BUSINESS TRENDS

Week05: A global economy out of balance: The road to the crisis

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GLOBAL TURNING POINTS

for Business and Society

A Global Economy Out of Balance

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Learning Outcome

At the end of the session, the students will understand how inequality across and within countries, post social and political problems in developed and developing countries alike.

Is The World Flat?

Why do Florida and Ghemawat criticize the argument that the world is flat?

A Drama in Three Acts

- Act I: The implosion of U.S. financial markets, 2007-2008.
- Act II: The global spread, 2008-2009.
- Act III: Sovereign debt crises, 2010-.

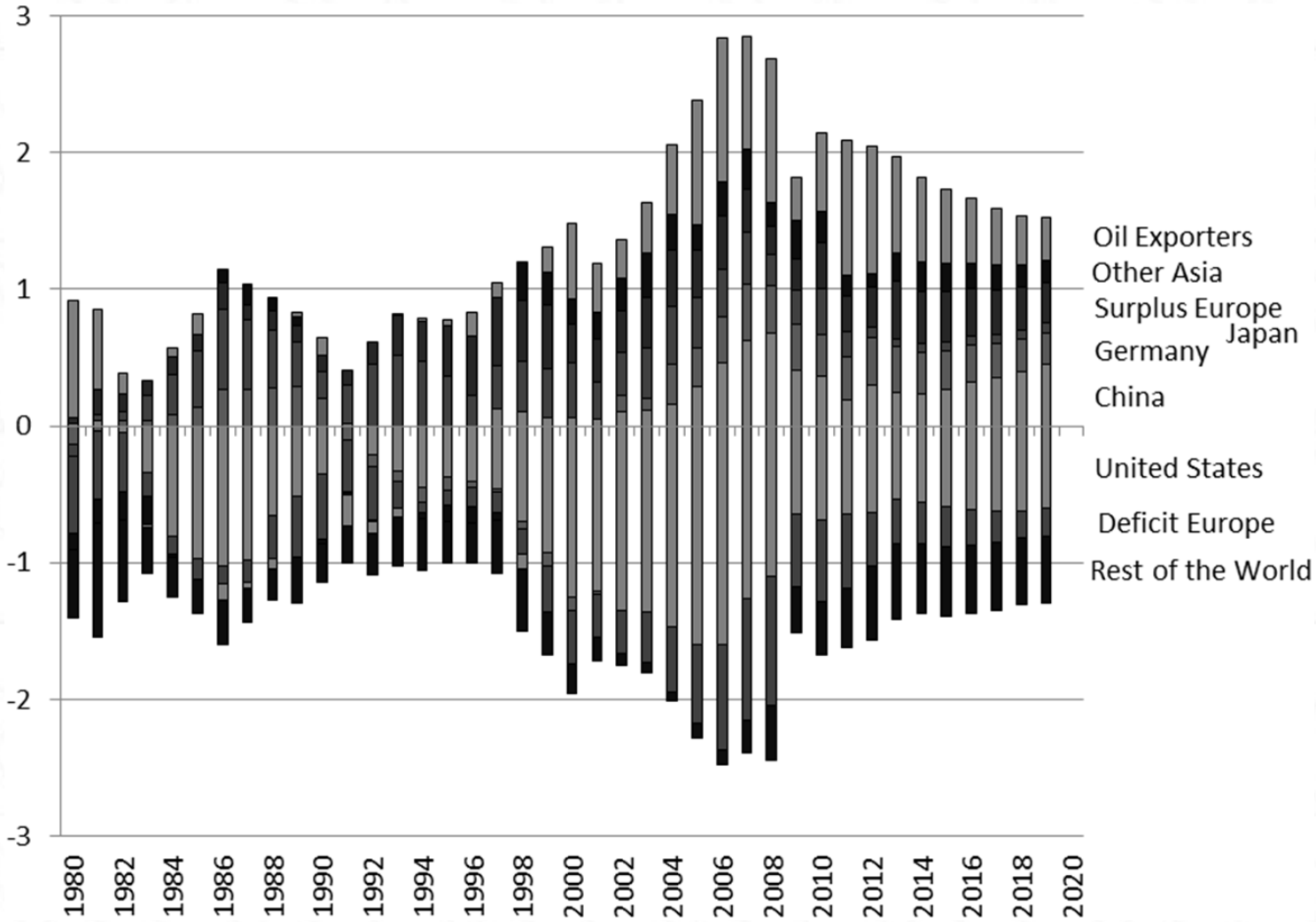
1. Monetary Policy

- Low interest rates 2001-2006:
  - Equity bubble.
  - Real-estate bubble.
- Greenspan failed to curb asset-price inflation: supposedly technocratic & independent, but in reality charismatic and subject to political pressure ("It's the economy stupid" again in the 2004 election, as in 1992).
- Massive emerging-market savings helped keep interest rates down (role of the IMF in 1997-99).

Two Basic Considerations

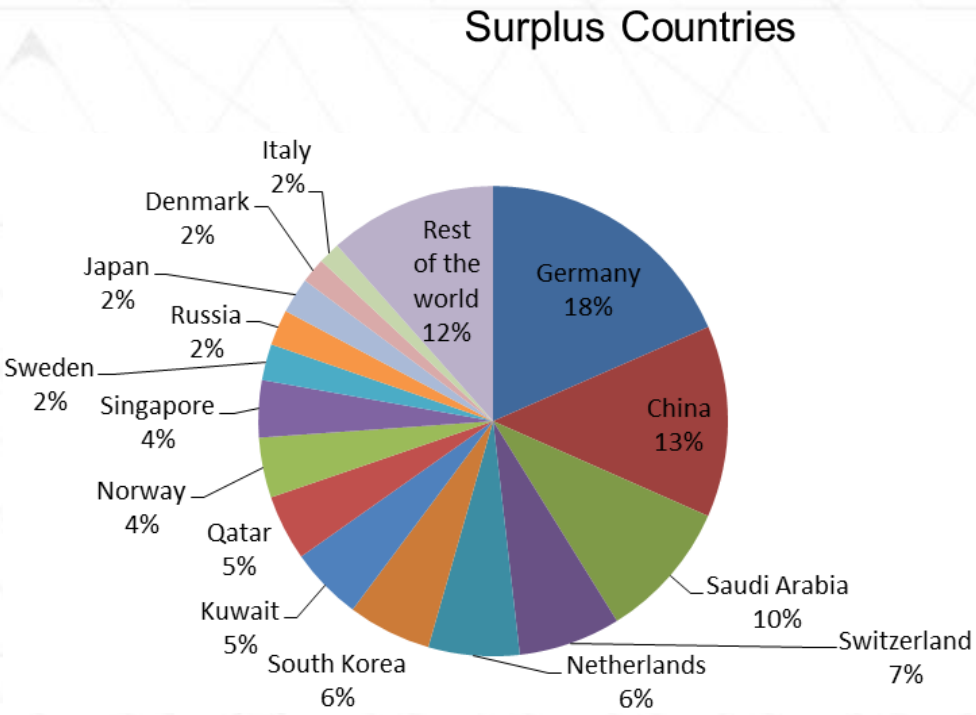
- If a country exports more than what it imports, it's a **surplus** country.
- If it exports then than what it imports, it's a **deficit** country.
- If one country runs a surplus, that necessarily means that at least one other country runs a deficit. This is only true in the absence of inter-planetary trade.

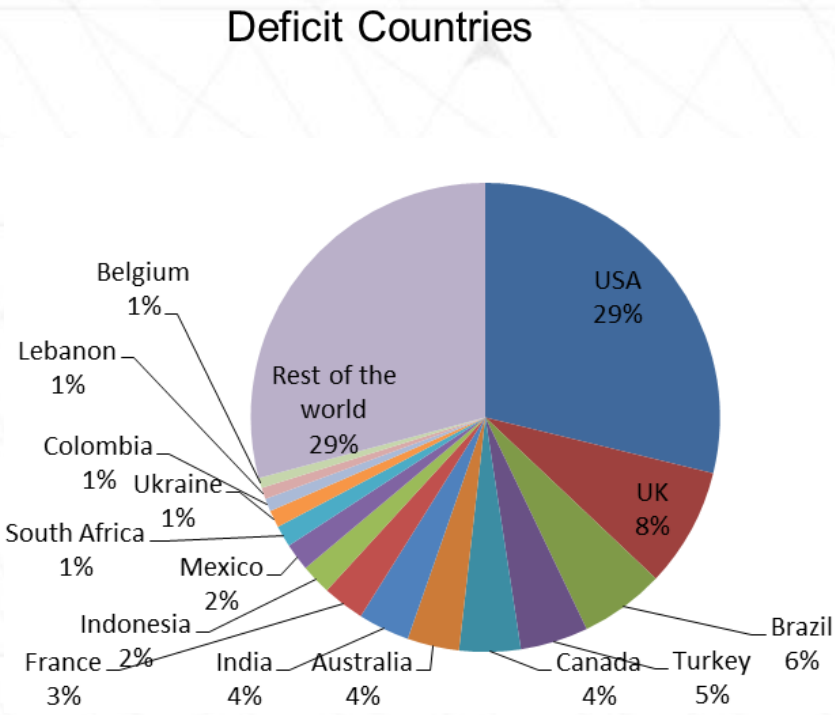
Current Account Imbalances (% Of World GDP)



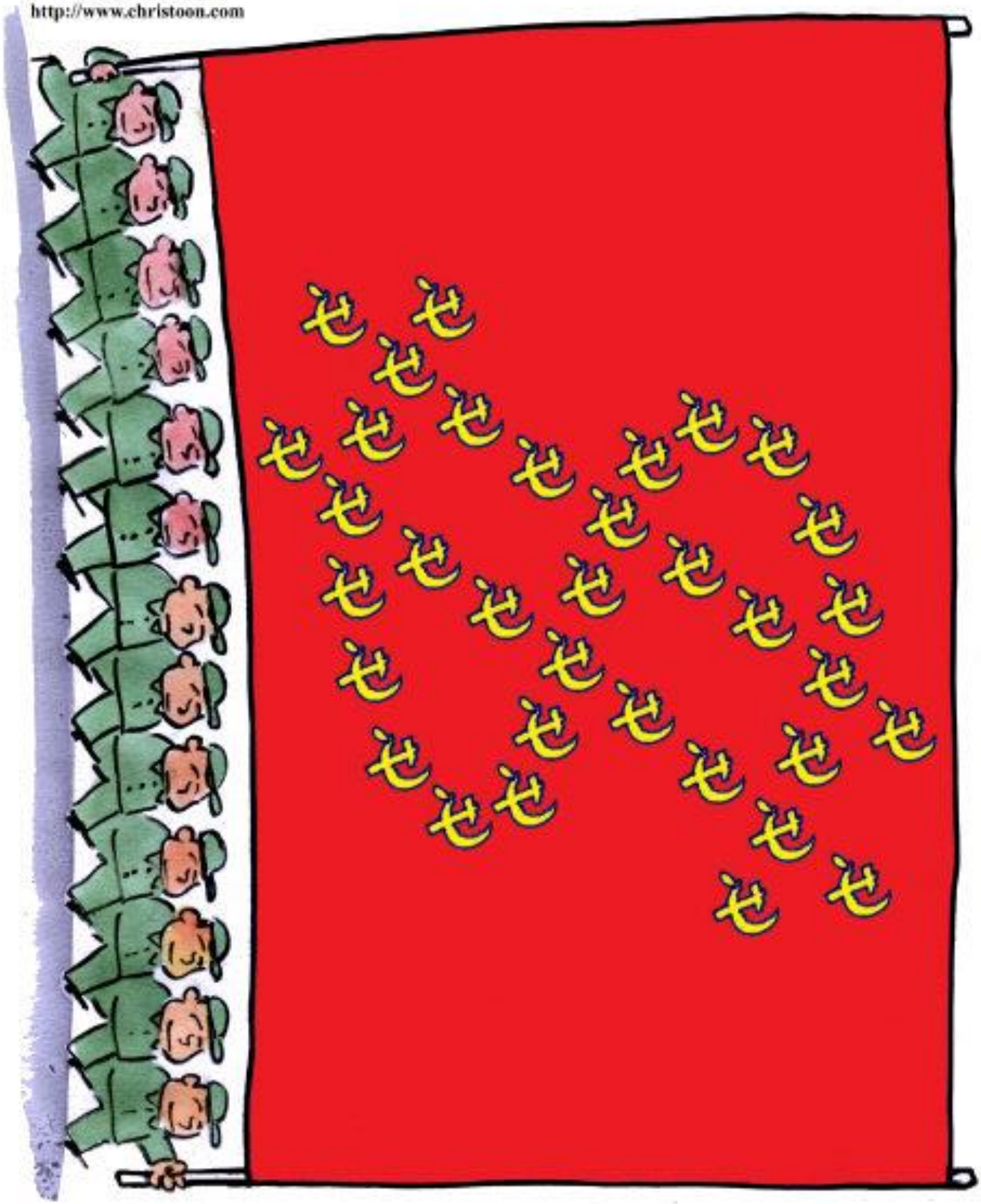
Mauro F. Guillén. Data from the IMF, *Global Economic Outlook.*

Current Accounts, 2013



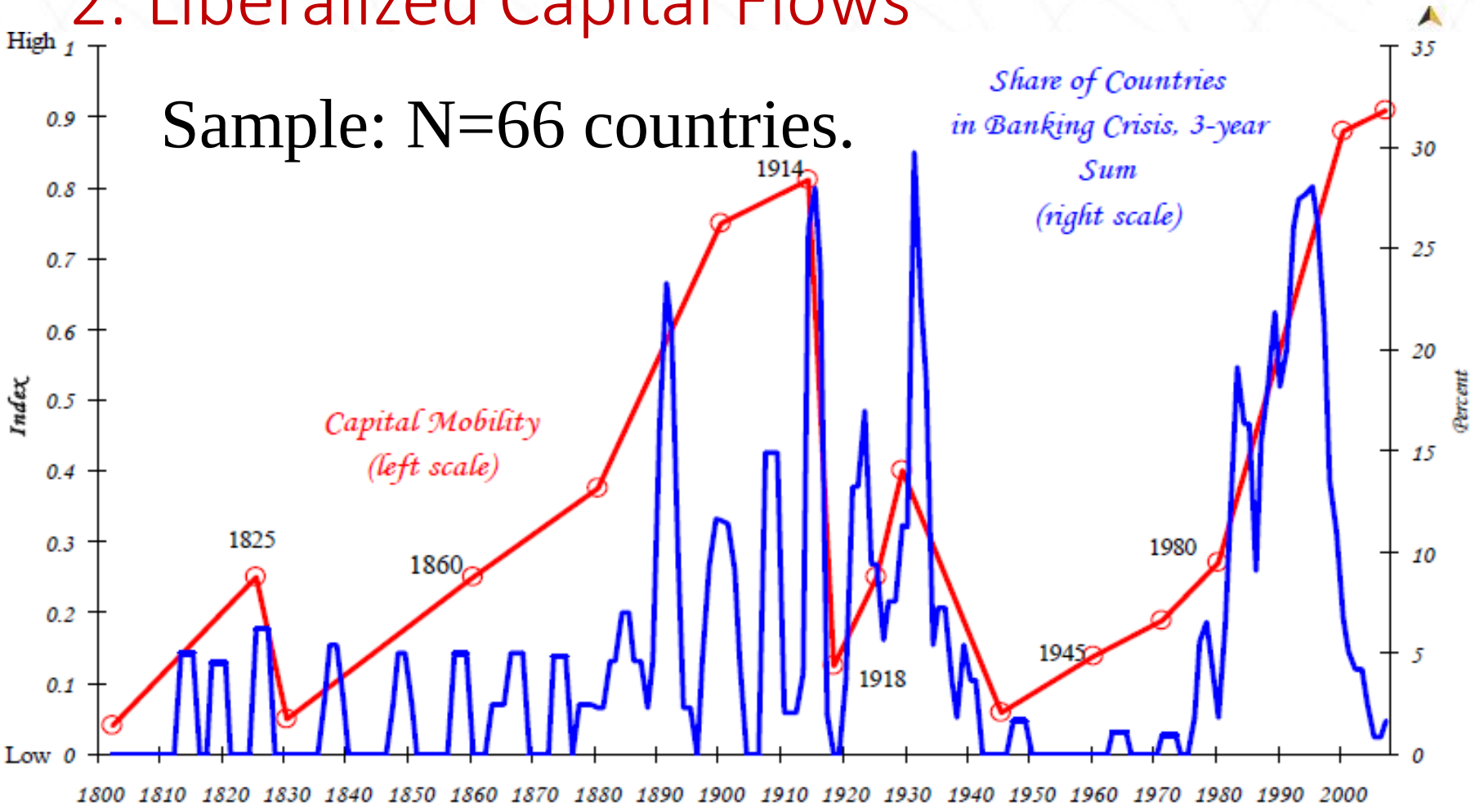


Mauro F. Guillén. Source of the data: World Development Indicators.



2. Liberalized Capital Flows

Sample: N=66 countries.



Sources: Bordo et al. (2001), Caprio et al. (2005), Kaminsky and Reinhart (1999), Obstfeld and Taylor (2004), and these authors.

Notes: As with external debt crises, sample size includes all countries, out of a total of sixty six listed in Table 1 that were independent states in the given year. On the right scale, we updated our favorite index of capital mobility, admittedly arbitrary, but a concise summary of complicated forces. The smooth red line shows the judgmental index of the extent of capital mobility given by Obstfeld and Taylor (2003), backcast from 1800 to 1859 using their same design principle.

Source: Carmen M. Reinhardt and Kenneth S. Rogoff, "This Time is Different." NBER WP 13882 (2008).

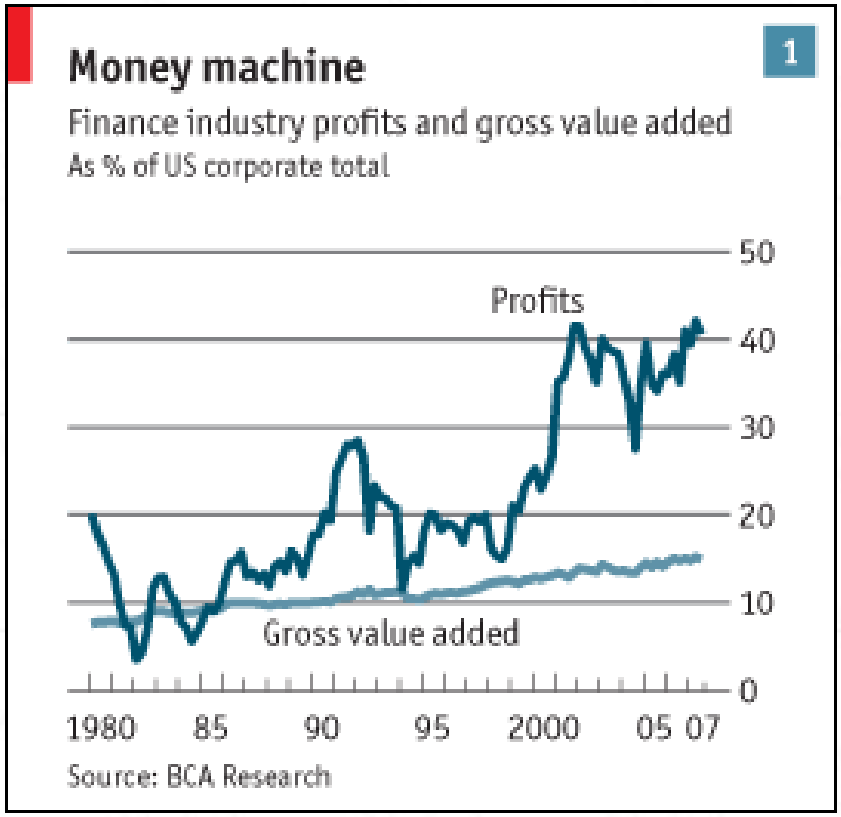
Selected Banking Crises

Country	Initial Year	% Nonperforming Loans at Peak	Gross Fiscal Cost (% GDP)	4-Year Output Loss (% GDP)
Spain	1977	n.a.	5.6	2.2
Egypt	1980	n.a.	38.1	n.a.
Chile	1981	35.6	42.9	92.4
Senegal	1988	50.0	17.0	32.6
USA	1988	4.1	3.7	4.1
Sweden	1991	13.0	3.6	0.0
India	1993	20.0	n.a.	3.1
Brazil	1994	16.0	13.2	0.0
Mexico	1994	18.9	19.3	4.2
Japan	1997	35.0	24.0	17.6
South Korea	1997	35.0	31.2	50.1
China	1998	20.0	18.0	36.8
Russia	1998	40.6	6.0	0.0
Turkey	2000	27.6	32.0	5.4
Argentina	2001	20.1	9.6	42.7

Source: Luc Laeven and Fabian Valencia, "Systemic Banking Crises: A New Database." IMF WP 08/224.

3. Financial Profits

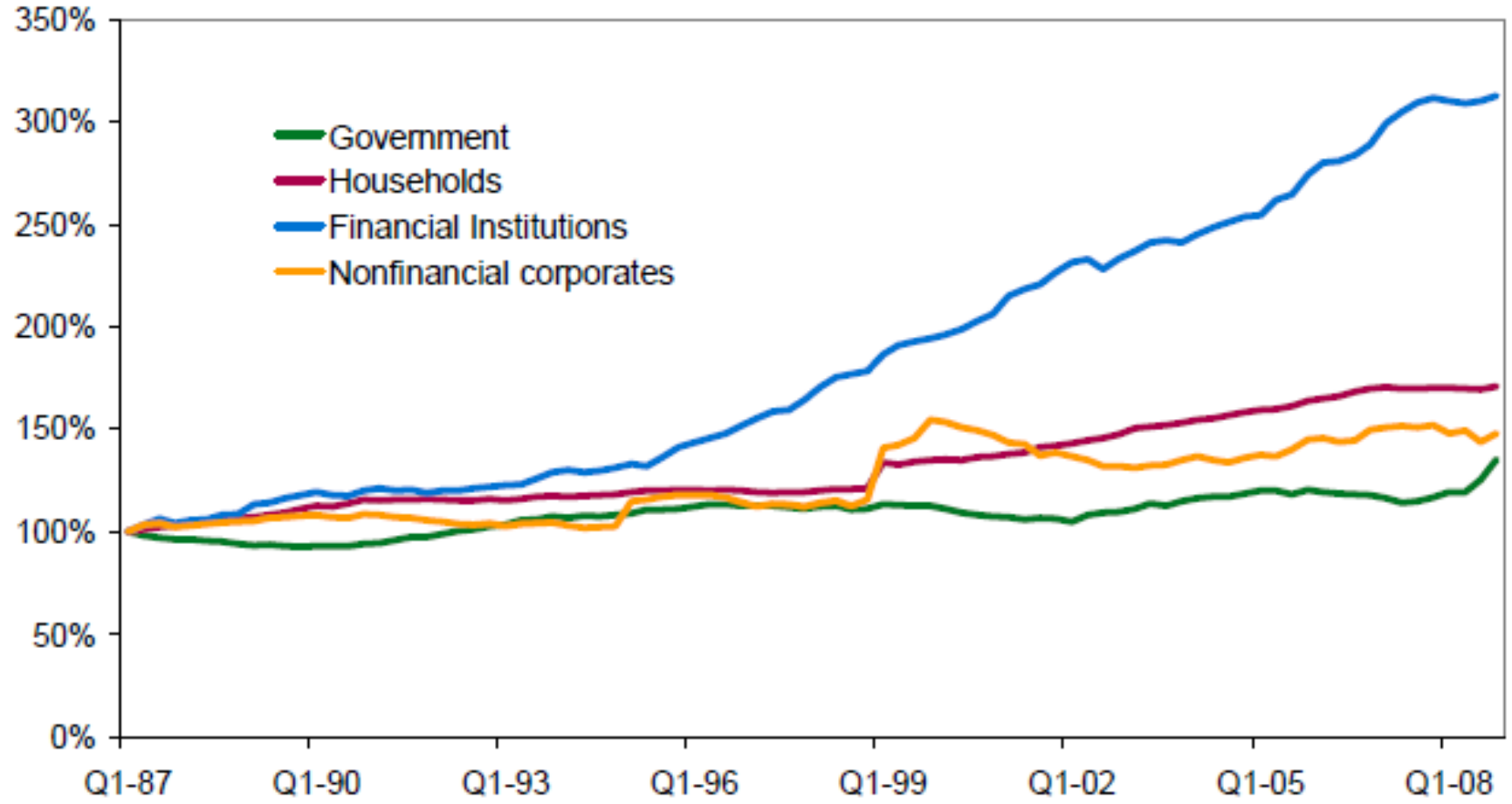
- Interest rate spreads: not attractive.
- Leverage: avoid “wasting capital.”
- Fees & commissions: new financial products.



Leverage

Figure 1.3. Ratio of Debt to GDP Among Select Advanced Economies

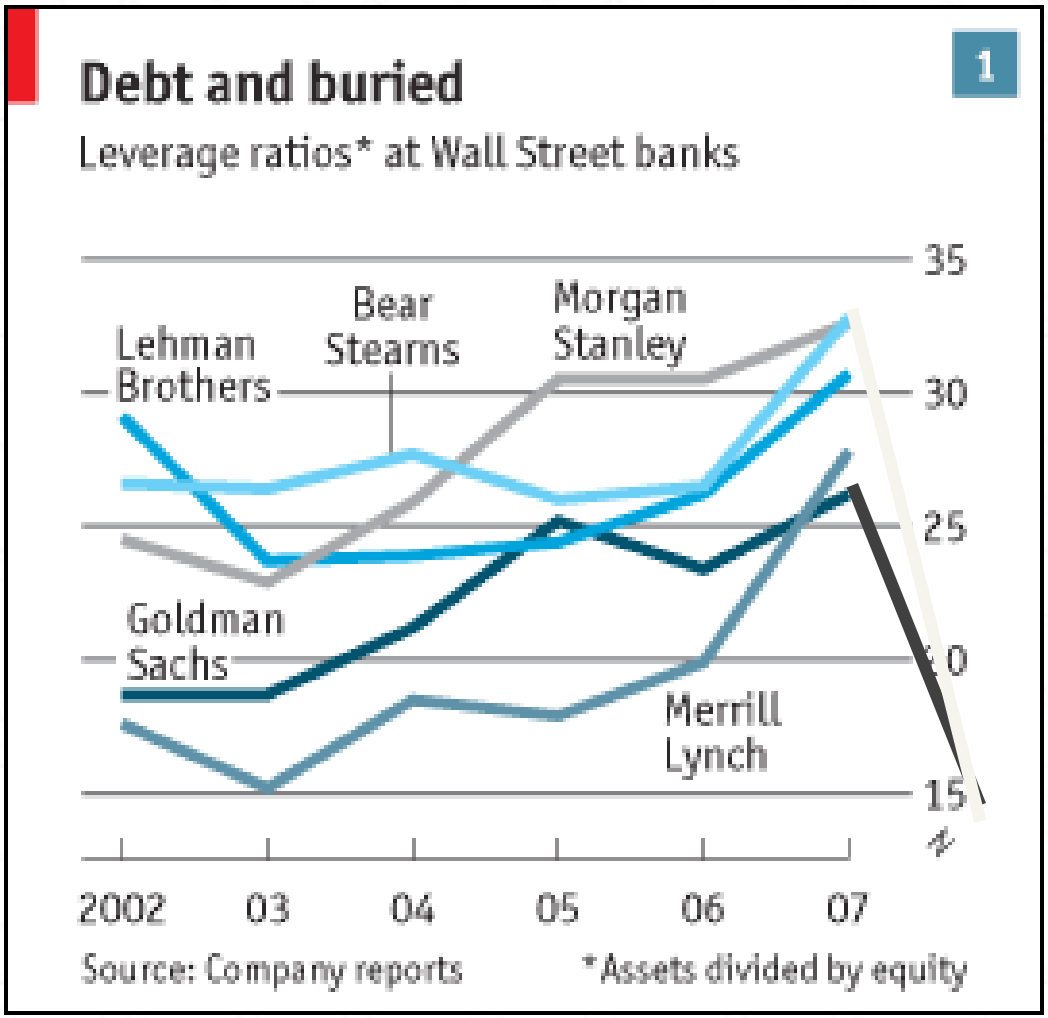
(In percent, GDP-weighted, 1987 = 100)



Sources: Bank of Japan; Bureau of Economic Analysis; Federal Reserve; Office of National Statistics; and IMF staff estimates.

Source: IMF Global Financial Stability Report, April 2009.

The Investment Banks



As of November 2008:

Goldman Sachs: 13.7

Morgan Stanley: 13.0

Source: Company 10-K filings.

4. Perverse Incentives

- Banks pressed to meet revenue or profit expectations.
- **Bonuses**:
  - Top management:
    - Bonuses linked to revenue and/or profit growth.
    - If paid in stock, top-management incentive to meet revenue & profit expectations (perversely reinforcing risky behavior).
  - Traders: competition for their talent justifies short-term incentives, which invite risk taking.
  - Borrowing against company stock to maintain lavish lifestyles.
- **Conflicts of interest**: Banks acting both as advisors to issuers, and as brokers to investors.
- **Moral hazard**: "too big to fail" or "too systemic to fail" reinforced by the 1998 bailout of LTCM.
- **Information asymmetries**: executives, traders, *quants*, directors, shareholders, bondholders, raters, insurers, regulators, etc.

Cuomo's Findings

APPENDIX A

TARP RECIPIENTS' 2008 BONUS CHART

Below is a chart of the original nine TARP recipients for 2008 highlighting each banks earnings/losses, bonus pool, number of employees, earnings per employee, bonus per employee, amount of TARP funds received and the amount of bonus payments in excess of $3 million, $2 million and $1 million.

	Earnings/ (Losses)	Bonus Pool	# of Employees	Earnings/ Employees	Bonus/ Employees	TARP	≥$3 M	≥$2 M	≥$1M
Bank of America	$4,000,000,000	$3,300,000,000	243,000	$16,461	$13,580	$45 B	28	65	172
Bank of New York Mellon	$1,400,000,000	$945,000,000	42,900	$32,634	$22,028	$3 B	12	22	74
Citigroup, Inc.	**($27,700,000,000)**	$5,330,000,000	322,800	**($85,812)**	$16,512	$45 B	124	176	738
Goldman Sachs Group	$2,322,000,000	$4,823,358,763	30,067	$77,228	$160,420	$10 B	212	391	953
J.P. Morgan Chase & Co.	$5,600,000,000	$8,693,000,000	224,961	$24,893	$38,642	$25 B	>200		1,626
Merrill Lynch	**($27,600,000,000)**	$3,600,000,000	59,000	**($467,797)**	$61,017	$10 B	149		696
Morgan Stanley	$1,707,000,000	$4,475,000,000	46,964	$36,347	$95,286	$10 B	101	189	428
State Street Corp.	$1,811,000,000	$469,970,000	28,475	$63,600	$16,505	$2 B	3	8	44
Wells Fargo & Co.*	**($42,933,000,000)**	$977,500,000	281,000	**($152,786)**	$3,479	$25 B	7	22	62

Source: Andrew M. Cuomo, "No Rhyme or Reason" (July 2009).

5. Financial Innovations

- Financial innovations cannot be fully protected from imitation by competitors.
- Innovations with derivatives:
  - Design new products or structures.
  - Use different underlying assets (subprime loans very attractive because of their high returns).
  - Create technology/expertise barriers (math models).
  - Mass produce them by using leverage and/or taking them off the books.
- New entrants: commercial banks, foreign banks, insurance companies, etc.
- Imitators often misunderstood the risks & limits of the innovation, and the underlying assumptions.

Innovations In Securitization

- Collateralized debt obligations (CDOs):
  - Cash CDOs: from bonds or other debt.
  - CDOs of other asset-backed securities.
  - CDOs squared.
  - Single-tranche CDOs.
  - Synthetic CDOs: from credit derivatives.

Innovations In Securitization (cont.)

- Issues:
  - Originators care about volume, not quality.
  - You need to be able to calculate default probabilities accurately:
    - For some underlying assets, historical data over several business cycles were lacking. Difficult to calculate correlations (they were often underestimated).
    - As you slice & dice multiple times, the computer models get overly complicated.
  - Profits depend on:
    - Mass producing the securities.
    - Moving assets off balance, to free up capital.
    - Rating the securities as high as possible for a given return level. Raters were under pressure to award high ratings. Practice of "ratings arbitrage," whereby originators would look for loopholes in the rating agencies' computer models.

Credit Derivatives

- Credit default swaps (CDSs):
  - The buyer makes a periodic payment.
  - The seller pays the buyer if an underlying debt instrument defaults (e.g. a loan or a bond).
- It's different than insurance because:
  - The buyer need not own the underlying instrument.
  - The seller need neither be a regulated insurer nor set aside enough capital.
  - The seller may not understand the risk inherent to the underlying instrument (e.g. AIG, Bear, Lehman).
  - The buyer may be fooled by a false sense of security & take on more risk → moral hazard is exacerbated.

Using CDSs To Price CDOs

- David Li's Gaussian copula function for calculating joint default probabilities (2000):

$$\Pr[T_A<1, T_B<1] = \Phi_2(\Phi^{-1}(F_A(1)), \Phi^{-1}(F_B(1)), \gamma)$$

- Instead of historical data on defaults, banks used prices of CDSs.
- It's essentially a shortcut. Gathering and analyzing historical data takes time and effort, and besides, they were not available.
- Correlations change frequently, but the formula reduced everything to one scalar.

Calculation Error?

	CDO Evaluator three-year default probability assumptions, as of June 2006 (percent)	Realized incidence of default, as of July 2009 (percent)
AAA	0.008	0.10
AA+	0.014	1.68
AA	0.042	8.16
AA-	0.053	12.03
A+	0.061	20.96
A	0.088	29.21
A-	0.118	36.65
BBB+	0.340	48.73
BBB	0.488	56.10
BBB-	0.881	66.67

Table 2 *CDO Evaluator* three-year default probability assumptions versus realized default rate of US subprime mortgage-backed securities issued from 2005 to 2007.

Sources: Adelson (2006a); Erturk and Gillis (2009).

Source: Donald MacKenzie, "The Credit Crisis as a Problem in the Sociology of Knowledge." University of Edinburgh, Working Paper, 2010.

Financial Times, 16 de septiembre de 2008 – The last gasp of the broker-dealer

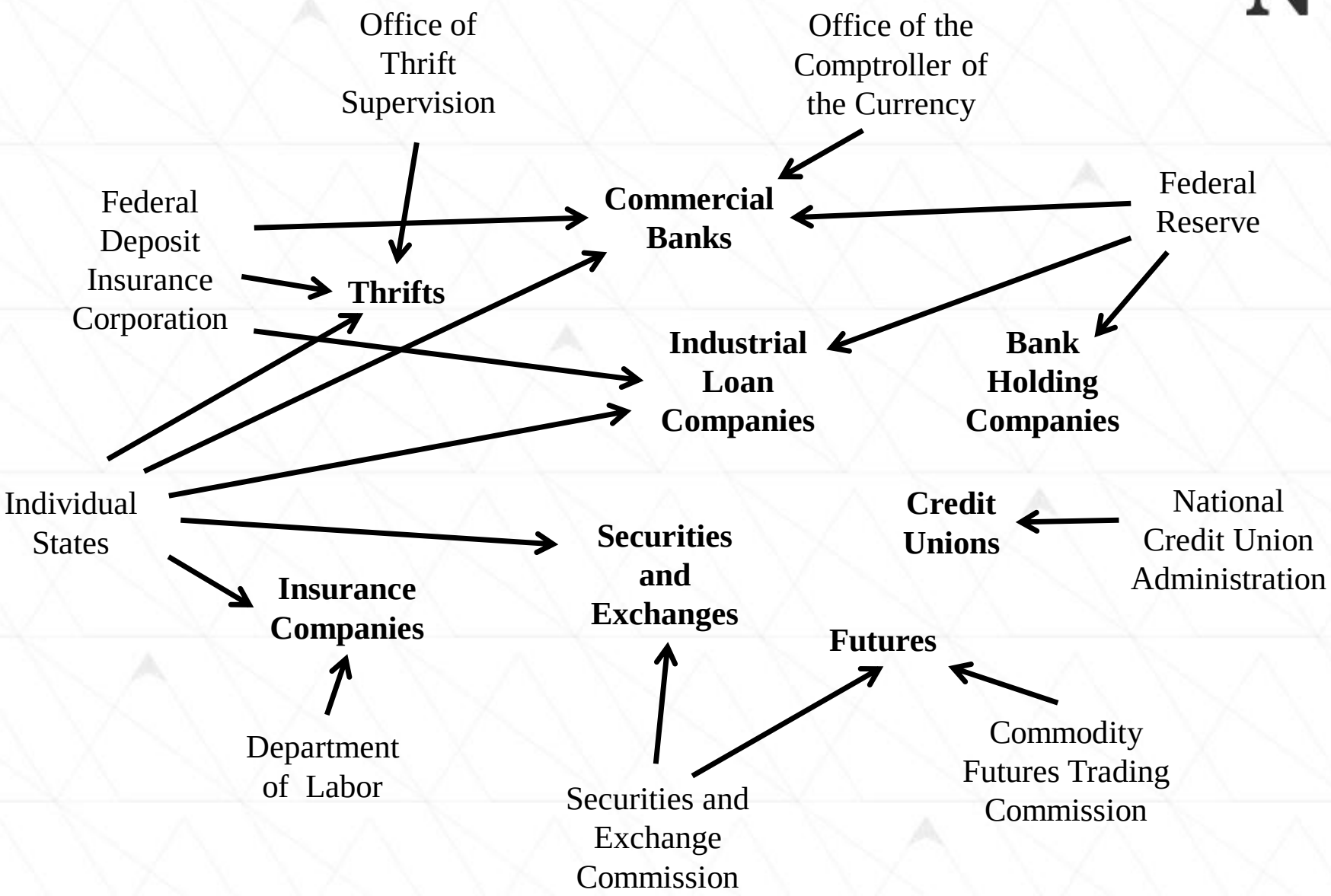
Regulatory Background

- 1986: London's Big Bang. (JP Morgan, Lehman and AIG financial products divisions located in London.)
- Early 1990s: Several anti-derivative bills in the U.S. shelved after intense industry lobbying.
- 1996: Fed says credit derivatives can be used to reduce reserves.
- 1999: Financial Services Modernization Act repeals Glass-Steagall Act of 1933.
  - AIG purchased a small S&L and chose to have its financial products division overseen by the Office of Thrift Supervision.

Regulatory Background (cont.)

- 2000: Commodity Futures Modernization Act states that swaps are neither futures nor securities.
- 2004: SEC lifts the leverage ratio control on investment banks.
- In other words:
  - Race to the bottom: pressures for less regulation.
  - Regulatory fragmentation: no agency had a 360° view.

U.S. Regulatory Balkanization



Source: *The New York Times*, 5 October 2008, Sunday Business Section, p. 9.

Nota Bene

- The mounting pile of mortgage debt provided precious raw material for derivatives.
- Subprime loans were especially attractive because of their high interest rates.
- As of December 2007:
  - Outstanding CDOs amounted to $3 to 4 trillion
  - Outstanding CDSs amounted to $35 to 45 trillion.
  - Outstanding OTC derivatives: $592 trillion (2009).
- Lack of transparency: No clearing house, only over-the-counter trading.
- In spite of 1999 Act, regulation is fragmented.

Regulation + Supervision

- We must, either
  - (1) Reduce the complexity of the system limiting product innovation, curbing diversification and lowering intra-organizational specialization; or
  - (2) Reduce coupling by limiting leverage and creating transparent markets for the new products.
- We are in favor of the second option.
- Regulatory agencies need to have enough personnel and resources to do their job.


TIME FOR QUESTIONS
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