The Rise and Fall of the U.S. Mortgage and Credit Markets

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Wednesday, April 29, 2009

11:00 AM - 12:15 PM

Moderator: Rick Newman

Chief Business Correspondent, *U.S. News & World Report*

Speakers:

James Barth, Senior Finance Fellow, Milken Institute; Lowder Eminent Scholar in Finance, Auburn University

Alan Boyce, CEO, Absalon; President, Adecoagro

Barry Eichengreen, George C. Pardee and Helen N. Pardee Professor of Economics and Political Science, University of California, Berkeley

Glenn Yago, Director of Capital Studies, Milken Institute

Overview *Factors that contributed to credit boom and bust*

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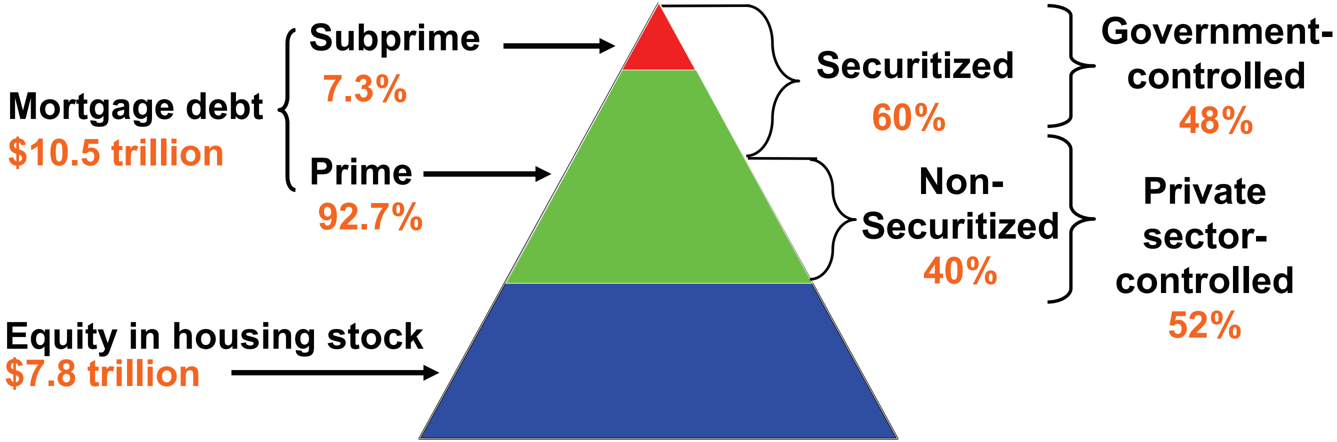
- **Lax monetary policy and global imbalances** led to low interest rates
- Reach for yield, reliance on **short-term wholesale funding** for **relatively illiquid assets**, **small cash buffers**, and **risky/substantial leverage**
- **Financial innovation,** such as securitization that weakened lending standards (e.g., mortgage originators) and credit default swaps that increased inter-connectivity (e.g., AIG), transferred risk broadly to others
- **Opacity** due to complexity of financial instruments (e.g., CDOs), riskier collateral for securities (e.g., subprime mortgages), heavy reliance on credit rating agencies, and over-the-counter trading of credit default swaps
- **Procyclicality of regulation** (capital requirements) and **mark-to-market accounting**, which contributed to forced asset sales and deleveraging
- **Lack of a procedure** to deal with deeply troubled big banks and non-bank financial institutions (too big to fail or too strategically important or too inter-connected)
- **Incentive/compensation system** that encouraged excessive risk taking, and poor corporate governance
- **Public policy**: gaps in regulatory structure and inconsistent asset management strategy
- **Flight to safety** due to uncertainty of asset values and solvency of financial institutions (hoarding of liquidity and/or calls for more collateral)

Overview of the housing market

Total value of housing stock = $18.3 trillion



Note: total residential and commercial mortgages = $14.6 trillion at year-end 2008.

Sources: Federal Reserve, Milken Institute.

The mortgage problem in perspective

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80 million houses

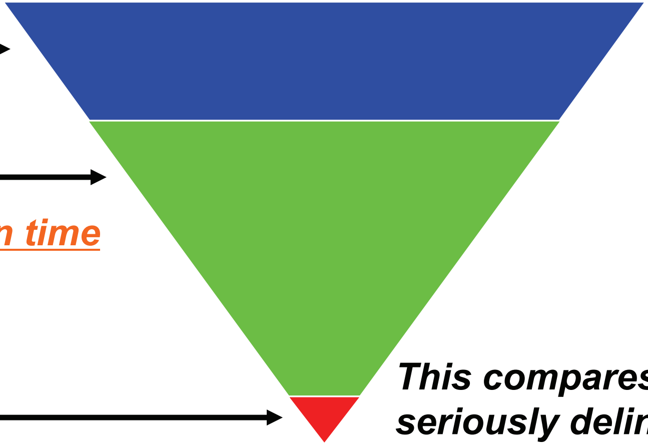
<u>*25 million or 31% are paid off*</u>

55 million have mortgages

<u>*49 million or 89% are paying on time*</u>

6 million are behind

<u>*11% of 55 million with 3% in foreclosure*</u>



This compares to 50% seriously delinquent in the 1930s.

Note: The data is at year-end 2008.
Sources: U.S. Census, Freddie Mac, Mortgage Bankers Association, Milken Institute.

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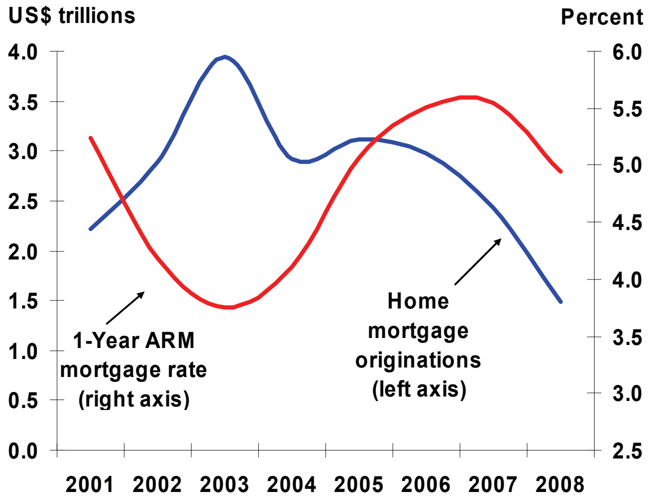
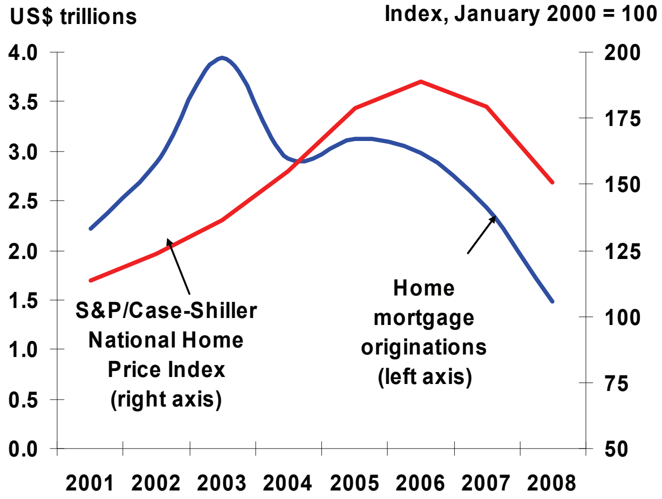
Low interest rates, credit boom and bust



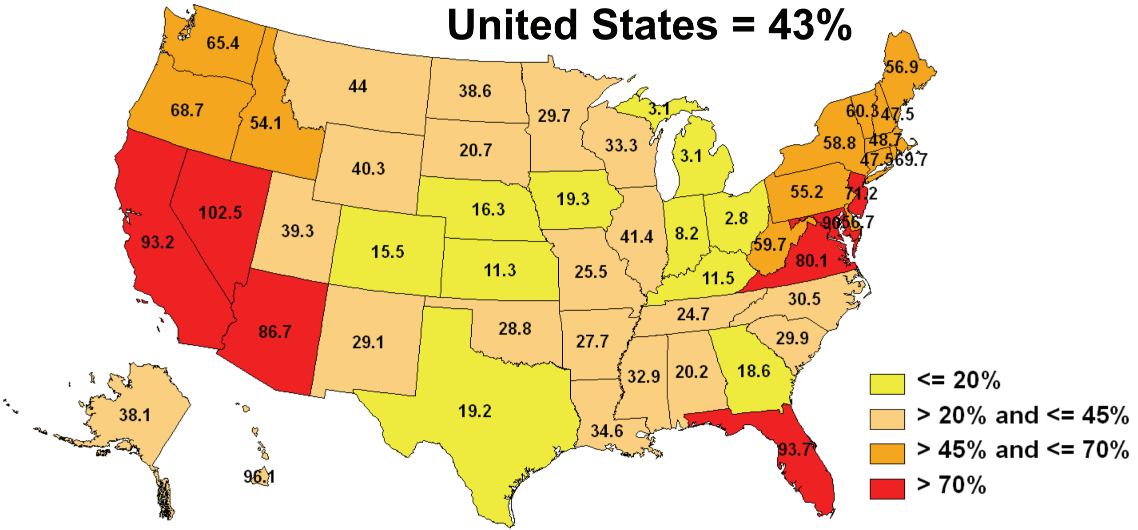
Home price bubble, credit boom and bust



Sources: Inside Mortgage Finance, Mortgage Bankers Association, Moody's Economy.com, S&P/Case-Shiller, Milken Institute.

All states had home price increases

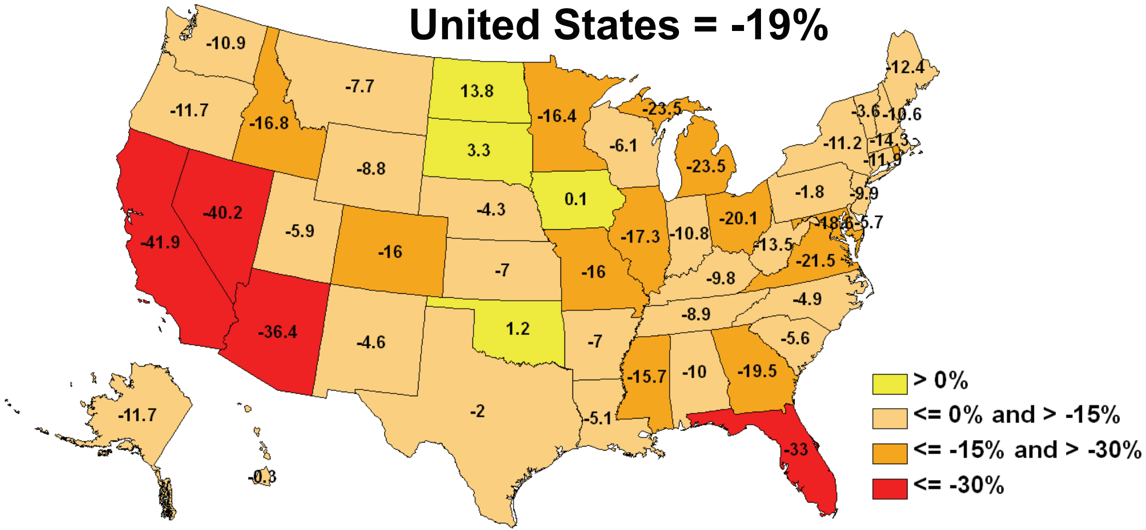
From 4Q 2001 to 4Q 2006



Sources: Moody's Economy.com, Milken Institute.

Forty-seven states had home price declines

From 4Q 2006 to 4Q 2008



Sources: Moody's Economy.com, Milken Institute.

If you bought your house…

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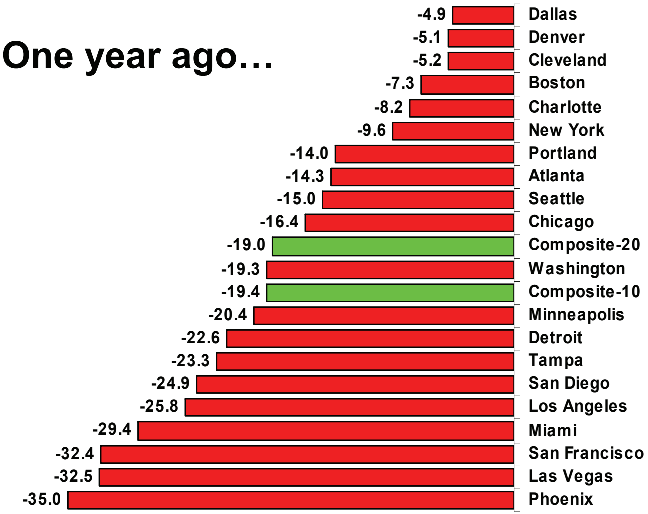
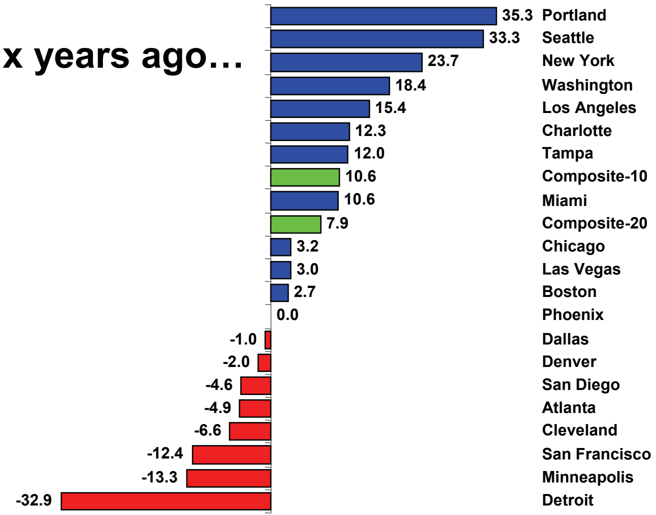
One year ago…



% change in price, January 2008-2009

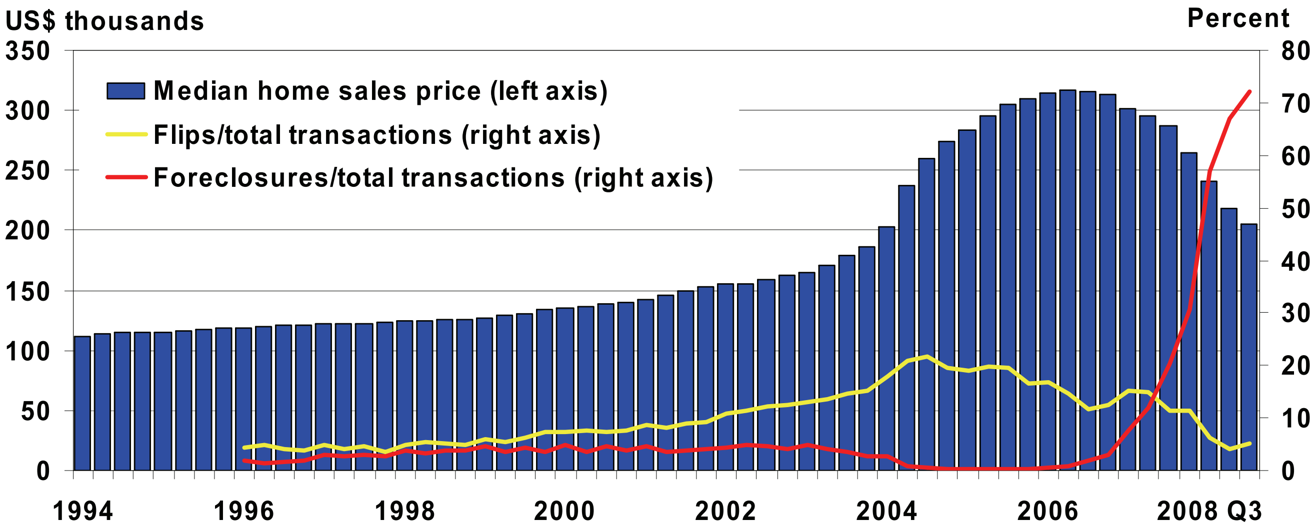
Six years ago…



% change in price, January 2003-2009

Sources: S&P/Case-Shiller, Milken Institute.

Las Vegas housing market



Source: James Barth and Harris Hollans.

Percentage of homes purchased between 2004 and 2008 that now have negative equity

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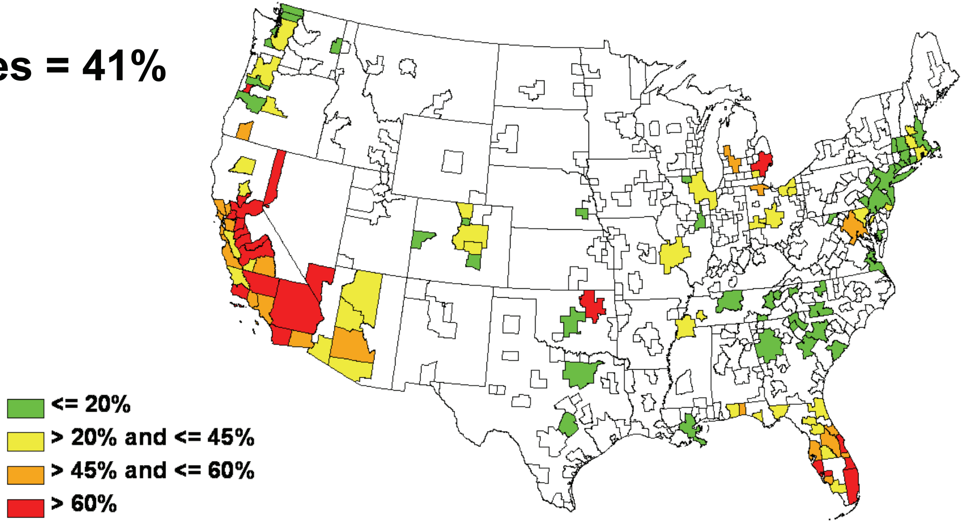
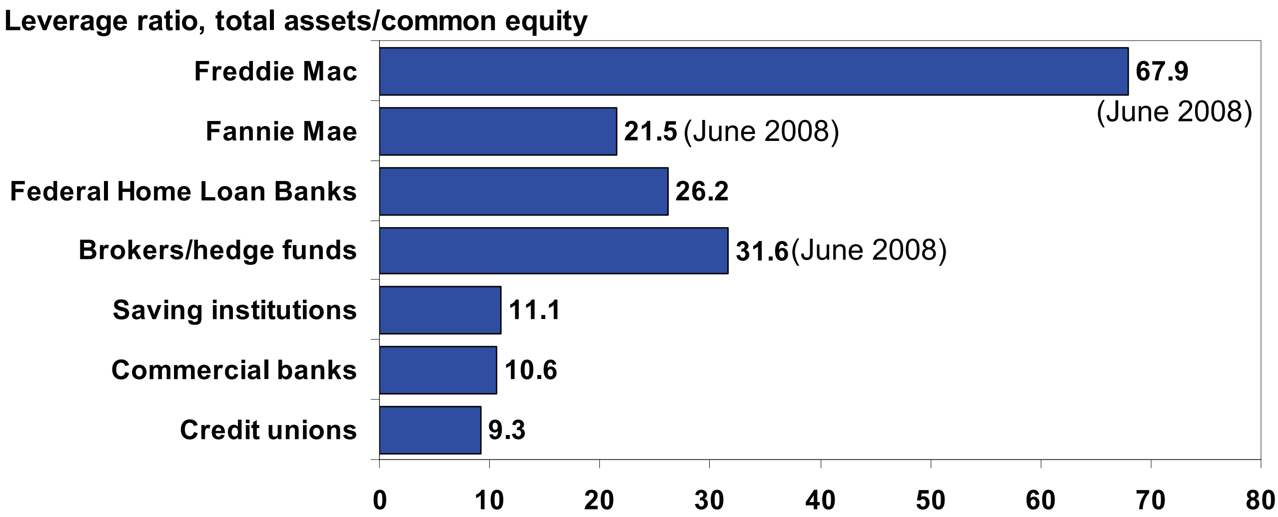
United States = 41%



Sources: Zillow.com, Milken Institute.

Leverage ratios of selected financial firms

December 2008

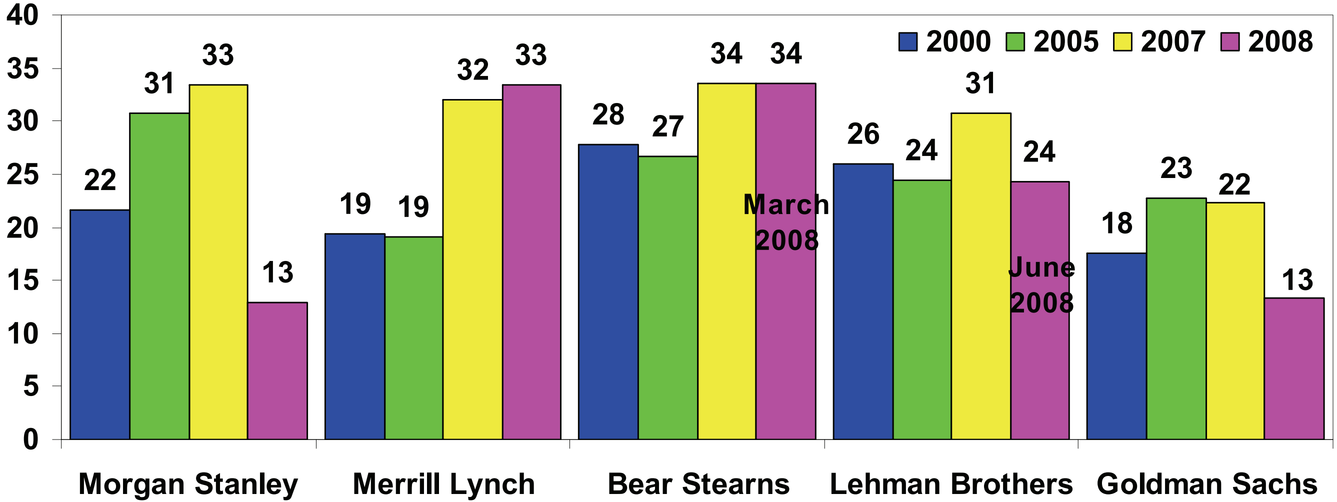


Note: Leverage ratios for Freddie Mac and Fannie Mae are as of June 2008. The two institutions have negative common equities as of December 2008.
Sources: FDIC, FHL Banks Office of Finance, National Credit Union Administration, Freddie Mac, Fannie Mae, Milken Institute.

Too much dependence on debt?

Leverage ratios at biggest investment banks

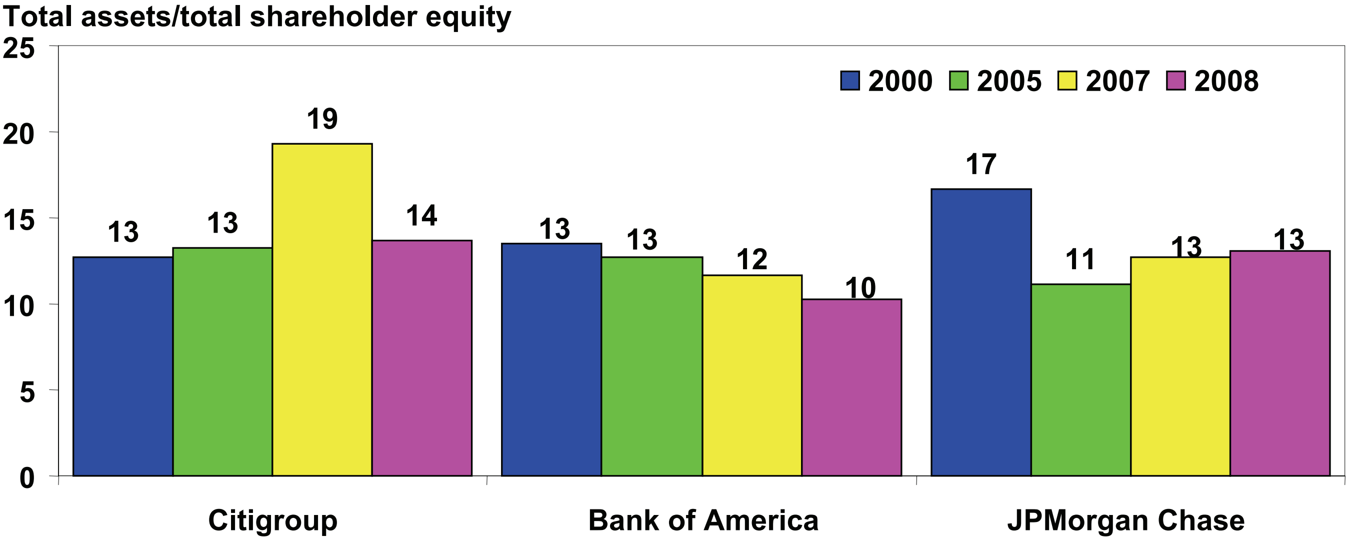
Total assets/total shareholder equity



Sources: Bloomberg, Milken Institute.

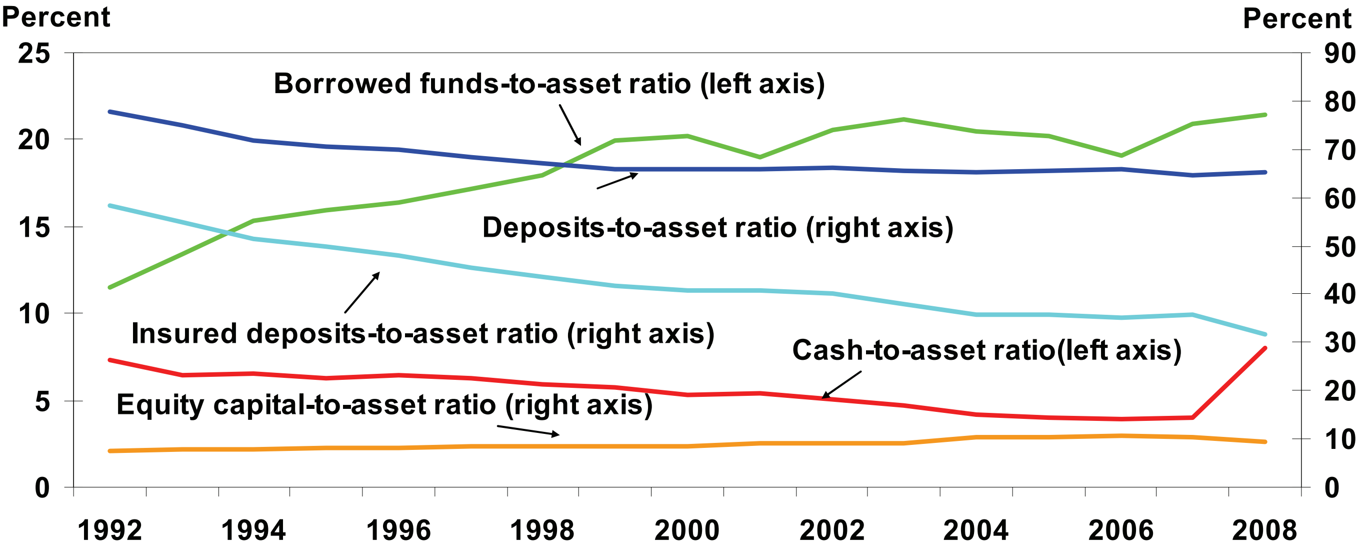
Too much dependence on debt?

Leverage ratios at bank holding companies



Sources: Bloomberg, Milken Institute.

Balance sheet information on FDIC-insured institutions



Sources: FDIC, Milken Institute.

Reserve coverage ratio of all FDIC-insured institutions

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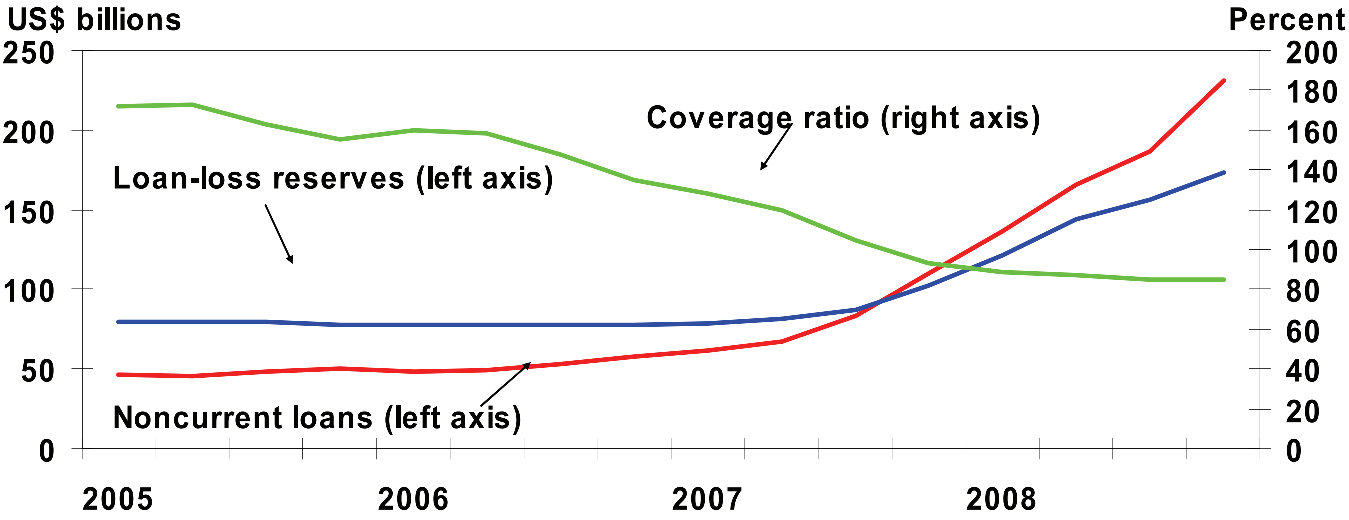

Sources: *Quarterly Banking Profile*, FDIC, Milken Institute .

The mortgage model switches from originate-to-hold to originate-to-distribute

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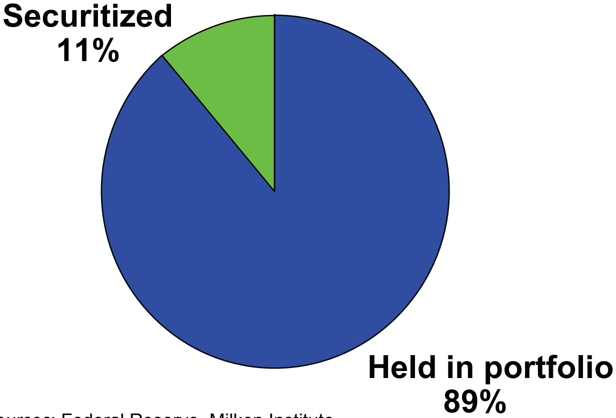
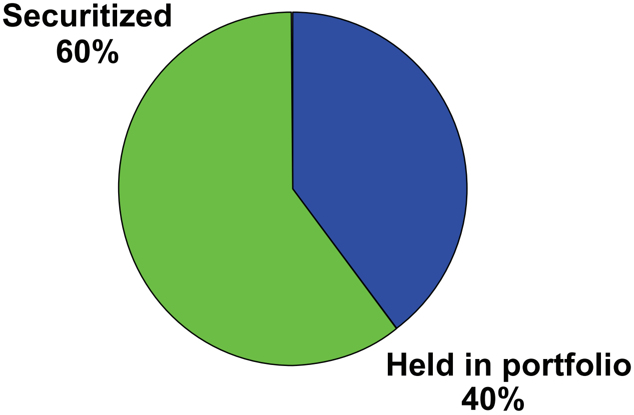
Household mortgage debt

1980=$958 billion



Household mortgage debt

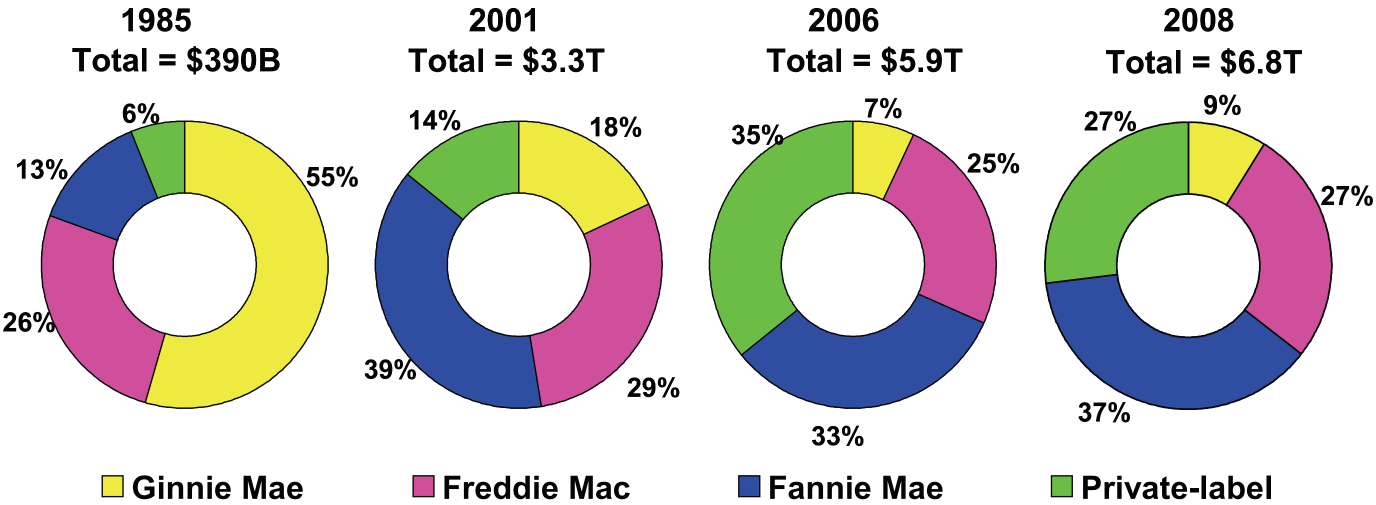
2008=$10.5 trillion



Sources: Federal Reserve, Milken Institute.

The rise and fall of private-label securitizers

Outstanding securities



Sources: Inside Mortgage Finance, Milken Institute.

56 percent of MBS issued from 2005 to 2007 were eventually downgraded

S&P	Total	Downgraded	Downgraded/ Total
AAA	1,032	156	15.1%
AA(+/-)	3,495	1,330	38.1%
A(+/-)	2,983	1,886	63.2%
BBB(+/-)	2,954	2,248	76.1%
BB(+/-)	789	683	86.6%
B(+/-)	8	7	87.5%
Total	11,261	6,310	56.0%

Note: A bond is considered investment grade if its credit rating is BBB- or higher by S&P. The data is downgraded through October 2008.

Sources: Inside Mortgage Finance, Milken Institute.

When is a AAA not a AAA?

Multilayered mortgage products

Origination of mortgage loans

↓

Pool of mortgage loans: prime or subprime

↓

Mortgage bonds

AAA	80%
AA	11%
A	4%
BBB	3%
BB-unrated	2%

High-grade CDO

Senior AAA	88%
Junior AAA	5%
AA	3%
A	2%
BBB	1%
Unrated	1%

Mezzanine CDO

Senior AAA	62%
Junior AAA	14%
AA	8%
A	6%
BBB	6%
Unrated	4%

CDO-squared

Senior AAA	60%
Junior AAA	27%
AA	4%
A	3%
BBB	3%
Unrated	2%

→ **CDO-cubed…**

Sources: International Monetary Fund, Milken Institute.

The U.S. regulatory regime: In need of reform?

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Justice Department
- Assesses effects of mergers and acquisitions on competition

Financial, bank and thrift holding companies
- Fed
- OTS

Fannie Mae, Freddie Mac, and Federal Home Loan Banks
- Federal Housing Finance Agency

Federal courts
- Ultimate decider of banking, securities, and insurance products

Fed is the umbrella or consolidated regulator

Primary/ secondary functional regulator

National banks
- OCC
- FDIC

Federal branch
- OCC
- Host county regulator

State commercial and savings banks
- State bank regulators
- FDIC
- Fed--state member commercial banks

Foreign branch
- Fed
- Host county regulator

Federal savings banks
- OTS
- FDIC

Limited foreign branch
- OTS
- Host county regulator

Insurance companies
- 50 State insurance regulators plus District of Columbia and Puerto Rico

Securities brokers/dealers
- FINRA
- SEC
- CFTC
- State securities regulators

Other financial companies, including mortgage companies and brokers
- Fed
- State licensing (if needed)
- U.S. Treasury for some products

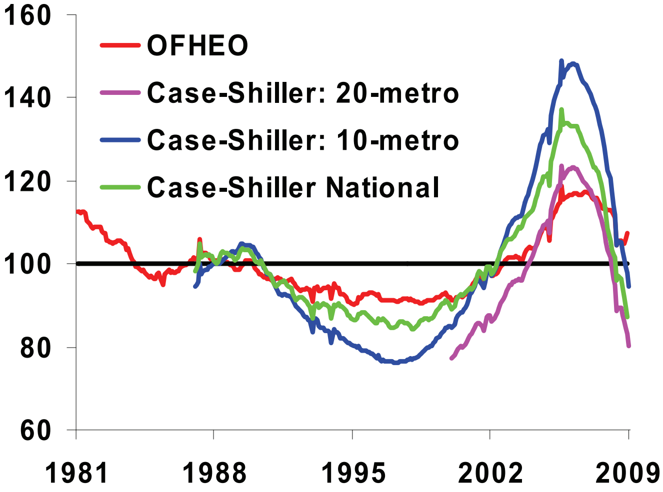
Notes:
Justice Department: Assesses effects of mergers and acquisitions on competition
Federal Courts: Ultimate decider of banking, securities, and insurance products
CFTC: Commodity Futures Trading Commission
FDIC: Federal Deposit Insurance Corporation
Fed: Federal Reserve
FINRA: Financial Industry Regulatory Authority
GSEs: Government Sponsored Enterprises
OCC: Comptroller of the Currency
OTS: Office of Thrift Supervision
SEC: Securities and Exchange Commission

Sources: Financial Services Roundtable (2007), Milken Institute.

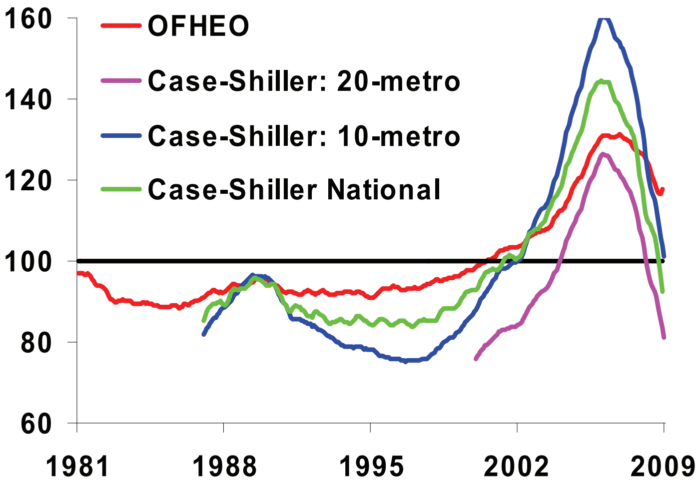
How far do home prices have to fall?

Average = 100

Price/disposable income per capita



Price/rent



Sources: Moody's Economy.com, Milken Institute.

Alternative measures for the affordability of mortgage debt for California

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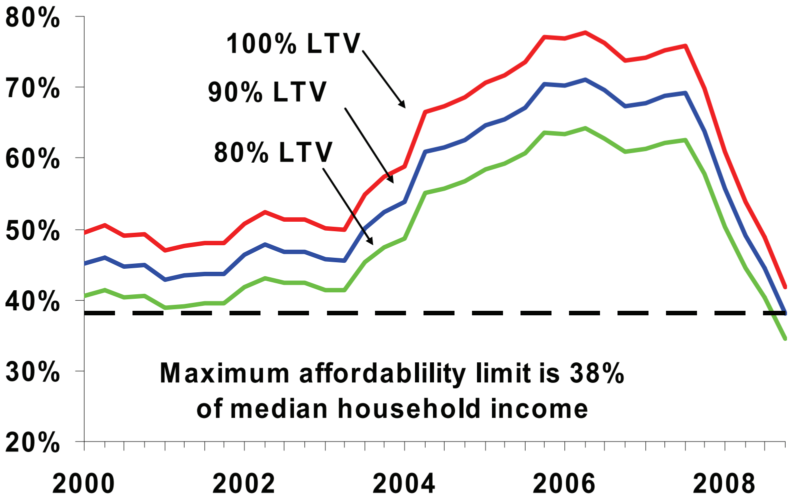
Mortgage payment assumptions:

* Home is purchased at median price
* Buyer takes out a 30-year conforming, fixed-rate loan
* Payment also includes 1% property tax per year, 0.1% property insurance

Estimated monthly payment / monthly household income



Sources: Moody's Economy.com, Milken Institute.

Overview

Government responses to liquidity freeze and credit crunch

- Government/private sector purchases of toxic assets
- Guarantees for selected assets and liabilities
- Capital injections into financial institutions
- Subsidization of loan modifications by financial institutions
- Debt for equity swaps
- Easier monetary policies, including lowering interest rates and quantitative/ credit easing
- Coordinated responses by countries (e.g., central bank currency swaps)
- Establish an RTC-like agency (?)
- Create good banks, bad banks (?)
- Nationalize deeply troubled financial institutions (?)

Federal government comes to the rescue of Main Street and Wall Street

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Federal Reserve	6,048
Congress and White House	2,466
Federal Deposit Insurance Corporation	926
Treasury, Federal Deposit Insurance Corporation and Federal Reserve	362
Total amount dispersed/committed (US$ billions)	9,802

Upper limit to total funds under these programs

…$9.8 trillion plus ?

Source: Milken Institute.

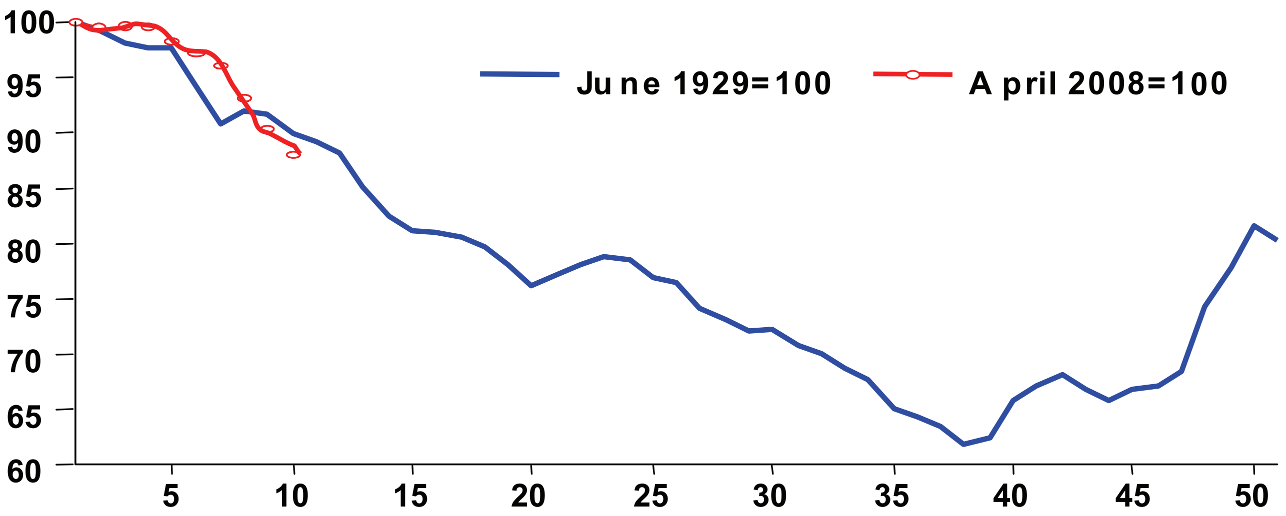
Overview

Reforms to prevent/mitigate credit booms and busts

- **Macro-prudential regulation** (i.e., establish a systemic risk regulator or market stability regulator)
- **A liquidity regulation** to take into account maturity mismatches due to short-term funding of longer-term, illiquid assets
- **Countercyclical regulation** (e.g., dynamic capital and/or provisioning regulations)
- A regulation that internalizes (taxes) a financial institution's contribution to systemic risk (to address too-big-to-fail issue)
- **Greater transparency** by requiring clearing and settling of credit default swaps to be conducted through clearing houses or on exchanges, which provides for greater monitoring of exposures and posting of necessary collateral
- Change fee structure for **credit rating agencies**, eliminate the Nationally Recognized Statistical Rating Organization (NRSRO) designation, and decrease use of ratings in regulatory system
- Consider eliminating treatment of residential mortgages as non-recourse loans (i.e., secured only by the underlying property), merging Freddie Mac and Fannie Mae, and requiring mortgage originators to have "skin in the game"
- Consider modifying **incentive/compensation systems** to discourage excessive risk taking
- **Reform structure of regulatory system**
- Consider establishing greater co-operation among regulators in countries or establish centralized supervision or deposit insurer in some regions

- **Barry Eichengreen's slides**

And not only here:
It is a global slump in industrial production



Not only here:
Trade is collapsing faster than in 1929

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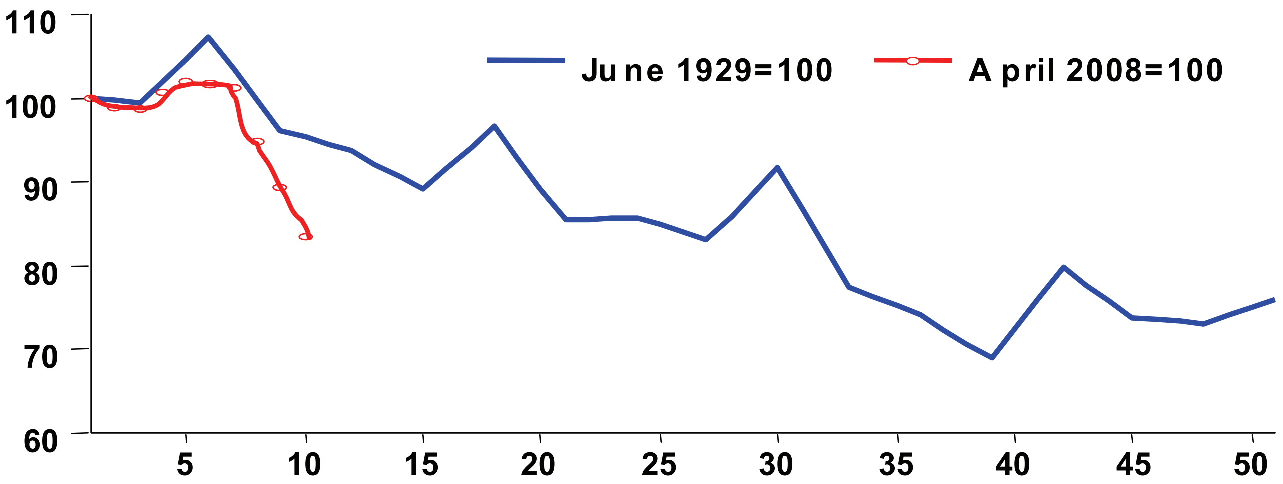
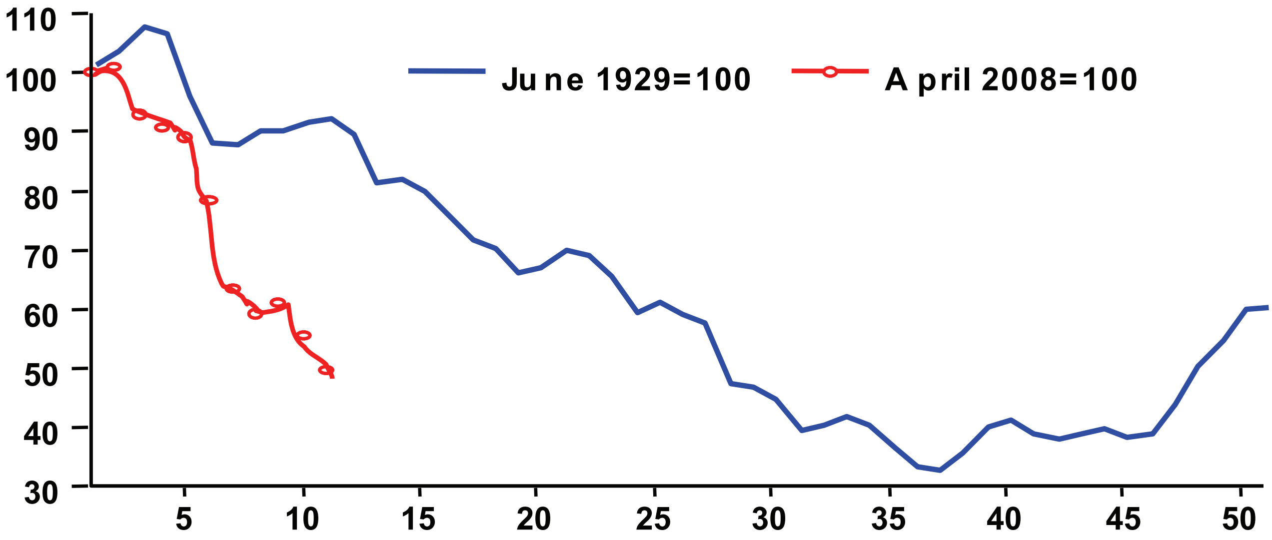


Not only here: It is a global stock market crash



Grading the policy response

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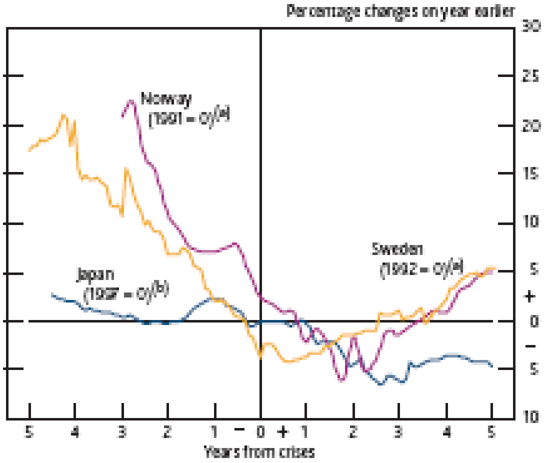
- Monetary policy: A-
- Fiscal policy: B+
- Housing policy: B+
- Banking policy: Incomplete

Even then there is no instantaneous fix

- Vertical line in figure at left is date of major bank recapitalization.
- It still takes two years after that for lending to recover even in the Swedish case that is the benchmark of how to do it.
- It took a long time to get into this mess. Alas it will take a long time to get out.

Chart 5.13 Growth in lending to real economy following past financial crises



We will become more heavily indebted, but we have no choice

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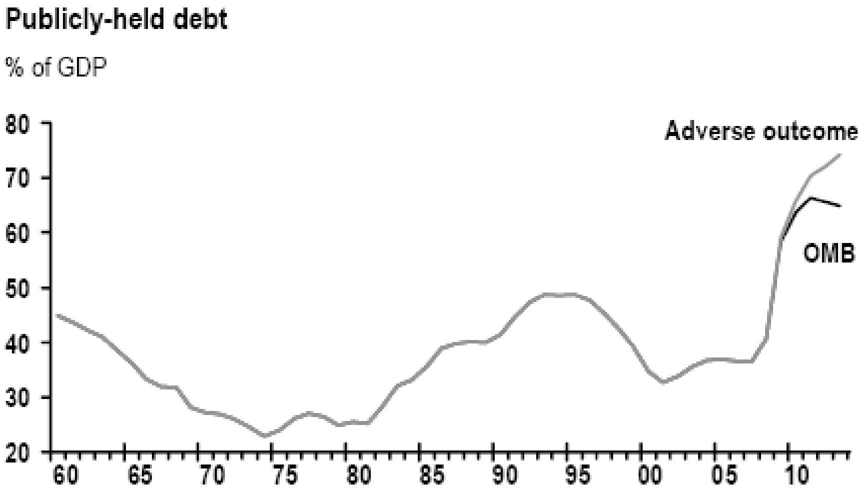
CBO forecasts now suggest that the US debt ratio will rise from 40 to 80 percent of GDP.



This is roughly what happened in Finland and Sweden

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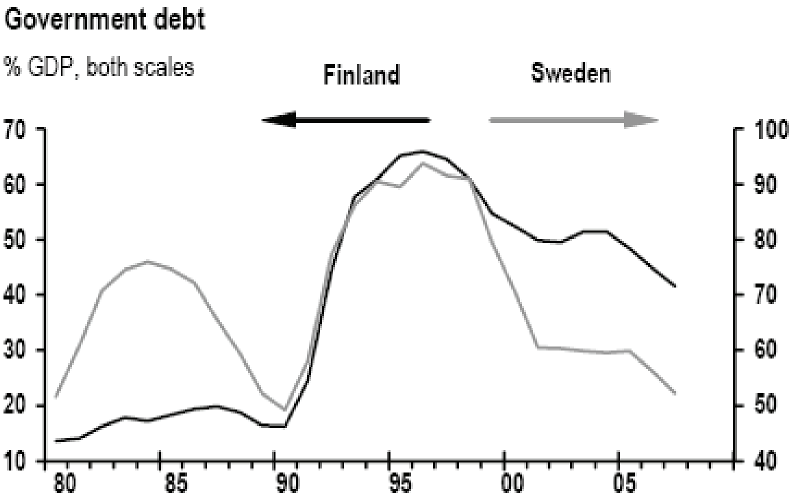
- In resolving their banking crises, their debt ratios similarly rose by 40% of GDP.
- Of course, you can make progress later, bringing this ratio back down, through surpluses and growth (if you fix the banking system and then show political resolve)



This is not to deny that there will be medium term consequences

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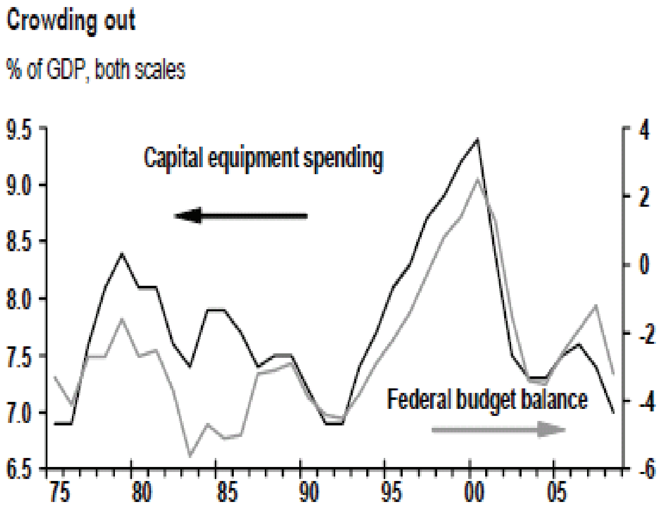
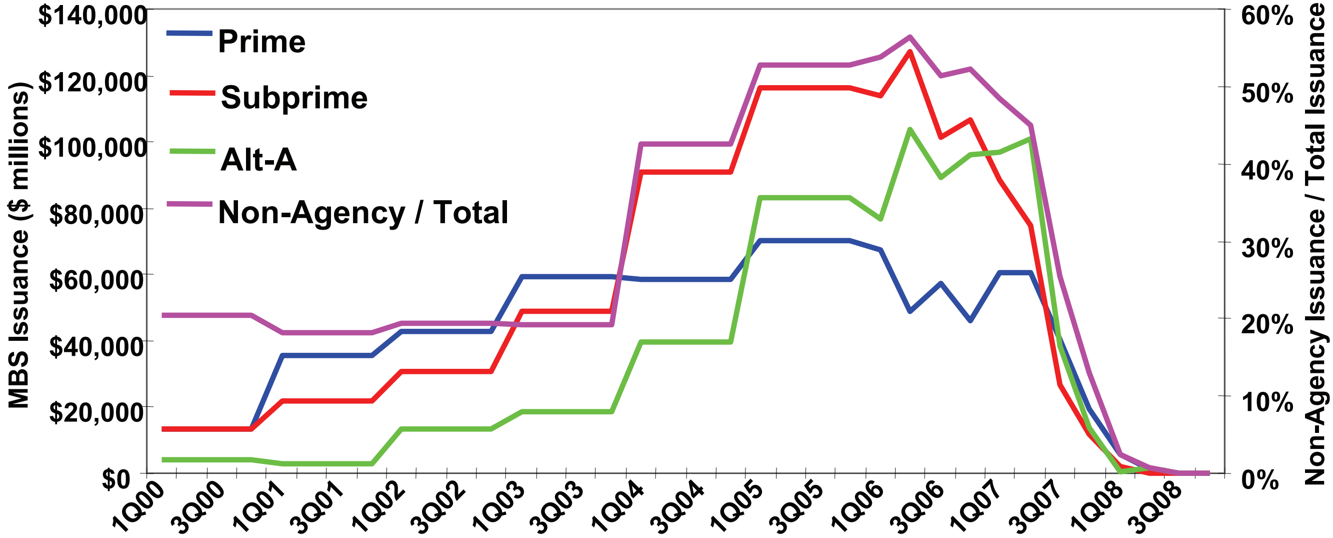
- There will be crowding out of capital investment, not now but once the economy is firing on all cylinders again.
- But my point is that there is little choice.
- We have dug ourselves a deep hole. The cost of preventing growth from collapsing now will be somewhat slower growth for several years going forward (until we normalize the budget balance).



- **Alan Boyce's slides**

U.S. Non-Agency MBS market died



Note: 2000-2005 assumed straight-line for quarterly comparison

Which reduces risk of negative equity

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Typical homeowner scenario:

- –Borrower pays \$100,000 for a house with an 80% LTV, loan originated at par
- –Agency Loan, housing prices have fallen 10% and FN 5% mortgage bond prices have fallen to 94
- –Non-Agency Loan, housing prices have fallen 30% and mortgage bond prices have fallen to 75

At Origination

House	Loan
100	80
	Equity 20

Agency Loan:

Housing Prices Down 10%

Existing System

House	Loan
90	80
	Equity 10

Change in Equity: -50%

Principle of Balance

House	Loan
90	75
	Equity 15

Change in Equity: -25%

Non-Agency Loan:

Housing Prices Down 30%

Existing System

House	Loan
70	80
	Equity -10

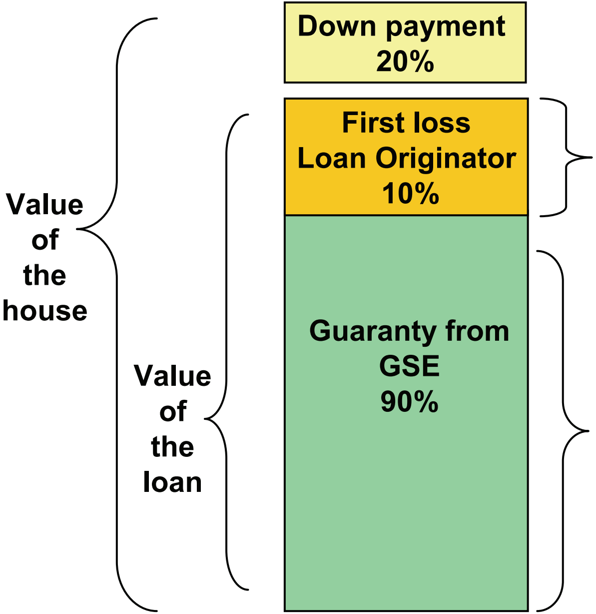
Negative Equity

Principle of Balance

House	Loan
70	60
	Equity 10

Change in Equity: -50%

Credit enhancement structure for shared platform



- Provided by Originator and/or MI industry
- Expected Capital reserves of 20%
- Backup capital and industry skill to be provided by MI Reinsurance Industry

- AAA rating flows from GSE guarantee
- The value of the house will serve as collateral
- Bond holder looks to GSE for full faith and credit guaranty
- GSE looks to Originator remove bad loans from the pool
  - Originator purchases parri passu amount of bonds from pool at lower of market or par
  - If originator fails to perform, GSE can seize servicing rights and margin and reassign to another servicer