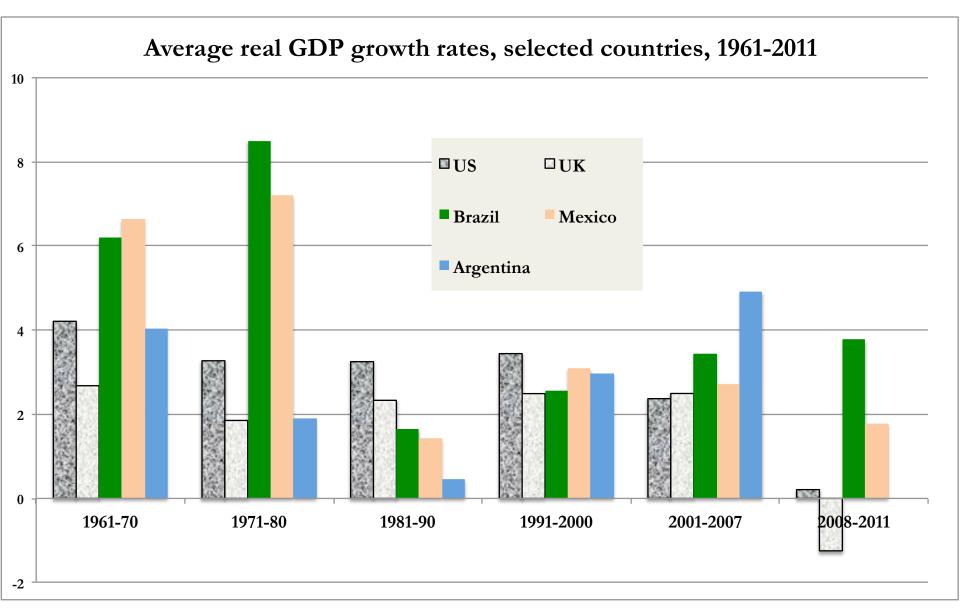
II. A conflict model of borrowing and repayment (Pastor/Dymski).

- A miscalculation of ability-to-pay. The problem may really BE one of "adverse selection" and not "moral hazard."
- The key move is to eliminate the myth of the "single player" country. Instead there are a number of "players" within the borrower country.
- Consider an economy with dual constraints, such that:
 - State deficit net transfers = inflation tax (2a)
 - Δ reserves + capital flight = trade balance + net transfers (2b)
- Industrial output = imports + industrial wages + net taxes + interest payments + after-tax profits (1b)
- Or rewrite (2b) as: Interest payments = trade balance capital flight Δ reserves + net loan flows (2b')

How do you signal "effort" in meeting loan payments?

- (1) Reduce wage share, where
 wage share = 1 import share tax share after-tax profit share
 (2) Reduce government spending
- The problem is that output and hence the state deficit and the trade balance -- depends on worker effort; and worker effort can be compromised by these steps to increase "effort-based signalling". Political legitimacy can be threatened.

Both labor intensity and wage share are influenced by class power – which side, capital or labor, has the ability to withdraw. The debt crisis shifts power toward capital and permits regressive redistribution. This could compromise political legitimacy and undercut economic productivity.



Source: IMF/World Bank database. No data for Argentina after 2006.

III. The Financial Instability Hypothesis

Hyman P. Minsky - Applied to these debt crises, the idea is this:

- Expectational errors and myopia are common features of all economies;
- capitalist economies involve firms and enterprises that invest, which means committing real resources (wealth) in real-time (uncertain) environments;
- in advanced capitalist economies, firms are able to leverage their investments through borrowing, thus increasing their potential gain but also enhancing the possible magnitude of loss;
- furthermore, sustained episodes of borrowing/lending tend to emerge as self-reinforcing beliefs encourage "speculative investment" (disaster myopia, for Guttentag and Herring)

So the Latin American 1982 and Tequila 1994-95 and the Japanese/ Korean land bubbles of 1987-90 and the Japanese equity-market bubble of 1986-90 and the Asian financial crisis of 1997-98 and the US equity-resale market bubble of the past few years — all are typical instances of the speculative boom/bust cycle characteristic of advanced capitalist economies.

More from Minsky framework?

Back to the structural framework – you can have Minsky crises without Minsky cycles...

We have to add "open-economy features" -

- Exchange rate volatility
- Differential stocks of wealth/reserves of different countries
- Problems of cross-border balance.

8. The Neoliberal overseas lending/crisis cycle

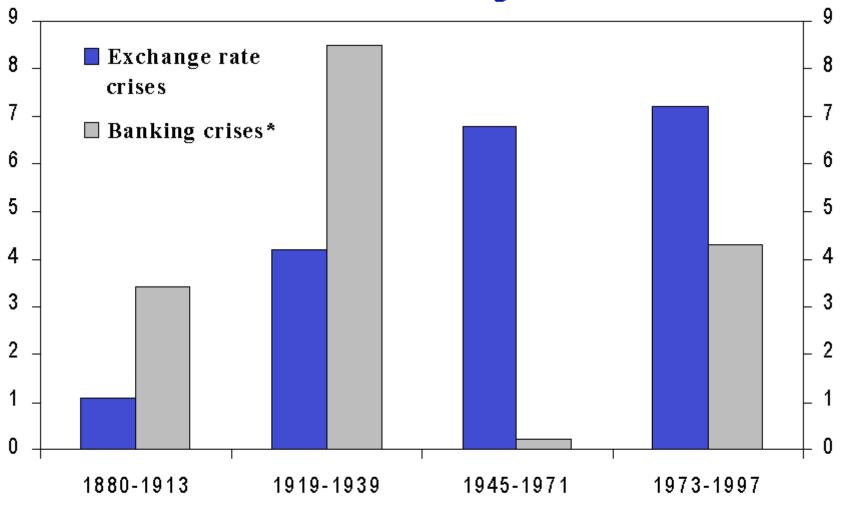
- A new repeating pattern, late 1970s-onward:
 - Growth prospects perceived to be higher in a country meeting a certain criterion (large commodity potential, high urbanization/export platform potential, etc.)
 - Then a rush of lending, with competition by lenders to get in on the "sure thing" projects
 - Then a shock event demonstrating that expectations have been euphoric or overblown
 - Then a withdrawal of lending growth, or even a refusal to roll over debt obligations ("sudden stop")
 - Then a period of recovery by banks, who wait for the new "next best thing" area: bubble-driven growth.
 - Meanwhile, back in Latin America a "lost decade"

The Neoliberal overseas lending/crisis cycle

- This has suggested to some analysts that market participants could react differently to missing information "sunspot" models closed by beliefs (Roger Farmer, Akerlof and Shiller).
 - The "sudden stop" model (Calvo 1988) is one example.
- The IMF/World Bank took the opportunity of so many crises to build a comprehensive database of financial crises, on the premise that "This time it's [never] different" (Reinhart and Rogoff 2011).
 - There has been a growing number of investigations of the determinants of financial crises based on the idea that these crises may all have common determinants.

Chart 2. Frequency of financial crises

Annual average

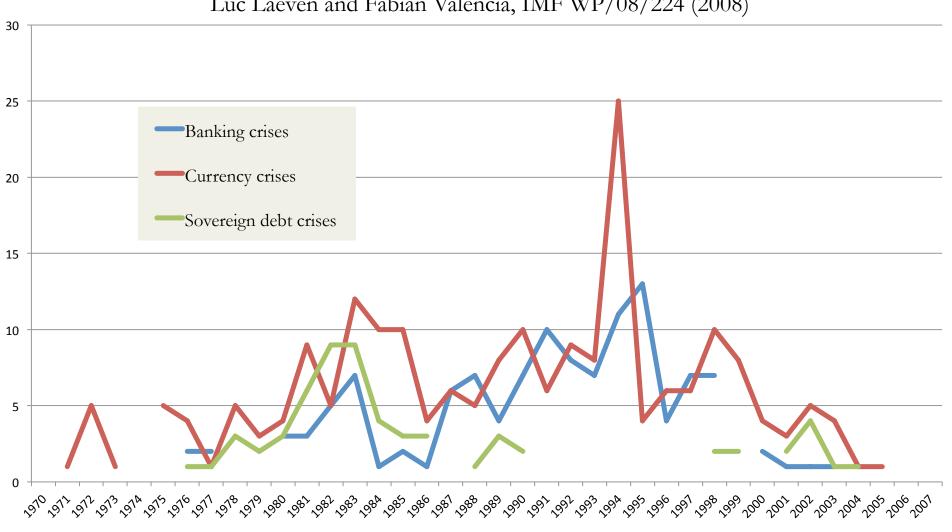


Source: Bordo, Eichengreen, Kliengebiel and Martinez-Peria (2001)

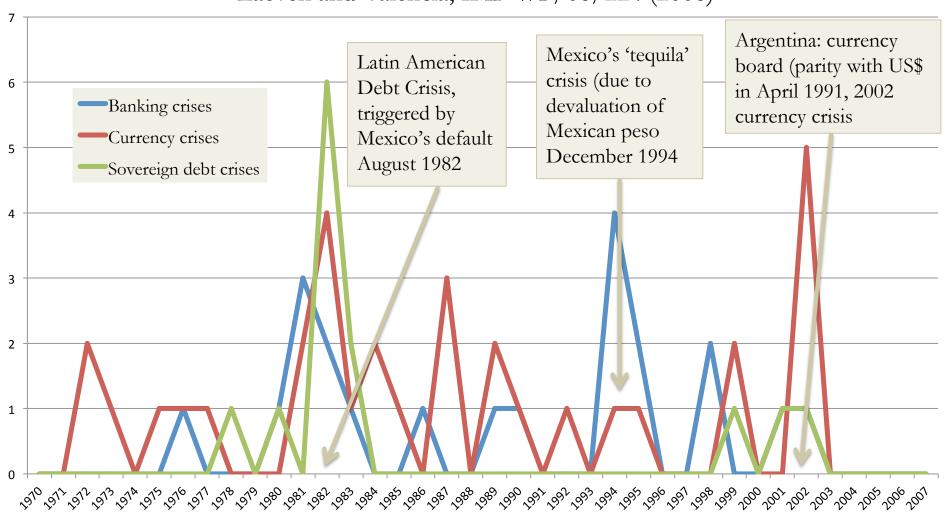
^{*} Covers banking crises and combined banking and exchange rate crises

Systematic Banking Crises: A New Database

Luc Laeven and Fabian Valencia, IMF WP/08/224 (2008)



Systematic Banking Crises: South America, Mexico Laeven and Valencia, IMF WP/08/224 (2008)



Semi-efficient-market approaches to financial crises

- Adding together missing information is however sufficient to generate market crashes.
- There are potential conflicts between the wishes/needs of the market participant and the size of the market; and there are limits to the capacity of agents to transfer or underwrite risk when this is done endogenously within a market context.
- These are questions of "liquidity" vs. "leverage"
- Problems could emerge because of limits in the size of the market ("limits to arbitrage" Vishny and Shleifer 1996) relative to the positions that players want to take.
- "Riding the bubble" Brunnemeier and Nagel (2004)
- "Leverage cycles" Geneakaplos (2010)

9. Power in Finance 1: Hegemonic power and TBTF

"It is necessarily part of the business of a banker to maintain appearances and to profess a conventional respectability which is more than human. Lifelong practices of this kind make them the most romantic and the least realistic of men. It is so much their stock-in-trade that their position not be questioned, that they do not even question it themselves until it is too late. Like the honest citizens they are, they feel a proper indignation at the perils of the wicked world in which they live, when the perils mature; but they do not foresee them. A Bankers' Conspiracy! The idea is absurd! I only wish there were one! So if they are saved, it will be, I expect, in their own despite."

- John Maynard Keynes ("The Consequences to the Banks of the Collapse of Money Values," Chapter 7 in *Essays in Persuasion*. London: Macmillan, 1931, p. 178)

"Goldman Sachs Chief Regrets Leveraged Transactions: Report," REUTERS, May 20, 2010

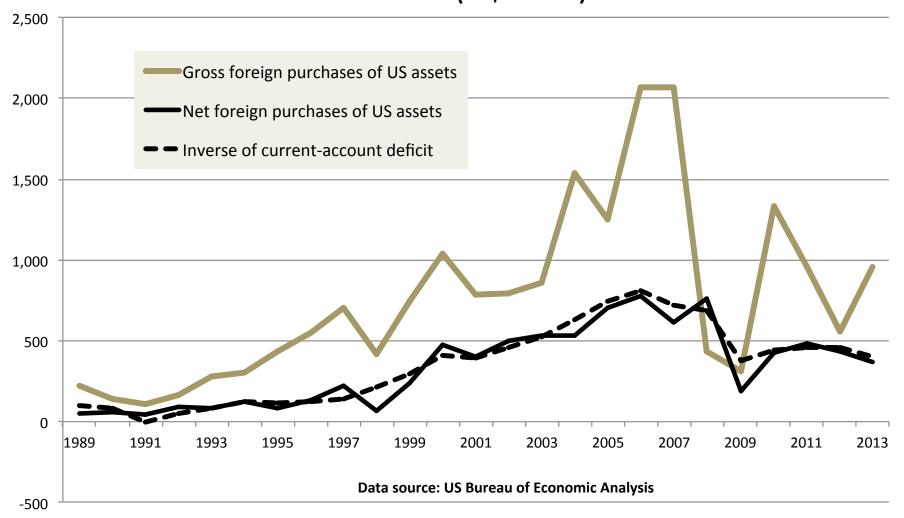
MUMBAI (Reuters) - Goldman Sachs Chief Executive regretted having participated in transactions that brought too much leverage into the world, he said in an interview ...

"I regret that we participated in transactions that brought too much leverage into the world. It led to people taking too much leverage. But those were the standards of the moment," Lloyd Blankfein told the newspaper, while on a four-day trip to India.

9. Power in Finance 1: Hegemonic power and TBTF

- The hegemon is defined not as the coordinator of the global system, but as the country whose currency is most used; safest.
 - Instead of steady commitment to multilateral trade, an increasing number of bi-lateral or tri-lateral trade agreements.
 - NAFTA, 1992; Korea-US, Colombia-US, etc.
- Wall Street benefits from the steady current-account deficits, as this means an inflow of money on capital account
 - A "lock-in" effect for those holding US dollars as reserves
 - The US as a "global liquidity sink"
 - 1980s discussion in US policy circles: "comparative global advantage in consumption" or "N-1 currency" theory
 - Implication: asymmetric financial regulation for the hegemon(s)

Figure 1: US Current-account position and foreign purchases of US assets, 1989-2013 (US\$ billions)



What is Post-Hegemonic Hegemony?

All nations, including the hegemon, compete for national advantage.

- There is no clear pattern of high-currency, low-currency as a goal. There is a balancing of forces. For all countries need trade, and currencies that maintain global value.
- But this generates a dilemma for all: a high-valued currency makes trade difficult, a low-valued currency risks capital flight. So all countries are caught between "flow" and "stock" requirements of foreign exchange / currency markets

What is Post-Hegemonic Hegemony?

All nations are deregulating, relying more on market forces

- So financial centres grow in size to astonishing sizes
- Competition of national champion firms occurs as much as competition among nations – including in the realm of finance
- So should regulators in every nation let finance run freely?
- Maybe not: For the more powerful that financial markets and large banks get, the more dependent are nations on making sure that these markets and banks *not* exceed their boundaries, being prudent isn't it the case?
- For aren't all countries subject to capital flight and currency devaluation, the discipline of global markets?

Origins and elements of the "Too-Big-to-Fail" doctrine in banking

- The legal basis for "too big to fail" interventions was established in the Federal Deposit Insurance Act (FDIA) of 1950, which gave the FDIC power to provide "assistance" option in cases where "continued operation of the bank is essential to provide adequate banking service."
- A TBTF *intervention* has four elements:
 - 1. One or more large institutions in danger of insolvency
 - 2. They are chartered by governments with capacity to prevent their failure
 - 3. An action by the regulatory authority that prevents failure
 - 4. Shared market/governmental understanding that this action is needed primarily not to prevent the bailee's insolvency but to prevent adverse spillover effects on financial markets and the broader economy.

Origins and elements of the "Too-Big-to-Fail" doctrine in banking

- TBTF *policy*: a pre-commitment to prevent failure of those financial intermediaries whose actual or prospective failure could compromise the integrity of the financial system and/or economy, by a regulator with the capacity and authority to do this.
- This policy depends on two untestable counterfactuals and one precondition:
 - (1) the regulator will permit failure of large banking institutions whose failure would not compromise the integrity of financial markets and the economy; and
 - (2) failure of large banking institutions *would* compromise the integrity of financial markets and the economy
- Precondition: TBTF policy is never formally declared.

Financial strategy and the logic of TBTF

- Banks maximize profits, and their employees maximize their prospective gains. This may or may not involve core ("traditional") banking providing transaction services, storing wealth, supplying credit while absorbing default/liquidity risk(s).
- Changes in technology and product-line deregulation opened new possibilities for making point-in-time profits — selling services, originating and selling loans, offloading risks.
- In the US, easing of anti-trust considerations in merger policy and the S&L crisis facilitated the rapid growth of ambitious large banks hoping to get larger
 - Initially these were called the "super-regional banks" (examples: BancOne, NationsBank, First Union, Corestates, First Interstate)

Triple banking crisis at the end of the Golden Age

- The money-center banks were regarded as systematically important.
- The growth of some large banks led them toward the (untestable) status of being systemically essential; the incentive for big banks was thus to get bigger.
- The late 1970s brought disintermediation and customer loss, leading to a 1980 bank deregulation act.
- The 1980s began with the Volcker interest-rate shock, then double-dip recession. So 1981-82 brought a triple banking crisis:
 - The savings and loan debacle, and the collapse of housing-finance
 - The Latin American debt crisis, triggered by Mexico's nonpayment of its August 1981 repayment obligations
 - The collapse of oil-boom-based prosperity in US "oil-patch" states, and of banks that had financed (bet) on the oil bubble.

Figure 1: Commercial bank failures and assisted mergers, 1947-2011

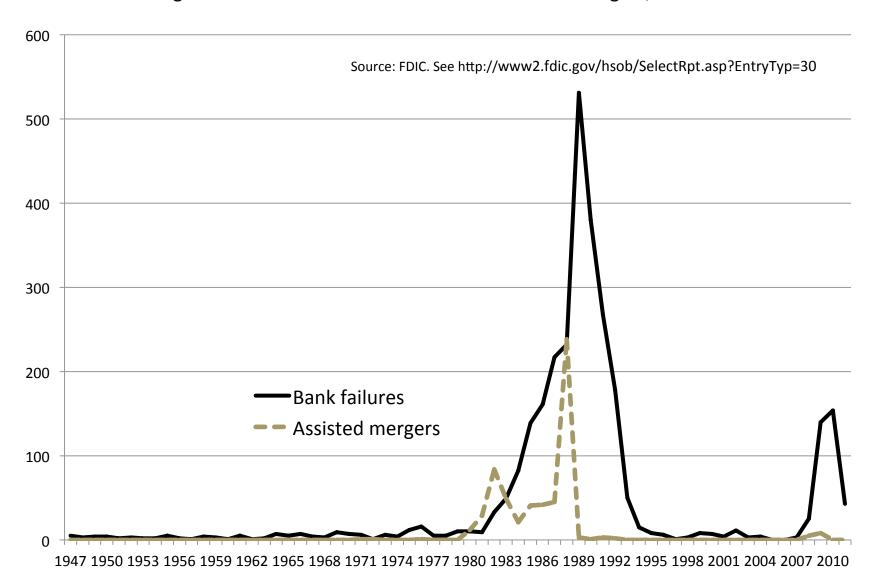
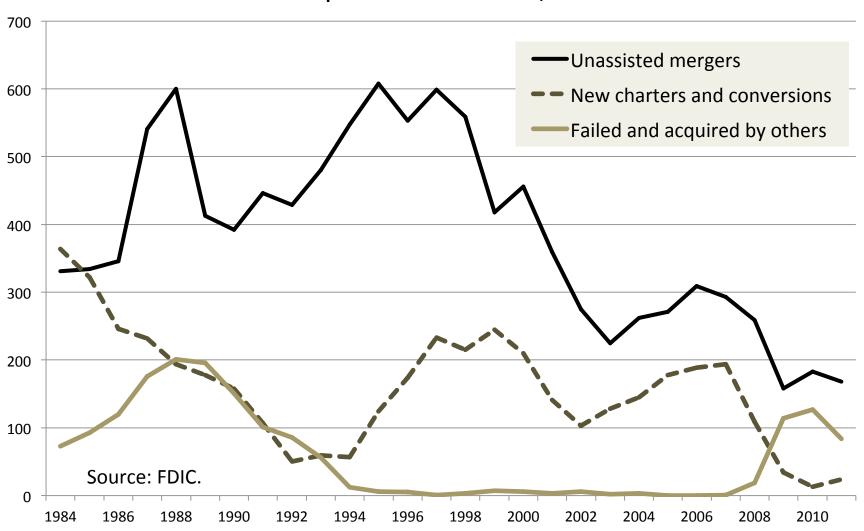


Figure 2: Unassisted mergers, new charters and conversions, and acquisitions of failed banks, 1984-2011



Triple banking crisis at the end of the Golden Age

- Mergers and acquisitions were used to resolve many problems of insolvency among both S&Ls and banks
- Continental Illinois
 - A money-center bank (7th largest in US) lagging others in Latin American lending
 - A target (met) of being the largest C&I lender in the US
 - Provider of substantial credit to Penn Square Bank
- May 1984: An electronic bank run on Continental Illinois, which depended heavily on "bought funds"
 - On May 14, 16 large banks provided a line of credit
 - The FDIC had been using "Open Bank Assistance" (14 times for mutual savings banks in 1981-83)
 - A buyer for Continental was sought; none was found; so as time went on, Continental either had to be liquidated or resolved under OBA.

Table 1: The 11 "Too Big to Fail" US Banks of 1984

- 1. BankAmerica*
- 2. Continental Illinois brought under FDIC receivership in September 1984, operated with 80% government ownership as Continental Bank until 1994, when BankAmerica acquired Continental Bank
- 3. Security Pacific National Bank merged with BankAmerica in 1992
- 4. Citibank*
- 5. Bankers Trust* suffered major losses in 1994 and 1998, acquired by Deutsche Bank in November 1998.
- 6. J.P. Morgan and Company* merged with Chase Manhattan Bank in 2000 and created the JP Morgan Chase Bank as a subsidiary
- 7. Manufacturers Hanover Trust* merged with Chemical Bank in 1991
- 8. Chase Manhattan Bank*– purchased by Chemical Bank in 1996
- 9. Chemical Bank* took on the name Chase Manhattan Bank after acquiring Chase Manhattan Bank in 1996
- 10. First Chicago* after bad-loan-loss problems in 1970s and 1990s, merged with Banc One Corporation in 1994; Banc One merged with Chase in 2004.

11. Wells Fargo National Bank

Source: The 11 TBTF banks were cited as such by Conover (1984) and named by Carrington (1984). The two internal boxes indicate 1984 TBTF banks that were later merged into other members of the 1984 TBTF bank list. The eight banks considered to be money-center banks (FDIC 1997, Vol. 1, page 202) are designated by an asterisk (*).

The Shadow Financial Regulatory Committee

- The S&L crisis crystallized a moral-hazard attack by Kane, Kaufman, others, on excessive regulation of banking markets.
 - A public-choice theoretic, Chicago School call for discipline by enhancing competition: let "market-driven change" open new possibilities, and provide market discipline via bank runs
 - The SFRC came into existence in 1986, with an agenda of overturning geographic and product-market restrictions (ultimately, the Glass-Steagall Act)
- SFRC's great triumph was the 1991 FDICIA, which replaced flatwith risk-based deposit insurance, and prevented the FDIC from assisting shareholders *except for* a "systemic risk exemption"
 - The US banking system had resolved its TBTF problem (George Kaufman 2002) [1980s forbearance/support for money-center banks involved in Latin American crisis was not considered]

Too-big-to-fail as policy design: Power hiding in plain sight

George Kaufman SBRC member (1995, p. 259):

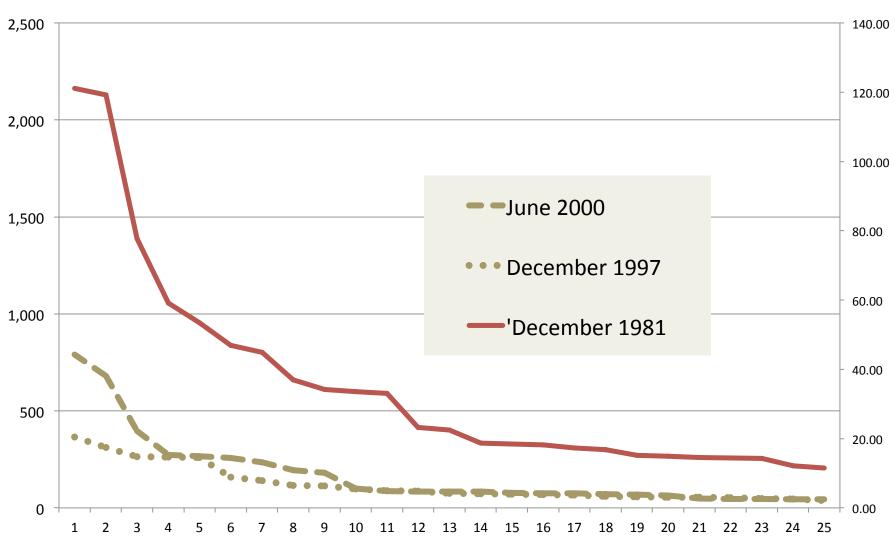
"The major source of both the instability in the U.S. banking system in the 1980s ... was ... the public .. sector. The government first created many of the underlying causes of the problem by forcing S&Ls to assume excessive interest rate risk exposure and preventing both S&Ls and banks from minimizing their credit risk exposure through optimal product and geographic diversification That is, the banking debacle was primarily an example of government failure rather than market failure."

• So the solution to a situation in which out-of-control banks have generated crisis, is to instruct government to regulate less.

Banking strategy in the 1990s: competition-bymerger-and-acquisition

- Banks shifted to retail markets: upscale retail banking, and expansion of higher-risk (predatory) lending and lower-end services
- Offloading of risk: from syndication to securitization, emergence of the "originate-and-distribute" approach to lending
- Meanwhile, contingent claims (derivatives) were expanding, many customized (over-the-counter), with no organized secondary markets.
 - The Commodity Futures Trading Commission tried to regulate, but was rebuffed by a 2000 law that required off-balance sheet positions to be evaluated under general "safety and soundness" provisions.
- Money-center banks faced competitive pressure on three fronts: from super-regional banks; from investment banks; and from other money-center banks. The solution: grow or be left behind. A game of thrones.

The 25 Largest US Commercial Banks, December 1981 - June 2000, rank-ordered by asset totals (\$B, FFIEC)



The TBTF Debate Reconsidered

- For SFRC, no success yet: deposit insurance remained. So no bank runs as expressions of consumer dissatisfaction with their banks.
- Another view, by Kane, was that government officials should be "specifically accountable for delivering and pricing safety-net benefits fairly and efficiently."
- Meanwhile, continued mergers and the Gramm-Leach-Bliley Act of 1999 (which ended Glass-Steagall) led to the creation of "large complex banking organizations" (LCBOs)
- A 2004 book by Stern and Feldman identified 31 LCBOs, and cited Drexel-Burnham (1998) and LTCM (2001), cases wherein extensive Federal Reserve intervention "supports our claim that fear of financial market instability drives government response to the failure of financial firms" (page 83).
- The Genie was out of the bottle.

Table 2: The Stern-Feldman 2004 List of "Large Complex Banking Organizations"

Banks Headquartered in the US 1. Citicorp 2. JP Morgan Chase 10. Bank One Corp Merged with JP Morgan Chase on July 1, 2004 3. Bank of America Merged with BankAmerica in 2004 14. FleetBoston Financial Corp 33. Countrywide Financial Corp. Purchased by BankAmerica in January 2008 9. Wells Fargo 8. Wachovia Corporation Purchased by Wells Fargo on October 3, 2008 13. MetLife 15. US Bankcorp 18. SunTrust Banks 23. Bank of New York Company 28. Mellon Financial Corporation Merged with Bank of New York on July 2, 2007 26. State Street Corporation 27. PNC Financial Services Group 20. National City Corporation Purchased by PNC Financial on Oct 24 2008 28. KeyCorp 32. Charles Schwab Corporation 34. Northern Trust Corporation Banks Headquartered Outside the US 4. Deutsche Bank AG 5. Mizuho Holdings 7. UBS AG 11. Credit Suisse Group 13. HSBC Holdings PLC 16. BNP Paribas SA 17. Mitsubishi Tokyo Financial Group 19. Societe Generale 21. Bank of Montreal Holdings 22. RBS Group PLC 6. Abn Amro Acquired in 2007 by RBS, Fortis, Santander 25. Toronto-Dominion Bank 29. Royal Bank of Canada 30. Bayerische Hypo-und Vereinsbank AG 31. Desdner Bank AG

Source: Stern and Feldman 2004, page 39. This list is in turn based on DeFerrari and Palmer 2001, p. 501.

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- 3. Bank of America
- 14. FleetBoston Financial Corp Merged with BankAmerica in 2004
- 33. Countrywide Financial Corp. Purchased by BankAmerica in January 2008
- 9. Wells Fargo
- 8. Wachovia Corporation Purchased by Wells Fargo on October 3, 2008
- 13. MetLife
- 15. US Bankcorp
- 18. SunTrust Banks
- 23. Bank of New York Company
- 28. Mellon Financial Corporation Merged with Bank of New York on July 2, 2007
- 26. State Street Corporation
- 27. PNC Financial Services Group
- 20. National City Corporation Purchased by PNC Financial on Oct 24 2008
- 28. KeyCorp
- 32. Charles Schwab Corporation
- 34. Northern Trust Corporation

- 28. KeyCorp
- 32. Charles Schwab Corporation
- 34. Northern Trust Corporation

Banks Headquartered Outside the US

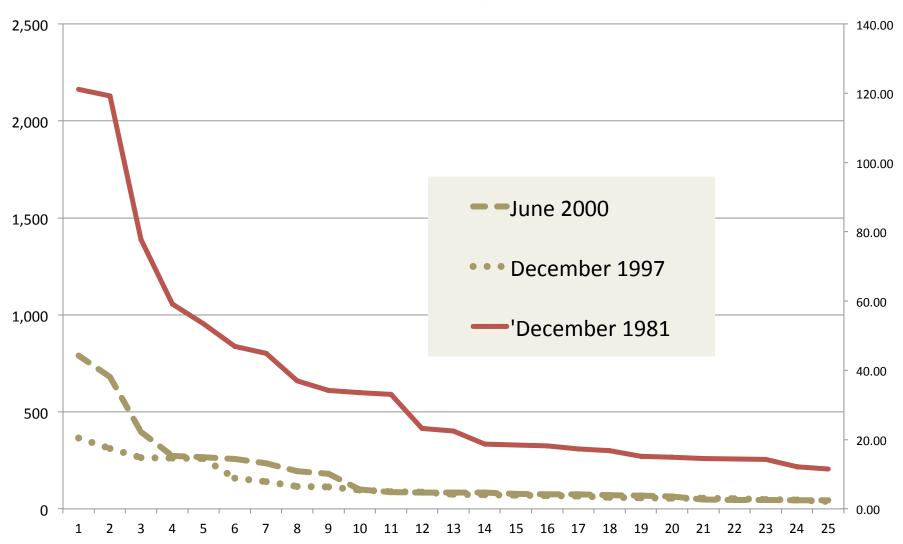
- 4. Deutsche Bank AG
- 5. Mizuho Holdings
- 7. UBS AG
- 11. Credit Suisse Group
- 13. HSBC Holdings PLC
- 16. BNP Paribas SA
- 17. Mitsubishi Tokyo Financial Group
- 19. Societe Generale
- 21. Bank of Montreal Holdings
- 22. RBS Group PLC
- 6. Abn Amro

Acquired in 2007 by RBS, Fortis, Santander

- 25. Toronto-Dominion Bank
- 29. Royal Bank of Canada
- 30. Bayerische Hypo-und Vereinsbank AG
- 31. Desdner Bank AG

Source: Stern and Feldman 2004, page 39. This list is in turn based on DeFerrari and Palmer 2001, p. 501.

The 25 Largest US Commercial Banks, December 1981 - June 2000, rank-ordered by asset totals (\$B, FFIEC)



The 25 Largest US Commercial Banks, June 2000 - June 2008, rank-ordered by asset totals (\$B, FFIEC)

