

# Policy Debates: Financial Deregulation and Crisis From Asian Financial Crisis to Financial Tsunami

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# Merchant of Venice (Shakespeare 1596-98)

- Antonio: merchant of Venice, intermediary/loan guarantor
- Bassanio: loan demander, suitor to Portia - a beautiful rich heiress of Belmont
- Shylock: rich Jew, moneylender (loan supplier)
- Usury/Usance (interest/duration of loan): one pound of Antonio's flesh by a bond date
- Productivity of loan: gaining Portia's love, which is high risk but potentially high return
- When Antonio's ships were reported lost at sea, Antonio was at risk of losing a pound of flesh (individual crisis)



# Empirical Regularities

- Financial Market and Real Activity: correlation between FIR & output growth – is it positive empirically?
- conventional cross-country studies: (+)
  - in levels: Goldsmith (1969), McKinnon (1973)
  - in growth rates: King-Levine (1993) and many others
- country studies: Scotese-Wang (1997), US, UK, GER (+)
- problem:
  - Fernandez-Galetovic (1994), OECD (0)
  - DeGregorio-Guidotti (1995), Latin American (–)

# Empirical Regularities

1985 Per Capita Real GNP	High ( $< \$2,000$ )	Middle (\$3,000-\$6,000)	Low ( $> \$7,500$ )
FinDeep (M2/GNP)			
High ( $> 13\%$ )	U.S. France Switzerland	Chile Venezuela	Kenya Jamaica Honduras
Middle (8-12%)	Norway Germany Denmark	Malaysia Trinidad and Tobago	Liberia Uganda
Low ( $< 7\%$ )		Ireland Hungary Yugoslavia	Philippines Zimbabwe Indonesia

# Basic Framework : Becsi-Wang (1997)

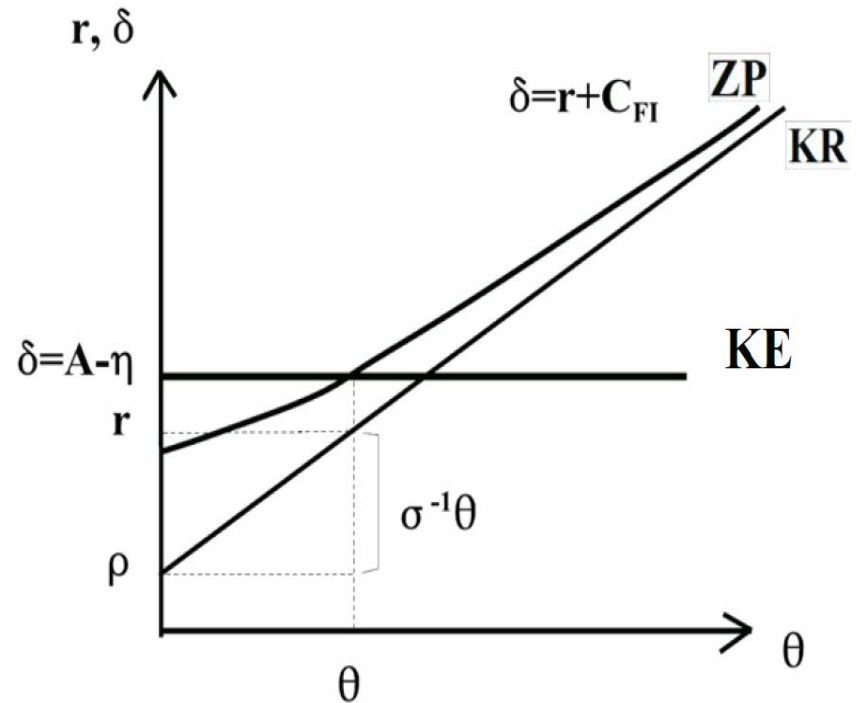
- Key: add an active banking sector to the standard AK-model of endogenous growth:
  - a key ingredient is to recognize the loan-deposit interest differential: with active banking, deposits are transformed into loans, but such operations are not costless
  - in the absence of reserve requirement, loanable funds equilibrium implies that deposits equal to loans, denoted by  $x$  (in real values)
  - the unit financial intermediation cost,  $C_{FI}$ , is decreasing as an economy develops (i.e.,  $dC_{FI}/d\theta < 0$ ; as documented empirically by Lehr-Wang 1999)

# Basic Framework

- Competitive banking (perfectly competitive or monopolistically competitive):
  - let the deposit and loan rates of interest be  $r$  and  $\delta$ , respectively
  - banks must reach zero profit:  $\text{profit} = \delta x - rx - C_{FI}x = 0$ , which gives the ZP locus,  $\delta = r + C_{FI}(\theta)$
  - the financial markup can be derived as:  $\mu = \delta - r = C_{FI}(\theta)$
- BGP equilibrium: along a BGP, the endogenous growth rate must be pinned down by capital efficiency (KE) and bank zero profit (ZP) which determines the loan rate  $\delta$ , whereas Keynes-Ramsey (KR) determines the deposit rate  $r$

# Main Findings

- production innovation:  $A \nearrow \Rightarrow \delta \nearrow, r \nearrow, \mu \searrow, \theta \nearrow$
- banking innovation:  $C_{FI} \searrow \Rightarrow \delta$  unchanged,  $r \nearrow, \mu \searrow, \theta \nearrow$
- Thus, an innovation on either side promotes growth and reduce financial markup, leading to:
  - $\text{corr}(\text{FIR}, \text{growth}) > 0$
  - $\text{corr}(\text{FIR}, \text{fin. markup}) < 0$



# Major Financial Crises Since 1900

- Argentina (1985, 1989, 1992, 1999-2001), Bolivia (1985), Brazil (1989), Chile (1982), Mexico (1982, 1987, 1994)
- Israel (1985), Russia (1998)
- U.S. (1907, 1929, 1984-85), Spain (1977), Norway (1987), Finland (1991), Sweden (1991), Japan (1992),
- **A group of Asian countries** (1997): Hong Kong, Indonesia, Korea, Malaysia, Philippines, Thailand
- Internet bubbles (2000-01)
- **Financial Tsunami** (2007-09)



# Duration/Depth of Financial Crises

- Duration in years
- Depth in % of cumulative GNP losses

Crises	1880-1913	1919-1939	1945-1971	1973-1997
Currency Crises	2.6 yrs 8.3%	1.9 yrs 14.2%	1.8 yrs 5.2%	2.1 yrs 5.9%
Banking Crises	2.3 yrs 8.4%	2.4 yrs 10.5%	0 yrs 0%	2.6 yrs 6.2%
Twin Crises	2.2 yrs 14.5%	2.7 yrs 15.8%	1.0 yrs 1.7%	3.8 yrs 18.6%

# The 1997 Asian Financial Crises

- This episode has puzzled many economists:
  - trade deficit as a poor predictor: Sacks-Tornell-Velasco (1996)
  - no high inflation associated with fiscal or exchange rate collapse crises except Indonesia (Chang-Velasco 1998, Burnstein-Eichenbaum-Rebelo 1998)
  - no excessive foreign debt except Indonesia and Philippines ( $> 1/2$  of GDP)
  - no severe illiquidity problem
- So, what are the underlying causes for the emergence of the crises?

# The 1997 Asian Financial Crises

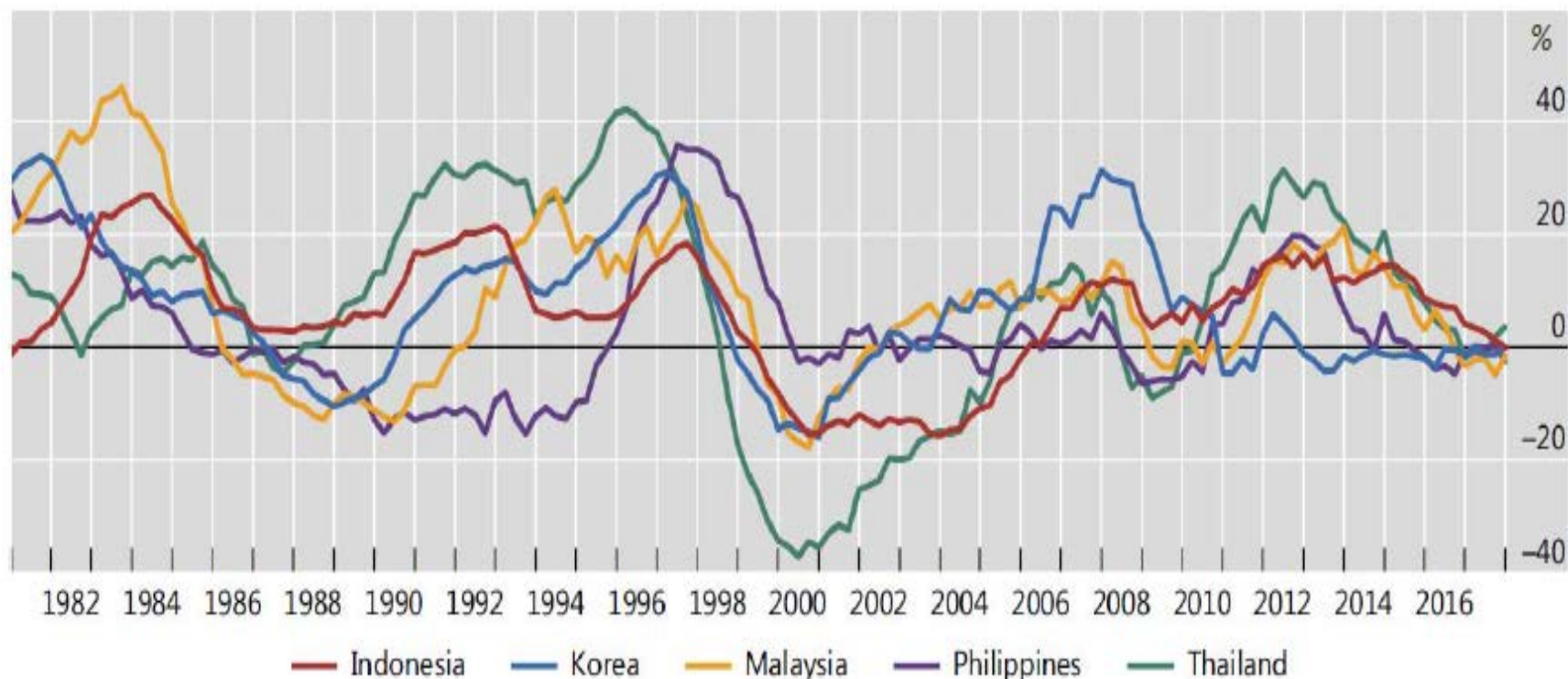
	CHI	TWN	SNG	HKG	THD	MAL	KOA	IND	PHN
<b>GDP Growth (%)</b>									
1990	9.19	7.60	7.27	4.97	8.41	8.42	9.13	6.95	-0.51
1995	10.55	6.00	8.75	4.40	8.68	9.46	8.94	8.22	4.76
1996	9.34	5.70	7.32	5.00	6.66	8.20	7.13	7.98	5.67
<b>Inflation</b>									
1990	6.40	3.60	3.40	11.60	5.70	4.40	9.30	9.40	18.70
1995	5.50	3.70	1.79	8.59	5.69	5.28	4.49	9.43	8.11
1996	6.20	3.10	1.32	5.98	5.85	3.56	4.96	8.03	8.41
<b>Savings/GDP</b>									
1990	37.8	29.3	45.3	35.6	32.2	29.1	35.7	31.8	17.9
1995	40.1	28.0	51.1	31.6	37.6	29.8	35.1	27.7	17.2
1996	42.1	28.0	51.3	32.0	33.6	37.0	33.3	28.7	18.3
<b>Trade Surplus/GDP</b>									
1990	3.02	6.70	9.45	8.40	-8.74	-2.27	-1.24	-4.40	-6.30
1995	1.02	1.90	17.93	-2.21	-9.00	-13.5	-1.91	-4.25	-5.06
1996	-0.34	5.20	16.26	0.58	-9.18	-5.99	-4.89	-3.41	-5.86
<b>Gov't Surplus/GDP</b>									
1990	-0.79	0.80	10.53	--	4.59	-3.10	-0.68	0.43	-3.47
1995	-1.02	0.40	14.27	--	3.01	0.89	0.30	2.29	0.52
1996	-0.82	0.20	12.13	--	4.13	0.77	-0.07	1.19	0.29
<b>Stock Index</b>									
1990	--	4350	1154	3024	612	505	696	417	651
1995	--	6933	2216	13451	831	1237	651	637	3170
1996	--	8187	1529	10722	372	594	376	401	1869
<b>Exchange Rate</b>									
1990	4.78	31.28	1.81	7.79	25.59	2.70	707.8	1843	24.31
1995	8.35	27.78	1.42	7.74	24.92	2.50	771.3	2249	25.71
1996	8.31	27.37	1.41	7.73	25.34	2.52	804.5	2342	26.22
<b>FRs in Mo of Imp.</b>									
1990	--	10.3	6.9	3.1	4.5	3.7	2.3	3.2	0.8
1995	--	11.2	6.2	3.1	5.4	3.1	2.5	2.9	2.3
1996	--	10.5	7.6	3.5	5.4	3.7	2.3	3.6	2.8

# The 1997 Asian Financial Crises

	CHI	TWN	SNG	HKG	THD	MAL	KOA	IND	PHN
<b>Bank Lending Boom Measure (%)</b>	9	14	16	14	51	27	17	12	152
<b>Non-performing Loan Percentage (%)</b>	14	4	4	4	19	16	16	17	14
<b>Foreign Debt to GDP Ratio</b>	1/6	<1%	<1%	<1%	1/3	2/5	1/7	>1/2	>3/5
<b>Short-term Debt to Total Debt Ratio (%)</b>	15	<10	<10	<10	30	20	25	15	15
<b>Short-term Debt to Foreign Reserve Ratio (%)</b>	30	<10	<10	<10	>50	25	>50	>120	>80
<b>Liability to Asset Ratio</b>	1.2	0.6	1.6	1.7	10.8	1.5	3.6	4.2	1.7

# The 1997 Asian Financial Crises

- Growth of of cross-border claims



Source: BIS, Avdjiev-Berger-Shin (2018)

# Lesson from the 1997 Asian Crises

- China survived with
  - international financial insulation
- Singapore survived with
  - high foreign reserves (difficult to attack)
  - low short-term debts (high liquidity)
  - less nonperforming lending (stable returns, less chance for bubbles)
- Taiwan survived with
  - high foreign reserves (difficult to attack)
  - low short-term debts (high liquidity)
  - less nonperforming lending (stable returns, less chance for bubbles)
  - low financial leverage (less speculative investments)

# Possible Explanation

- The possibility of **discrete equilibrium shifts** may be the most plausible explanation for sudden, large scale and wide spread financial crisis in high performing East Asian countries.
- Hwang-Jiang-Wang (2004): with interplays by financial intermediaries, large businesses (chaebols) and politicians,
  - there are **endogenous financial institutions and incentive mechanisms** adjusting in response to economic primitives
  - leading to **multiple equilibria**, one with collusion (no effort devoted to clean institutions) and another with no collusion
  - **high performers may suffer bad equilibrium**

# The 2008 Financial Tsunami

- Starting 2007
  - From US **subprime** mortgage (Fannie Mae/Freddie Mac)
  - To housing markets (residential/rental/commercial)
  - To insurance companies/banks (AIG/Citibank/BOA/BankUnited)
  - To **commodities** and **real sectors** (US auto companies, retails)
  - To the entire **world markets** (UK, Ireland, East Europe, all other developed and emerging markets)
- <https://www.youtube.com/watch?v=N9YLta5Tr2A>

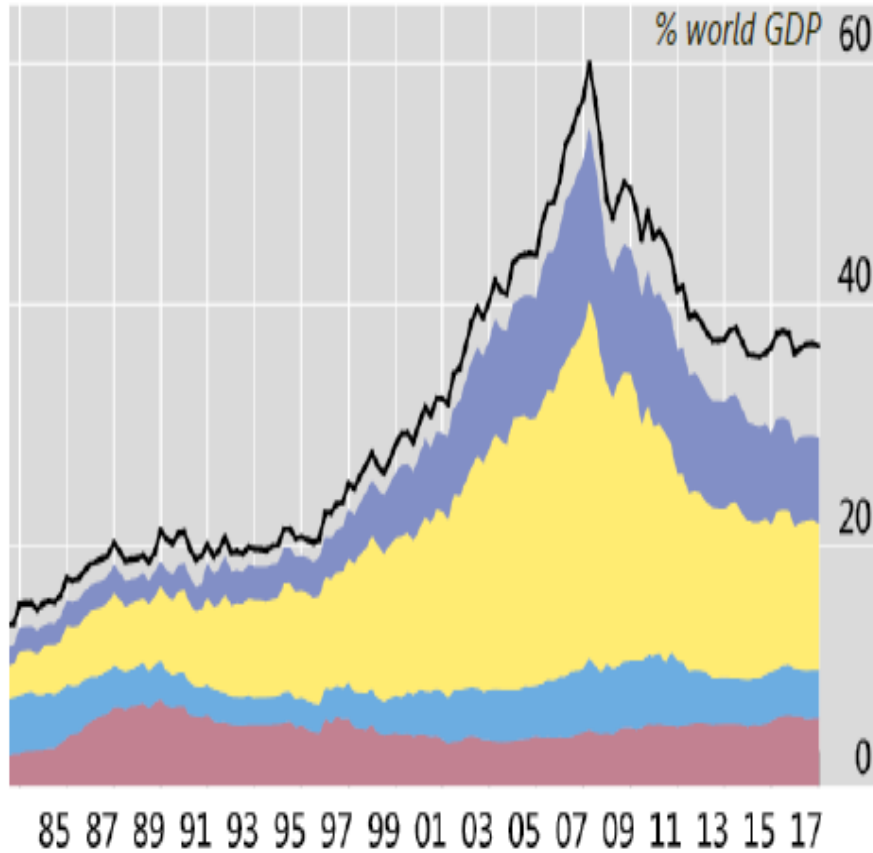


# Two Primary Causes

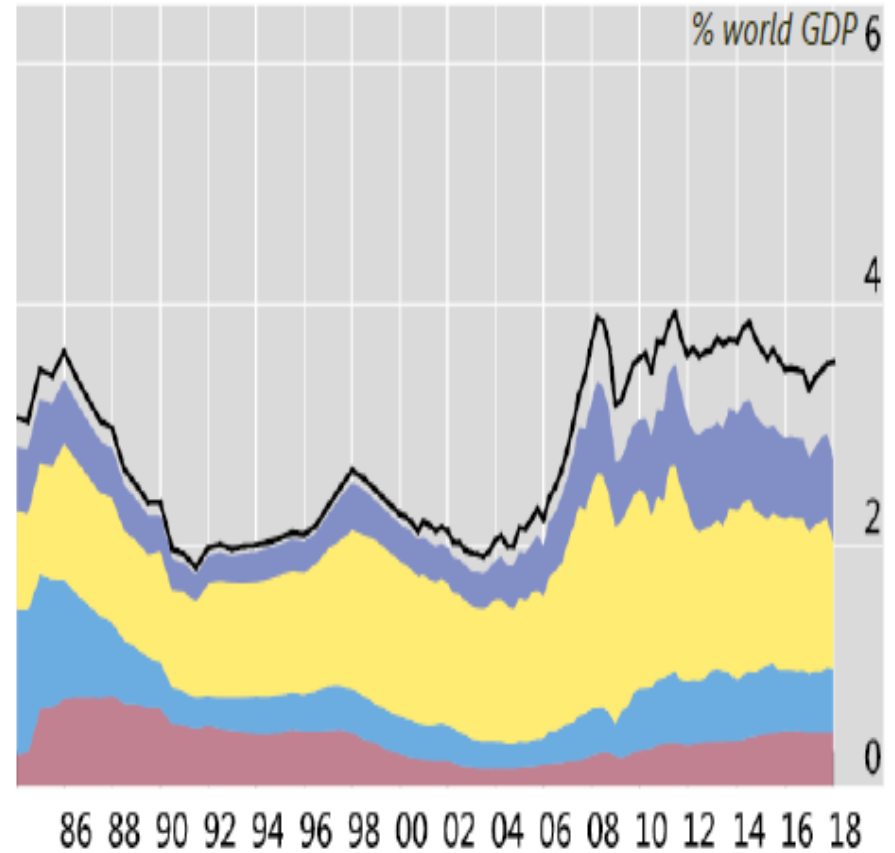
- Financial **deregulation** since 1992, causing:
  - **nonperforming subprime lending** by government sponsored Fannie Mae/Freddie Mac
  - **low liquidity** and **high financial leverage**
  - severe **moral hazard** problems **by lenders**
- New **financial derivatives**, causing
  - **difficulty in monitoring** (asset backed securities, credit default swaps, collateralized debt obligations)
  - **wide spread** of crises (65% of countries, compared to 30% during the 2000-01 crisis)
  - putting all **bad eggs** in one basket (Bear Stearns, Lehman Brothers, AIG)
- Any thing new? **Not really**, as already seen in 1997

# Global Trend in International Bank Lending

Global cross-border claims:



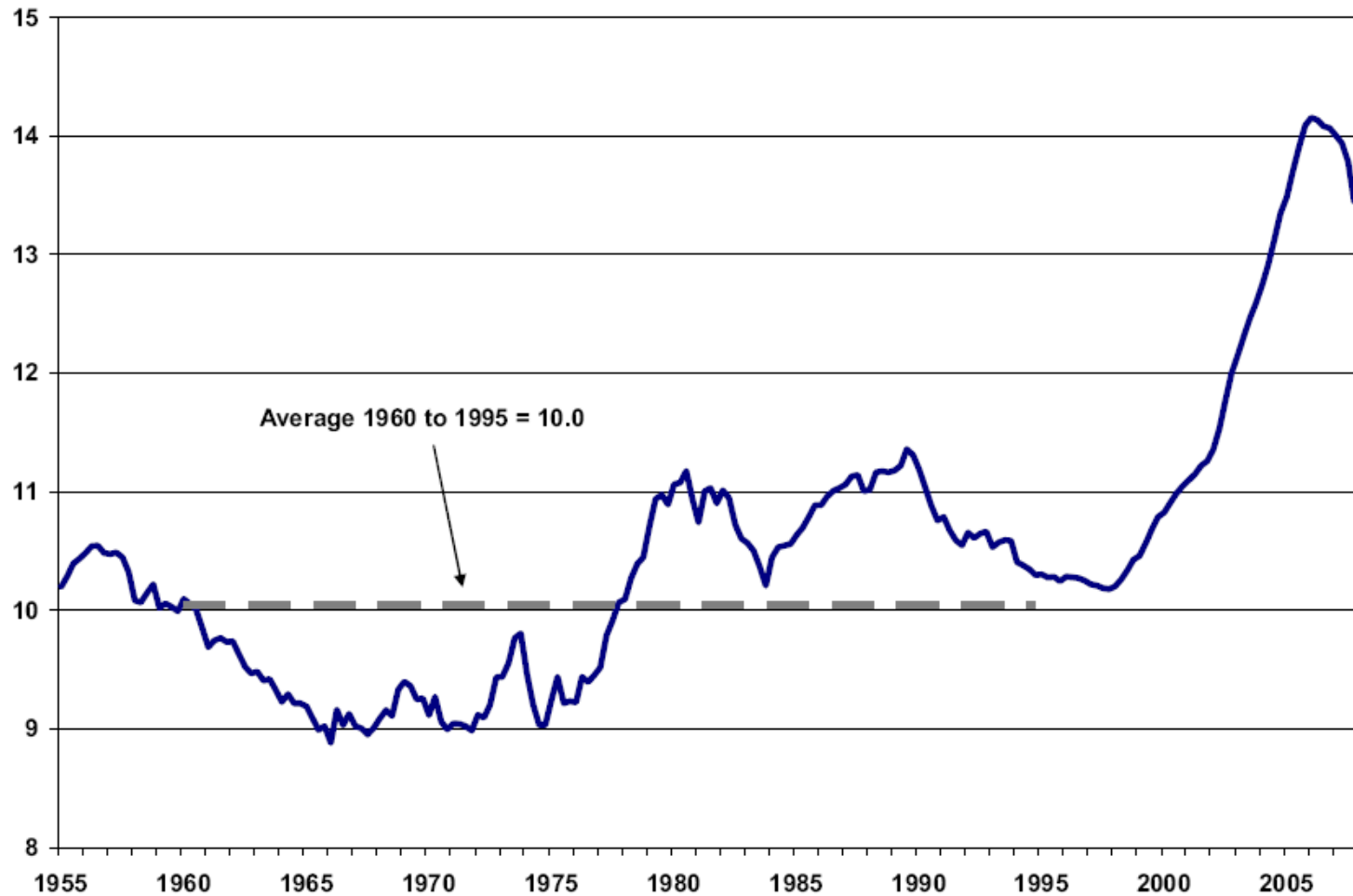
International claims on EMEs



Japanese banks US banks Euro area banks Other European banks — All reporting banks

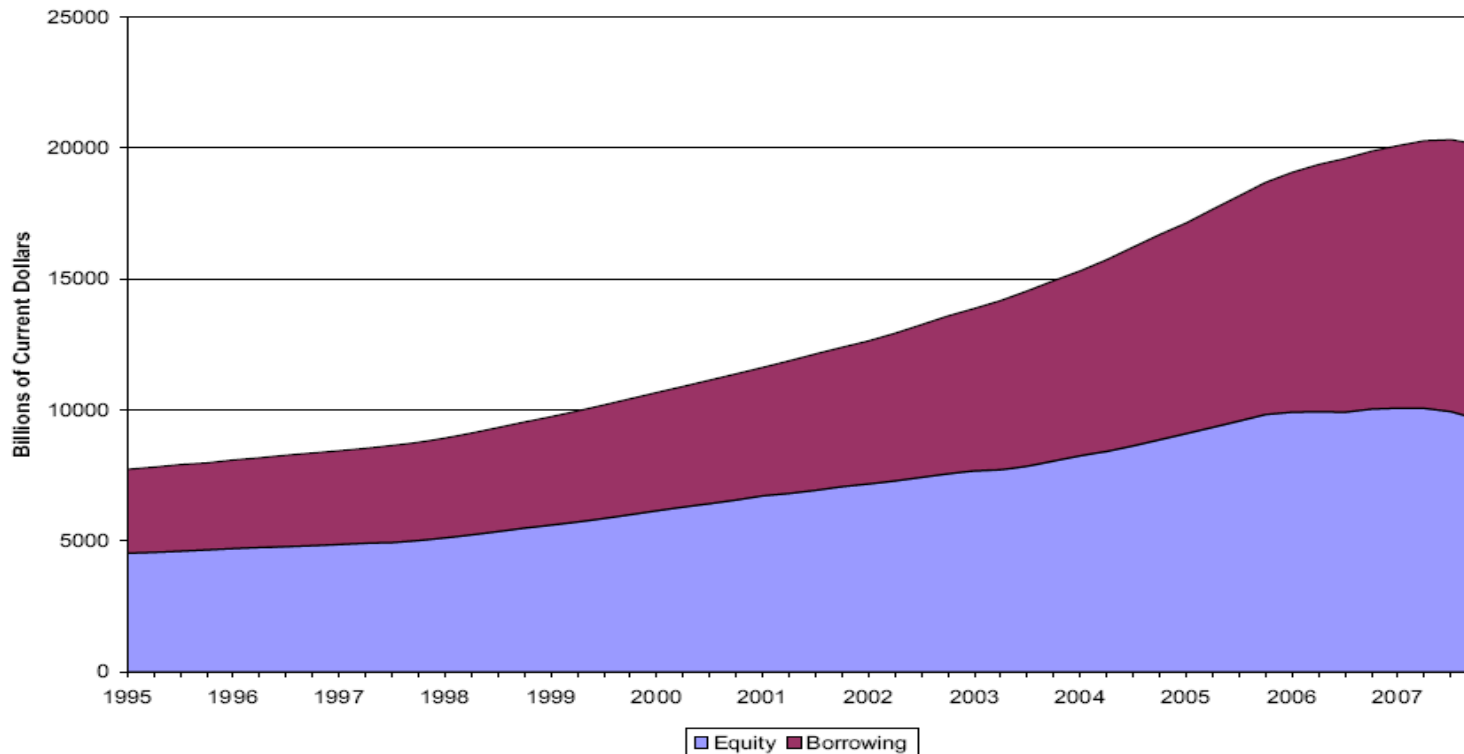
Source: IMF/BIS, Avdjiev-Berger-Shin (2018)

# Housing Price-Rent Ratio



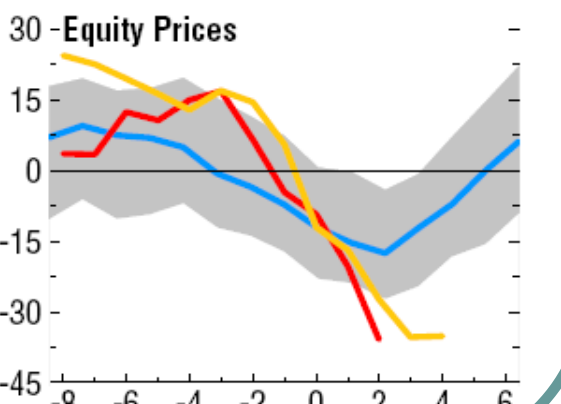
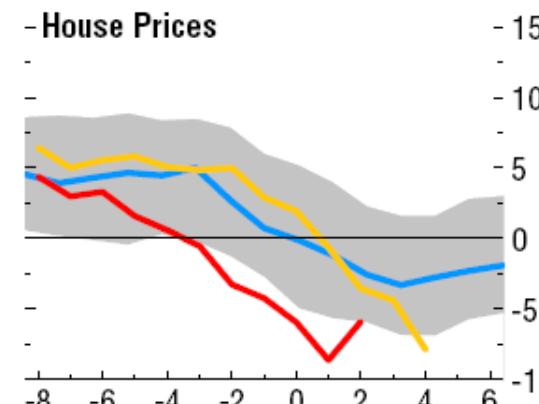
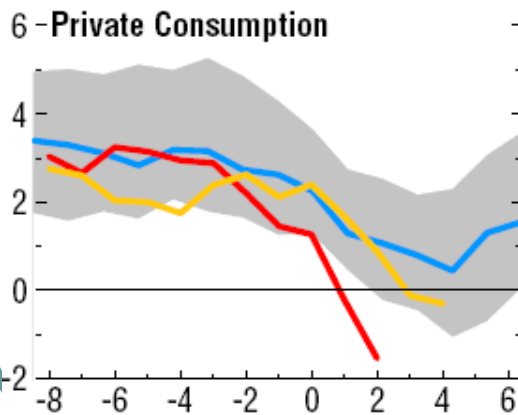
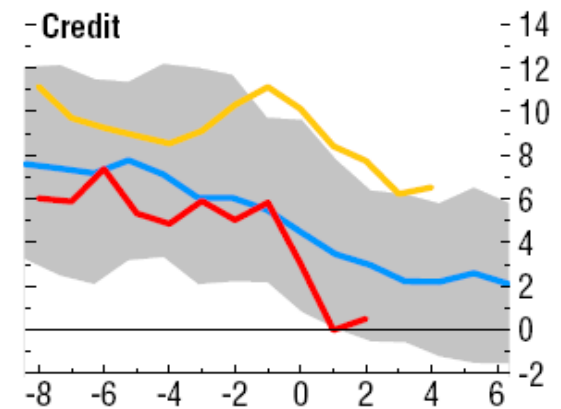
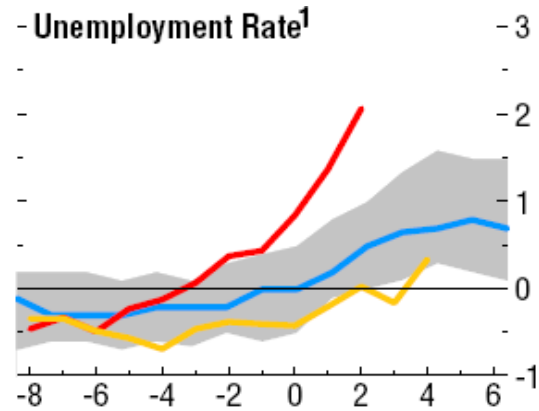
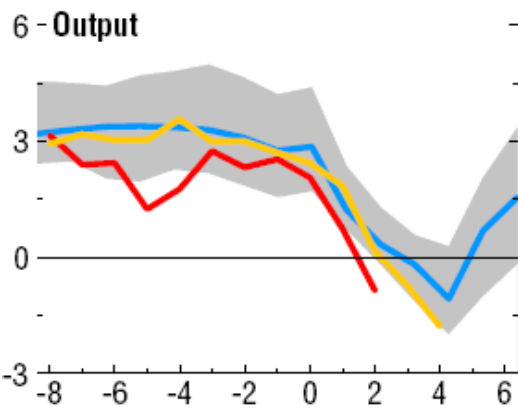
# Homeowner Leverage/Mortgage Quality

- Home owners had **higher leverage; low quality mortgage** rose from 9.7% in 2001 to 33.5% in 2006

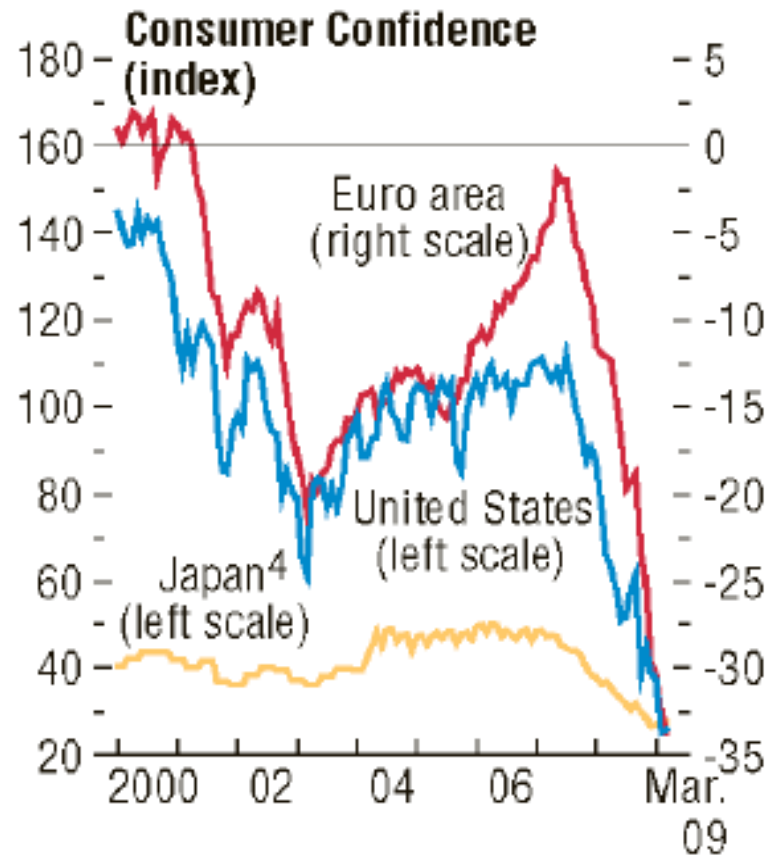


# Severity of Recessions Compared

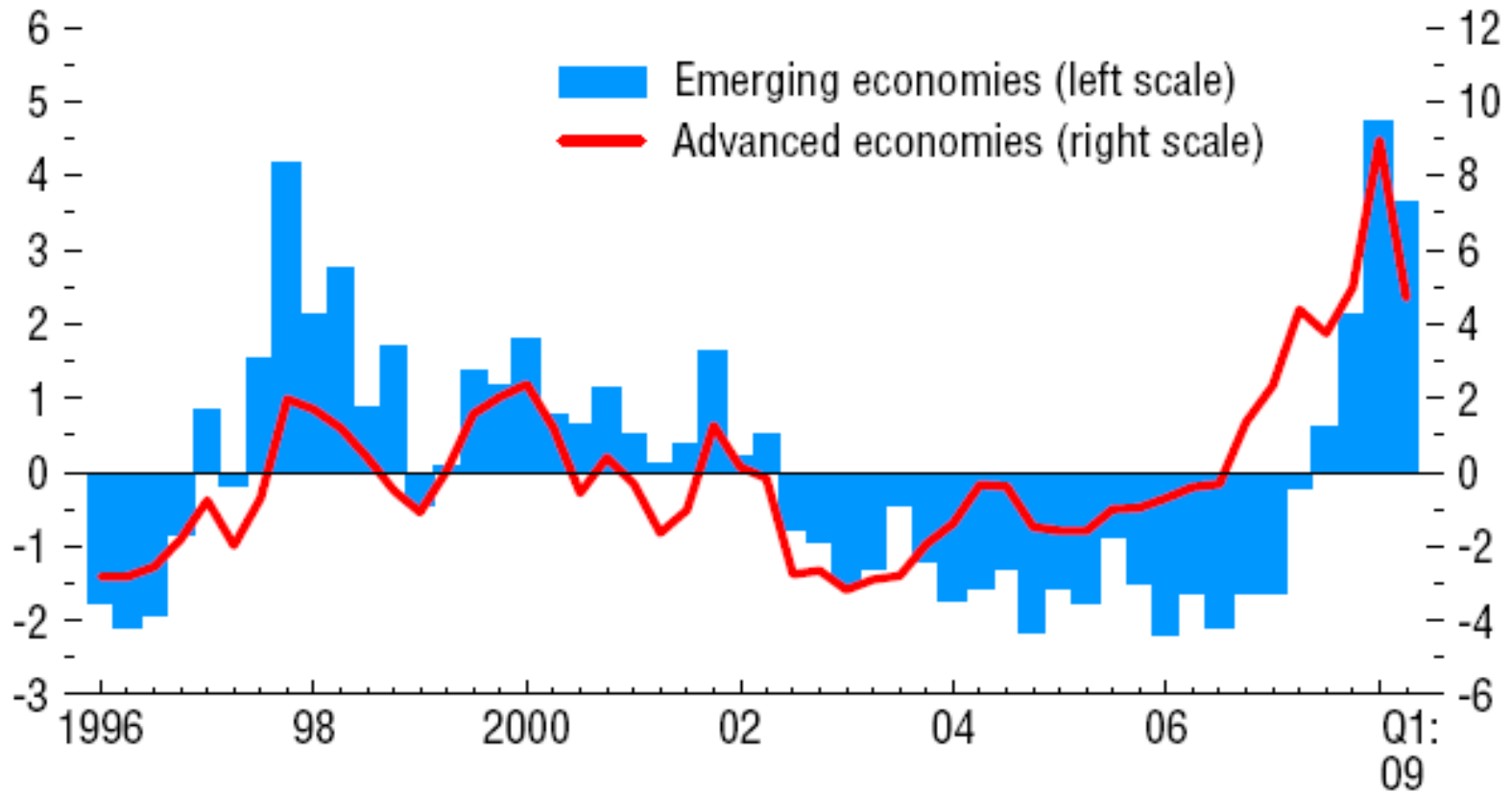
- **Current US** vs. **Current Others/Previous US**



# Managers and Consumers Indexes



# Financial Stress



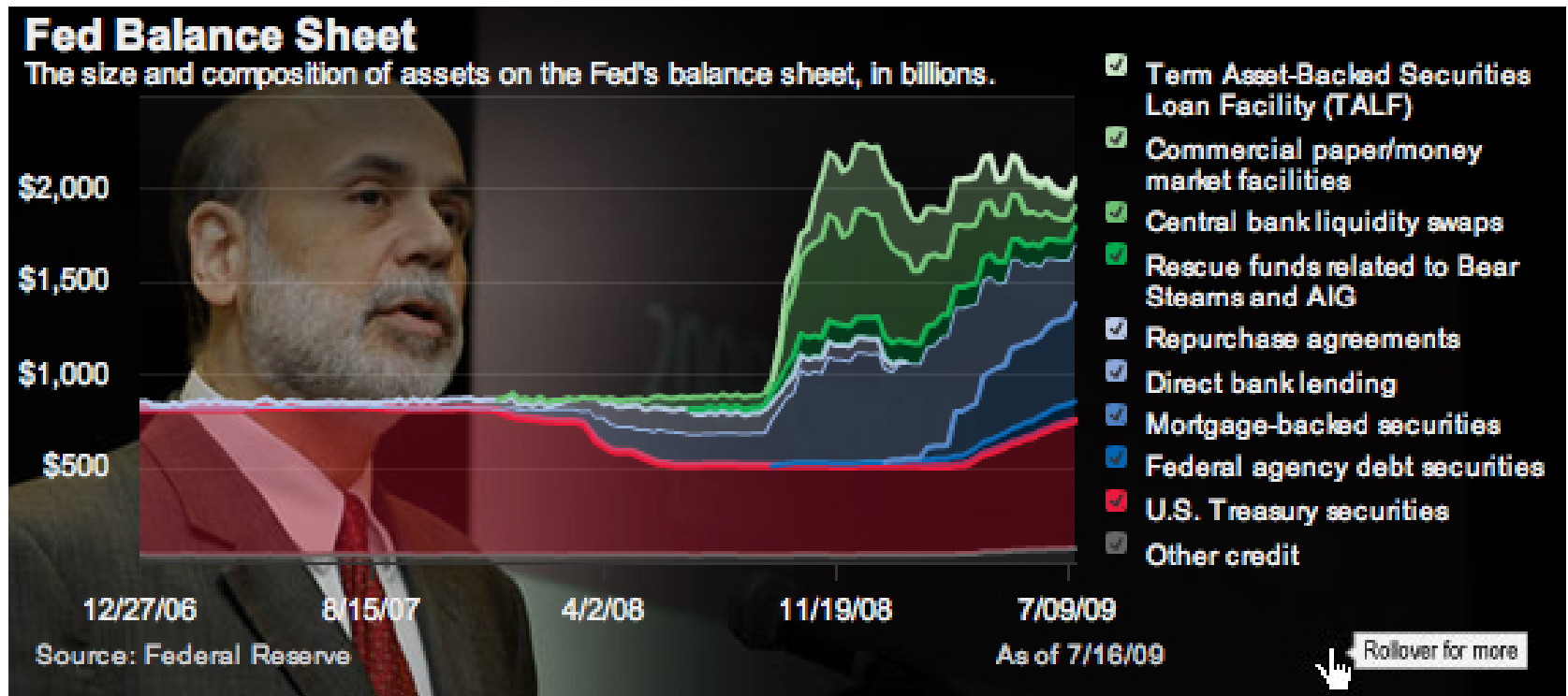
# Government Policy

	<b>Interest rate reduction</b>	<b>Govn't fund to banking system</b>	<b>Full deposit insurance</b>	<b>Loan/stock market intervention</b>	<b>Domestic demand stimulator</b>
<b>U.S.</b>	yes	yes		yes	yes
<b>Japan</b>	yes	yes		yes	yes
<b>China</b>	yes			yes	yes
<b>Hong Kong</b>	yes	yes	yes	yes	
<b>Korea</b>	yes	yes		yes	yes
<b>Singapore</b>			yes	yes	
<b>Taiwan</b>	yes		yes	yes	yes



# The Fed Intervention

- Ben Bernanke's Liquidity Injections:  
9/2008-3/2010



# The Treasury Intervention

- TARP (Troubled Assets Relief Program): Henry Paulson's Bailouts of \$700 Billion, 9/2007-6/2009

<b>AIG</b>	<b>69.8</b>	<b>Goldman Sachs</b>	<b>10</b>
<b>Citi</b>	<b>50</b>	<b>Morgan Stanley</b>	<b>10</b>
<b>BOA</b>	<b>45</b>	<b>3 Auto-makers</b>	<b>85.3</b>
<b>JP Morgan Chase</b>	<b>25</b>	<b>All Homeowners</b>	<b>50</b>
<b>Well Fargo</b>	<b>25</b>	<b>All Small Businesses</b>	<b>15</b>

# Lessons for the Financial Sector

- Financial innovation may **harm** than help
- Never put all **bad eggs** in one basket
- Restore the fundamentals:
  - risk pooling
  - liquidity management
  - effective monitoring
- Enforce **correct incentive** for managers, without heavy dependence on short-run sales performance

# Lessons for the Government

- Regulatory reform with **tighter and more decentralized financial regulations** and with more coherent **international cooperation**
- Heavy **tax on speculative activities**
- Enforced requirement for full **financial disclosure/transparency** and requirement for **liquidities**
- Heavy **penalty** on moral hazard behavior and excessive leverage or nonperforming lending
- Bail out only when it is necessary and when **there is bright future**

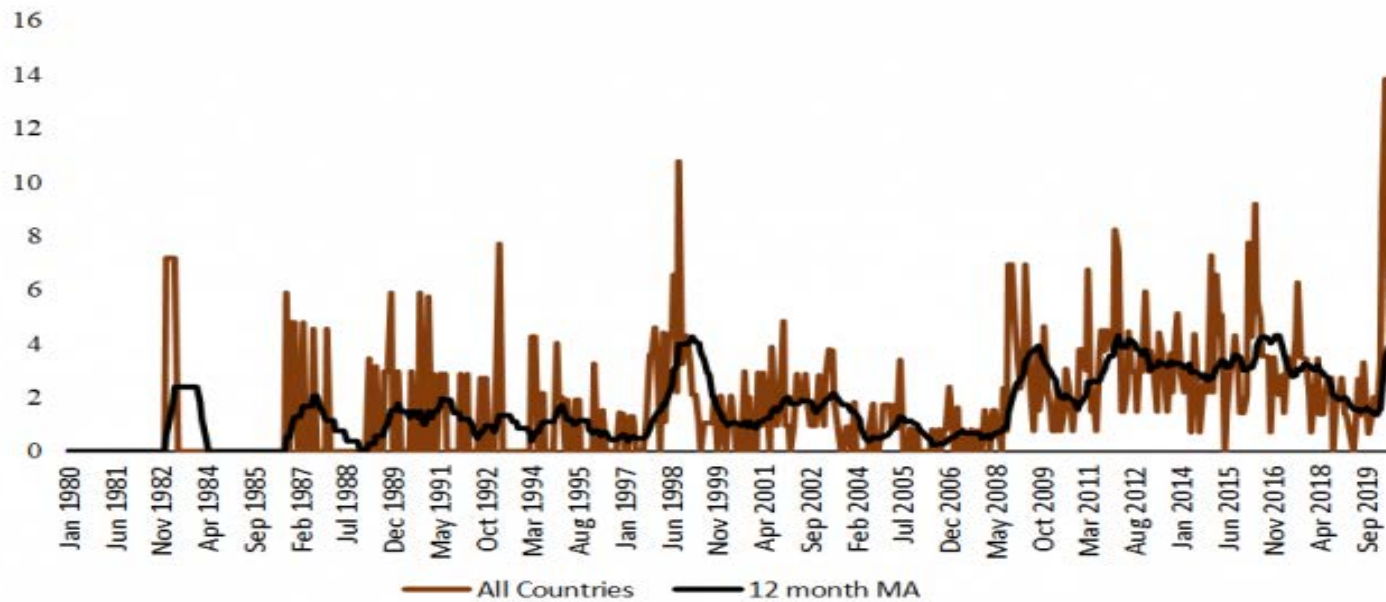
# Big Push or Big Crash

- The Financial Tsunami can be explained by interplays between financial institutions and **market participations**
- Becsi-Wang-Wynne (1999): There are market participation **externalities**
  - Production efficiency (PE) describes a positive relationship between market thickness and market returns
  - Bank break-even (BB)
    - Downward-sloped in normal circumstances where thicker markets require lower loan rates to break even
    - Upward-sloping when there are **strong** market participation externalities where higher loan rates => higher expected return => thicker markets
  - With upward-sloping BB, there can be co-existence of a **good equilibrium** (big push) and a **bad equilibrium** (big crash)

# Financial Crisis Again?

- Almost surely-Pandemic-caused “quiet financial crisis”

Share of Sovereign Credit Rating Downgrades, 1980:1 - 2020:11  
(in percent)



Source: Trading Economics (2020)

Notes: The figure shows the number of sovereign downgrades as a share of the total number of sovereigns rated in a given month.

- e.g., Evergrande Group (China)

# Current Economic Risks

- Pandemic induced uncertainty (see a comprehensive list of studies in by:
  - BFI [https://bfi.uchicago.edu/insights/all/?\\_topics=financial-markets](https://bfi.uchicago.edu/insights/all/?_topics=financial-markets)
  - HBS <https://www.hbs.edu/covid-19-business-impact/insights/economic-and-financial-impacts>
- Large government deficits (in the US as well as in many developed and developing countries)
- Unsettledness in EU and many countries
- Trade and possibly exchange rate wars
- Housing bubble
- Fintech bubble

# Restore New Financial Order I

- Financial Deregulation vs. Regulation
  - Free market access
  - Comprehensive information provision to investors and depositors (quasi Gurley-Shaw) with
    - Close monitoring
    - Adequate regulating
  - Establish shared financial system (à la Gurley-Shaw and Prescott)



# Restore New Financial Order II

- Activeness vs. Passiveness
  - Financial **stability** trumps financial innovation (à la Lucas): reduce the possibility of discrete shifts
  - Policy **transparency**: mitigate market participation externality effects
  - **Disciplined** liquidity provisions: limit hot money