Understanding the Sources and Way Out of the Ongoing Financial Upheaval

Keynote Address

Conference on Property Markets and Finance

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Global Downturn

The economy appears headed toward the worst downturn since the Great Depression.

- With credit flow ended, the global economy is withering.
- A self-reinforcing adverse cycle:
  - The eroding financial system is upending the economy, putting further pressure on the financial system
- Public policy response in the US to the financial crisis has been without precedent.
  - Federal Reserve has vastly expanded its role
  - A large fiscal stimulus package is about to be legislated
  - But more is needed: for private credit flows to resume, confidence in the financial system itself must be restored
  - This requires understanding what went wrong and addressing the need for responses, as the short run cycle of decline is also addressed

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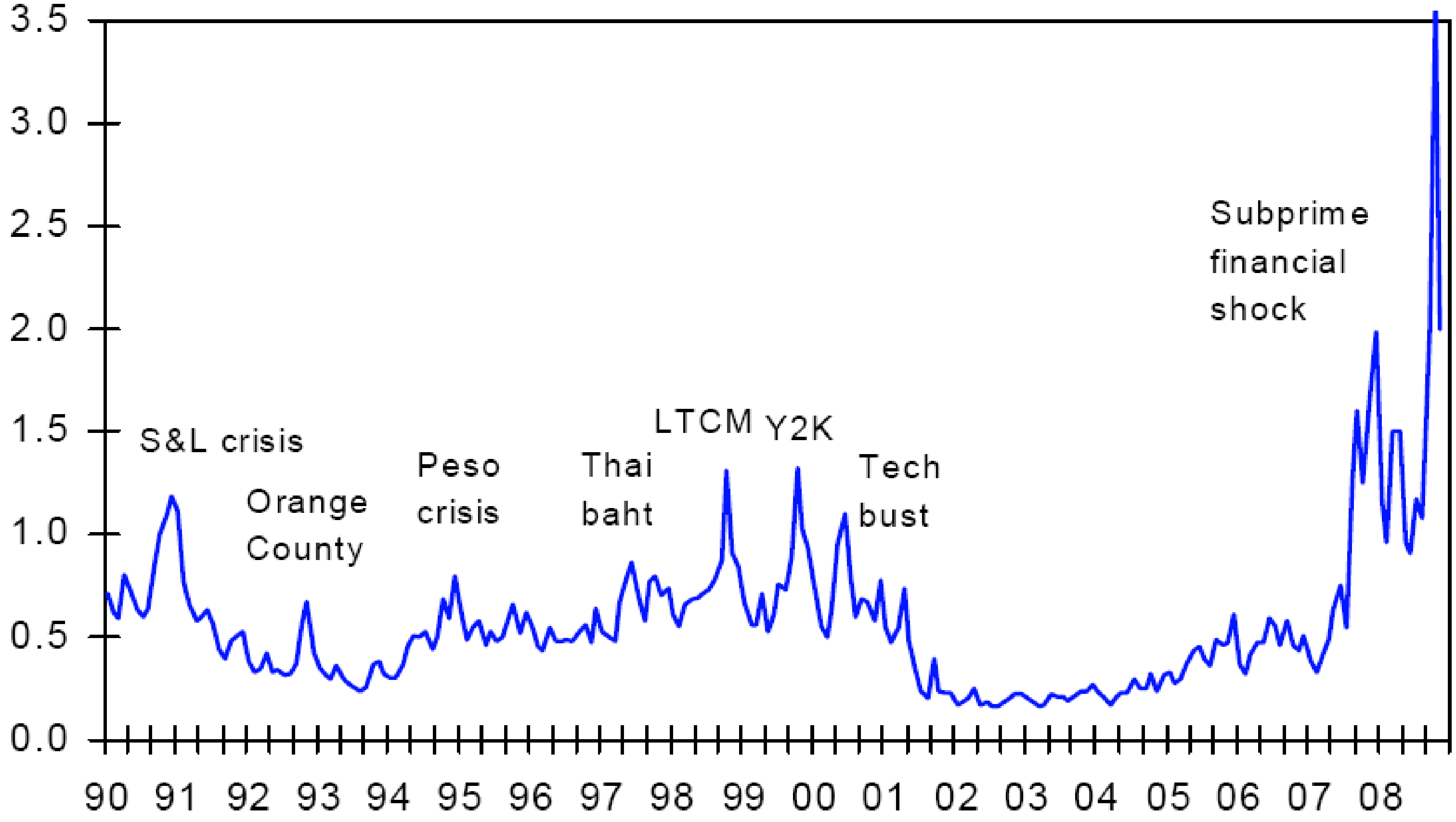
The Economic Backdrop

- Angst in the banking system
  - The spread between three-month Libor and three-month T-bill rates is still an extraordinarily wide 200 basis points
- Credit markets remain badly shaken
  - No MBS issuance
  - Very little issuance of junk corporate bonds and emerging market debt
- Commodity and foreign currency markets have been roiled
  - Oil prices have fallen more than 50% from their record peaks in early July
  - Prices for commodities from copper to corn have plunged
- Volatility in global stock markets
  - Global stock prices are off a stunning 30% in local currency terms and more than 40% from their year-ago highs

The Economic Backdrop

Chart 1: On the Precipice of Collapse
Difference between 3 month Libor and Treasury bill yields



Source: Moody's Economy.com

The Damage Has Been Done

- Real GDP fell in Q4 of 2007 and again in Q3 of 2008
- 2.6 million jobs have already been lost so far on net, and the unemployment rate has risen by over 2 percentage points to 7.2%.
- Consumer confidence crashed in October to its lowest reading ever

Chart 2: Recession From Coast-to-Coast

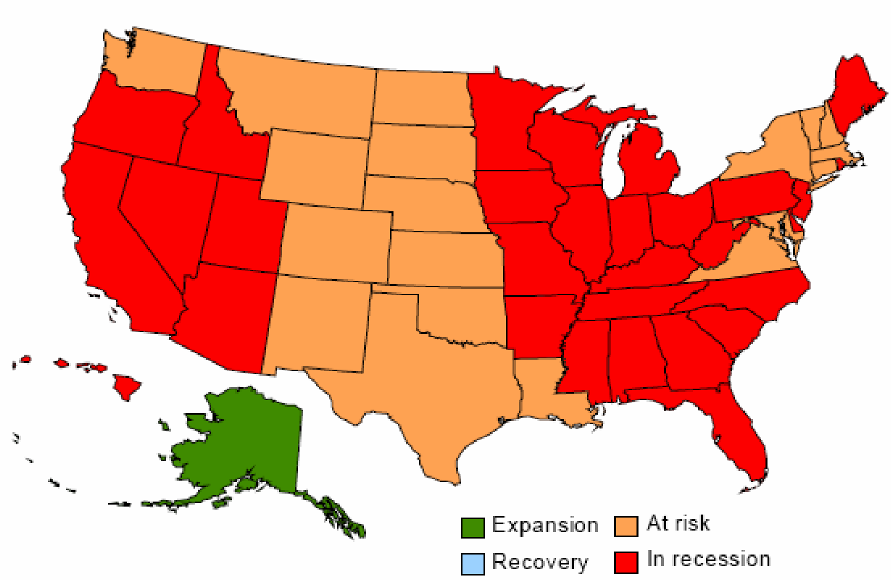
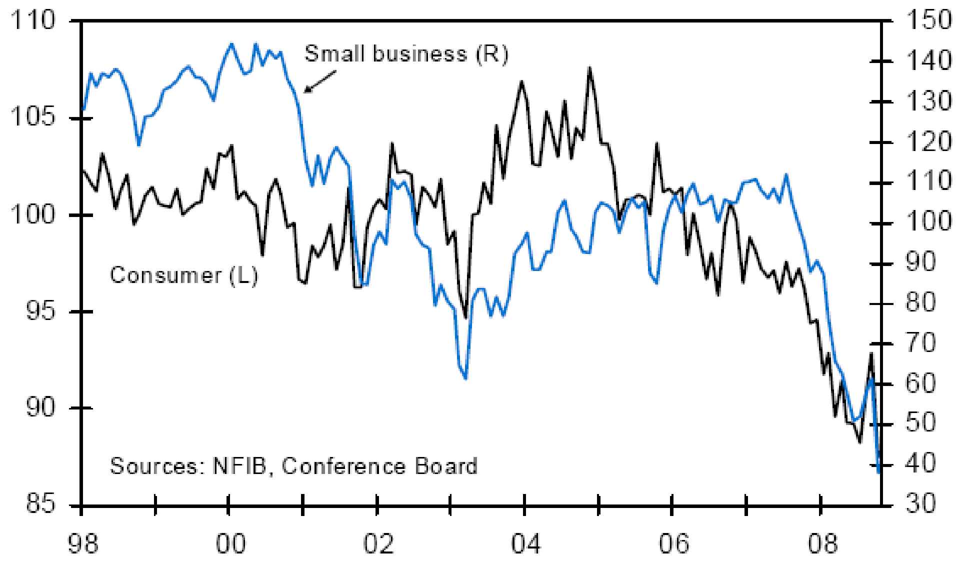


Chart 3: A Body Blow to Confidence
Consumer and business confidence



Source: Mark Zandi, Moody's Economy.com

Effects on Spending and Saving

- The pessimism will magnify the effect of evaporating household wealth
  - Net worth has fallen by $12 trillion
    - $4 trillion results from the 20% decline in house prices
    - $8 trillion results from the 40% decline in stock prices
  - Falling house prices appear to curb retail sales with a lag of about six months: retailers' troubles will last through Christmas 2009
- Reduced availability and higher cost of credit.
  - Real credit may shrink 5% by the end of this year and would cut $275 billion from GDP in 2009
  - $175 billion increase in savings in 2009
  - Costs to the economy from the wealth and credit effects less the benefits from lower commodity prices: $400 billion in 2009

Effects on Spending and Saving

Chart 4: Smaller Nest Eggs, Less Spending

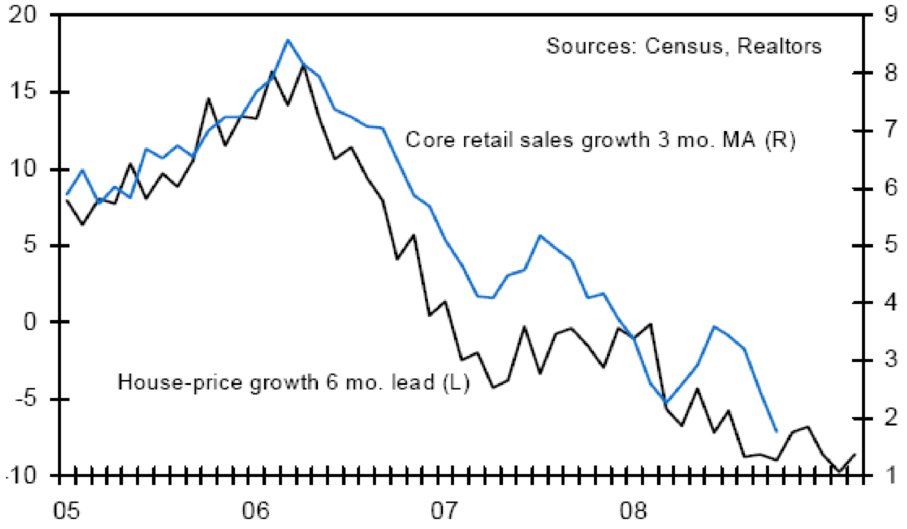
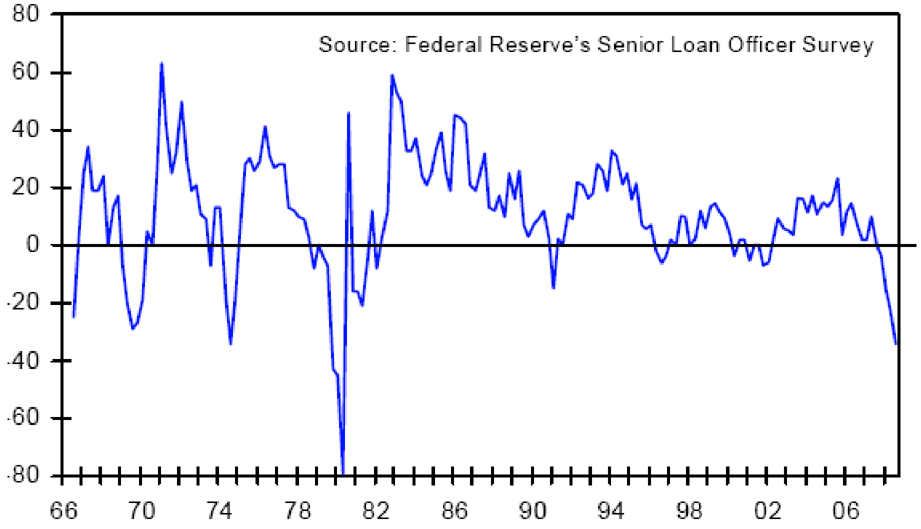


Chart 5: Banks Fight to Survive, Not to Make a Loan
Net % of lenders willing to make a consumer loan



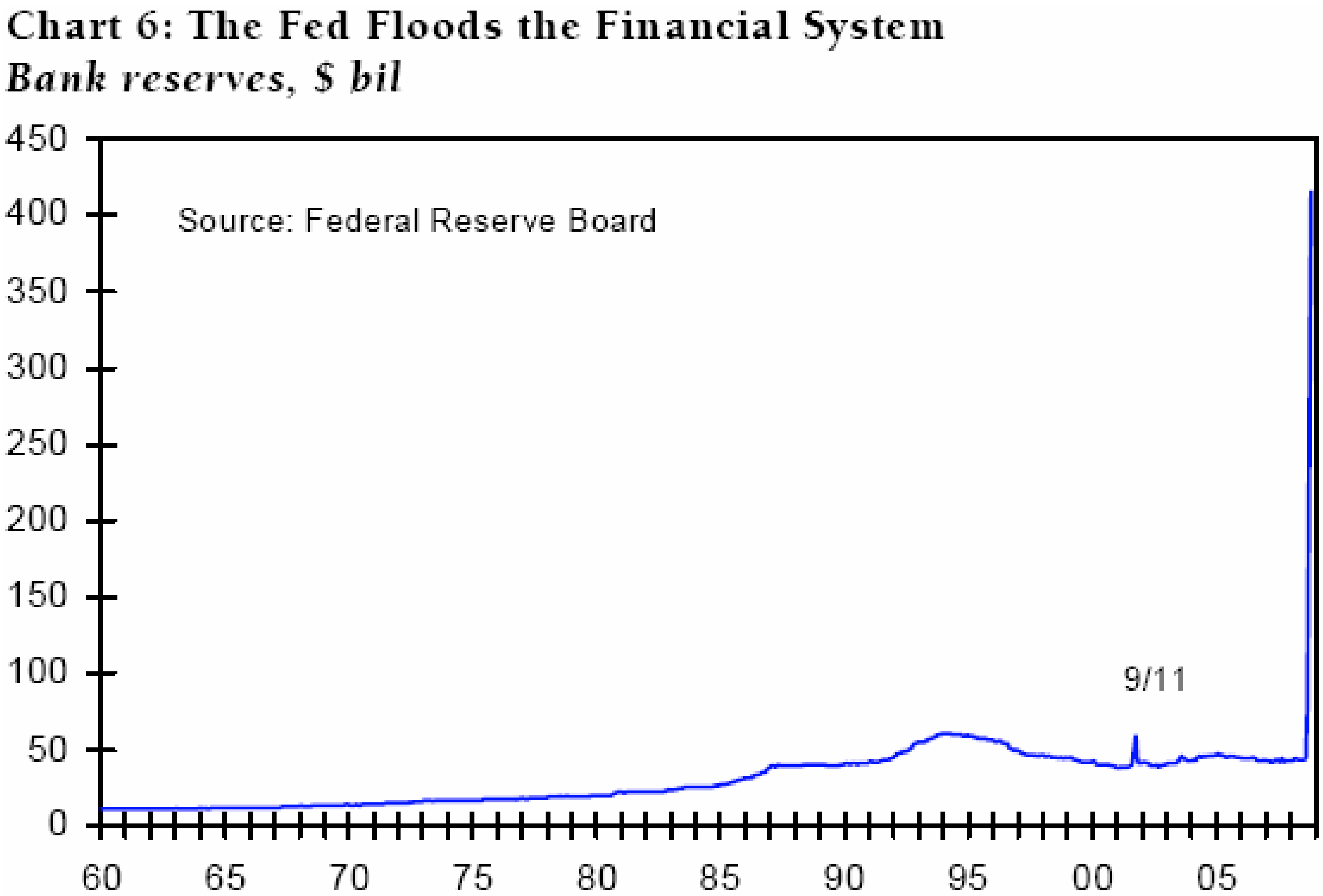
Source: Moody's Economy.com

Monetary Stimulus

From a zero Federal Funds rate to Quantitative Easing

- No more room to lower the federal funds rate
- The Fed will continue to flood the financial system with liquidity despite reaching the zero bound on the federal funds rate
  - Institutions will choose to collect the deposit rate from Fed rather than lend
- The Fed is ramping up lending through credit facilities
  - Financial institutions can use securities as collateral to borrow from the Fed
  - The Fed can now purchase almost anything it deems necessary
- Results of Fed action:
  - Libor has fallen
  - Commercial paper rates have fallen
  - The volume of new issuance has sharply increased
  - Fannie/Freddie rates have fallen to 5%, lowest level in decades

Monetary Stimulus



Source: Mark Zandi, Moody's Economy.com

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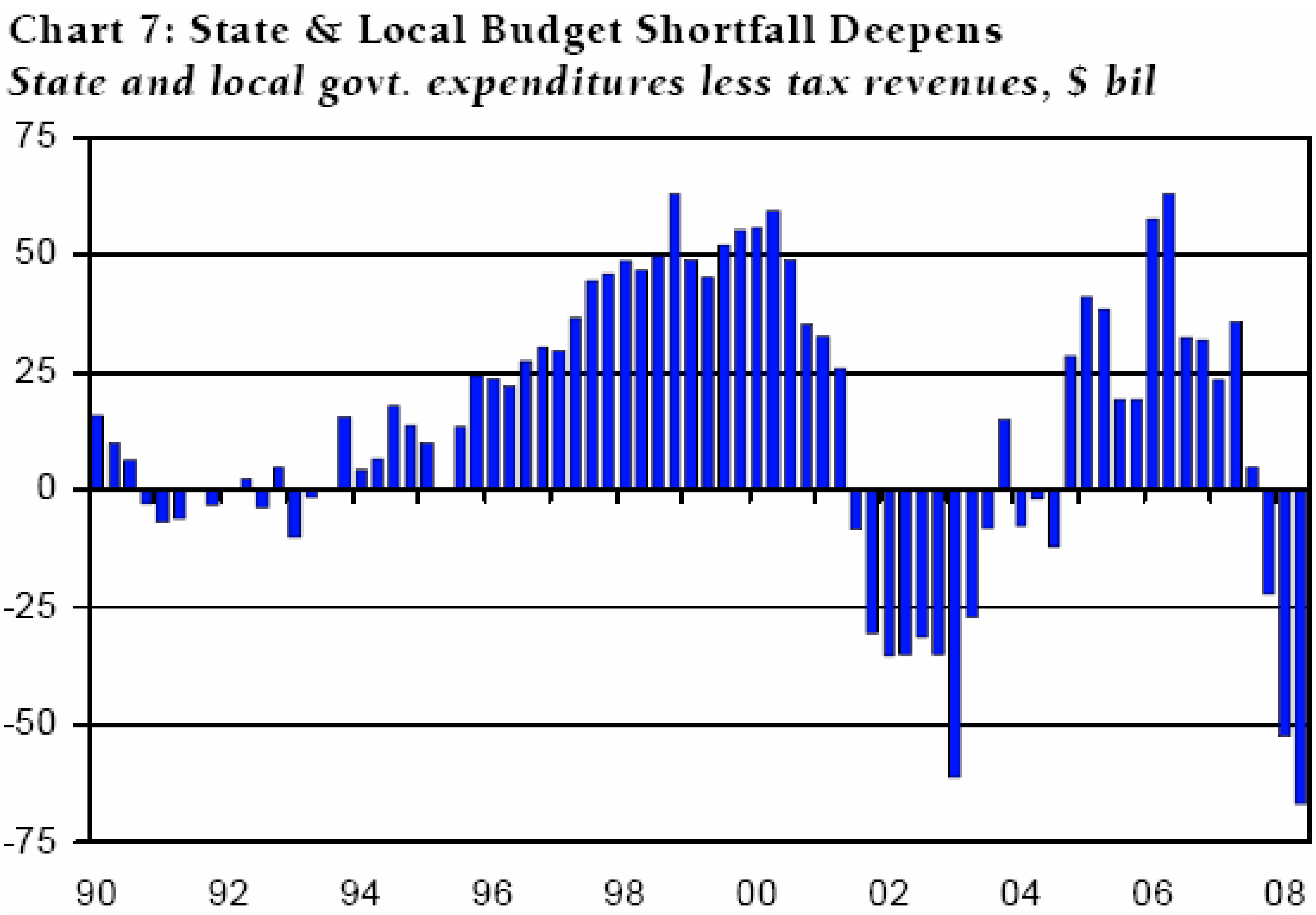
Proposed Fiscal Stimulus

The goal of fiscal stimulus measures is to maximize the near-term boost to economic growth without weakening the economy's longer term prospects.

- A good benchmark for the size of a stimulus is the direct economic costs of the financial panic: $400 billion
- Such a stimulus plan would equal more than 2.5% of GDP
- A well-designed stimulus plan should include a temporary increase in government spending

1. Unemployment Insurance and Food Stamps
   - They are the most efficient ways to prime the economy's pump
   - Every dollar spent on UI benefits generates an estimated $1.63 in near-term GDP
   - Boosting food stamp payments by $1 increases GDP by $1.73

The Proposed $400Bn Stimulus



Source: Mark Zandi, Moody's Economy.com

Proposed $400Bn Fiscal Stimulus

3. Infrastructure Spending

- The boost to GDP from a dollar spent on building new bridges and schools is large: an estimated $1.59

4. Personal Taxes Rate

- A modest stimulus by allowing the tax cuts of 2001 to expire gradually

5. Investment and Housing Tax Incentives

- Extending accelerated depreciation tax incentives for another year until the end of 2009
- Giving homebuyer tax credit equal to 10% of the home's value, capped at 3.5% of FHA loan limits

6. Payroll Tax Holiday

- A holiday applied to the employees' share of the tax would direct relief to households more likely to spend it

Proposed $400Bn Fiscal Stimulus

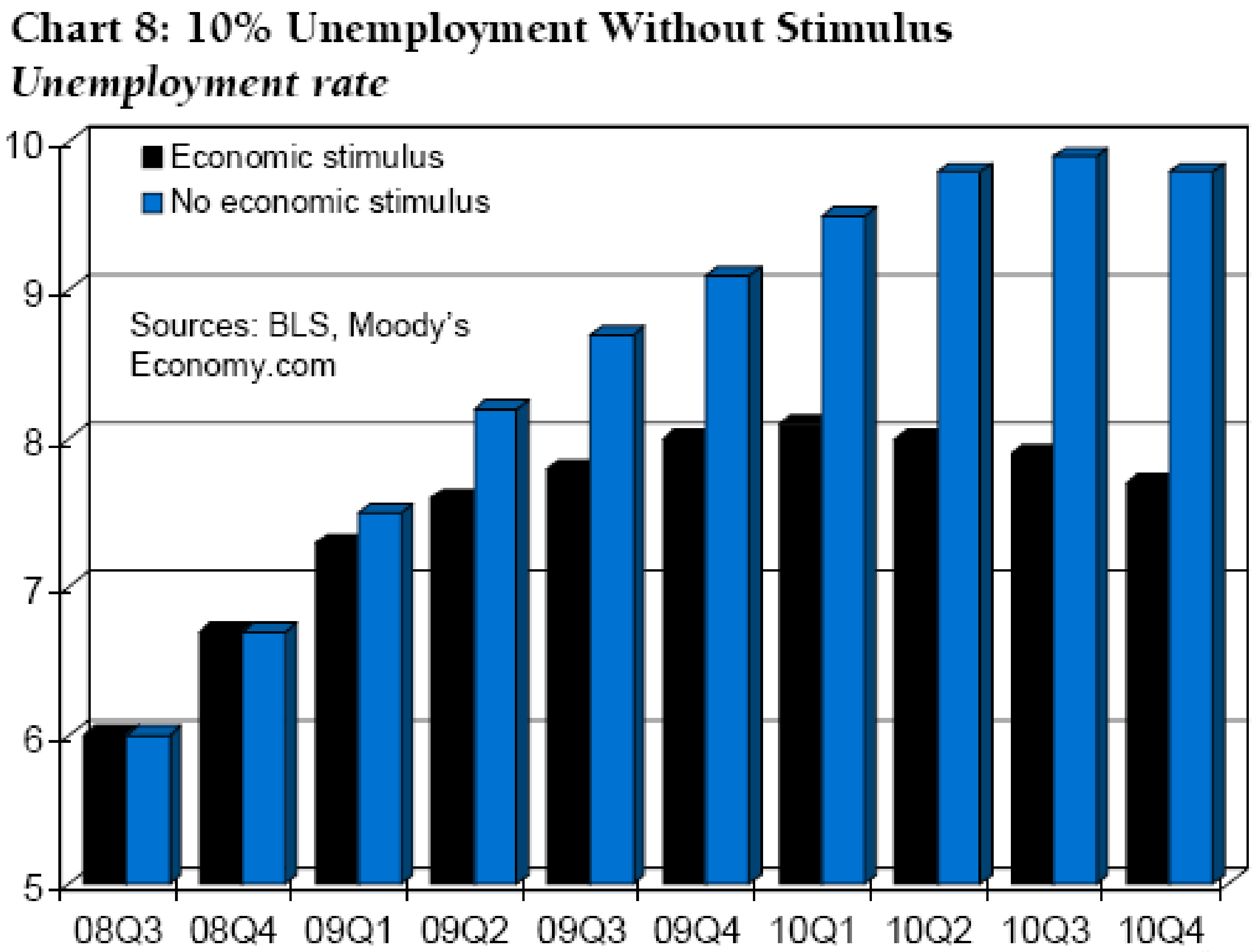
Without stimulus:

- Real GDP would decline for seven quarters, falling by a stunning 2.6% in 2009.
- Unemployment over 10%: Nearly 5 million jobs would be lost by mid-2010

With $400 billion fiscal stimulus plan in 2009 and 2010:

- 2.5 million job losses and unemployment of 8% in 2010
- Full employment of 5% by the end of 2012
- Would not lead to excessively higher long-term interest rates

Impact of Stimulus Measures



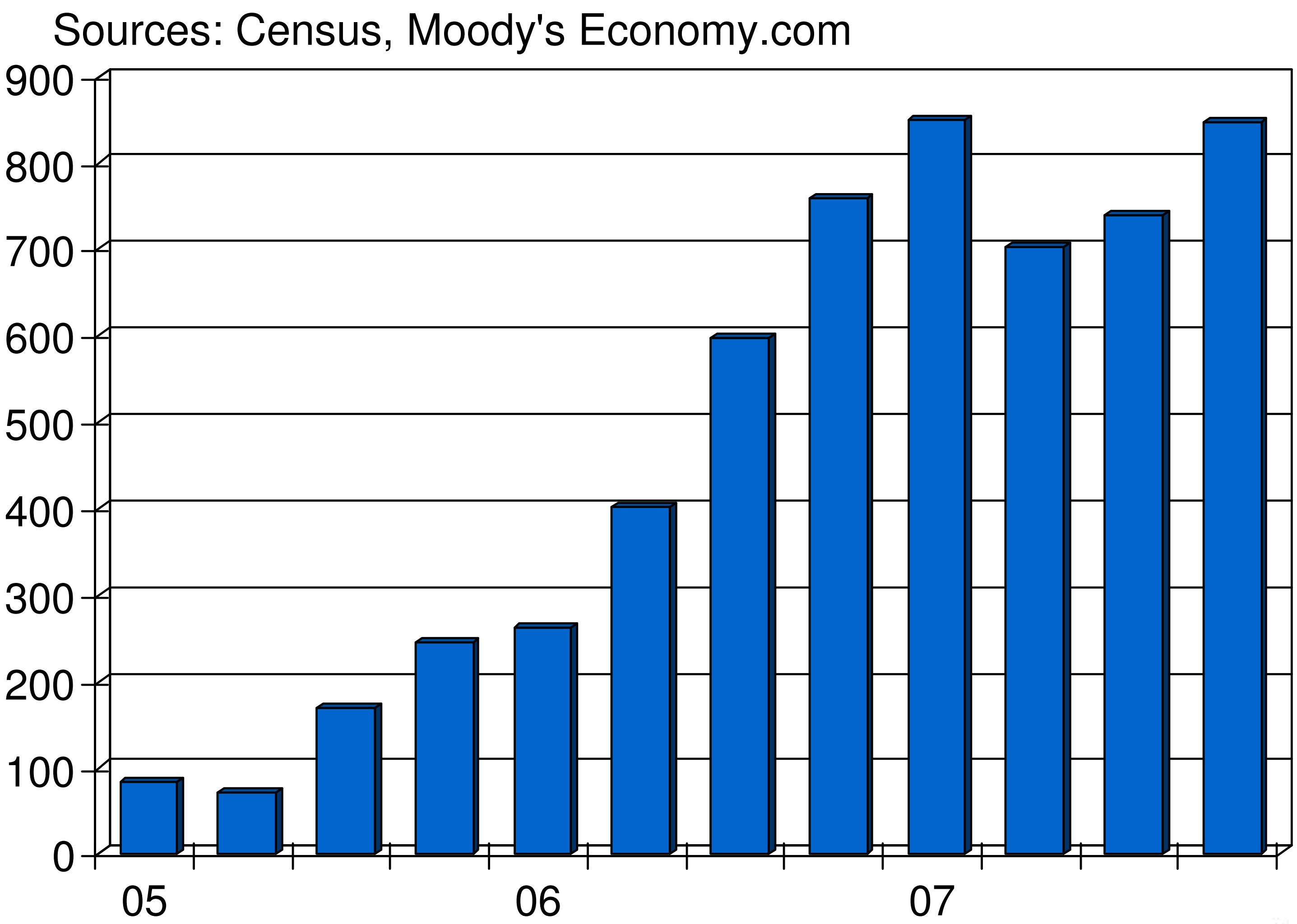
Source: Mark Zandi, Moody's Economy.com

National Housing Downturn: Is there a bottom?

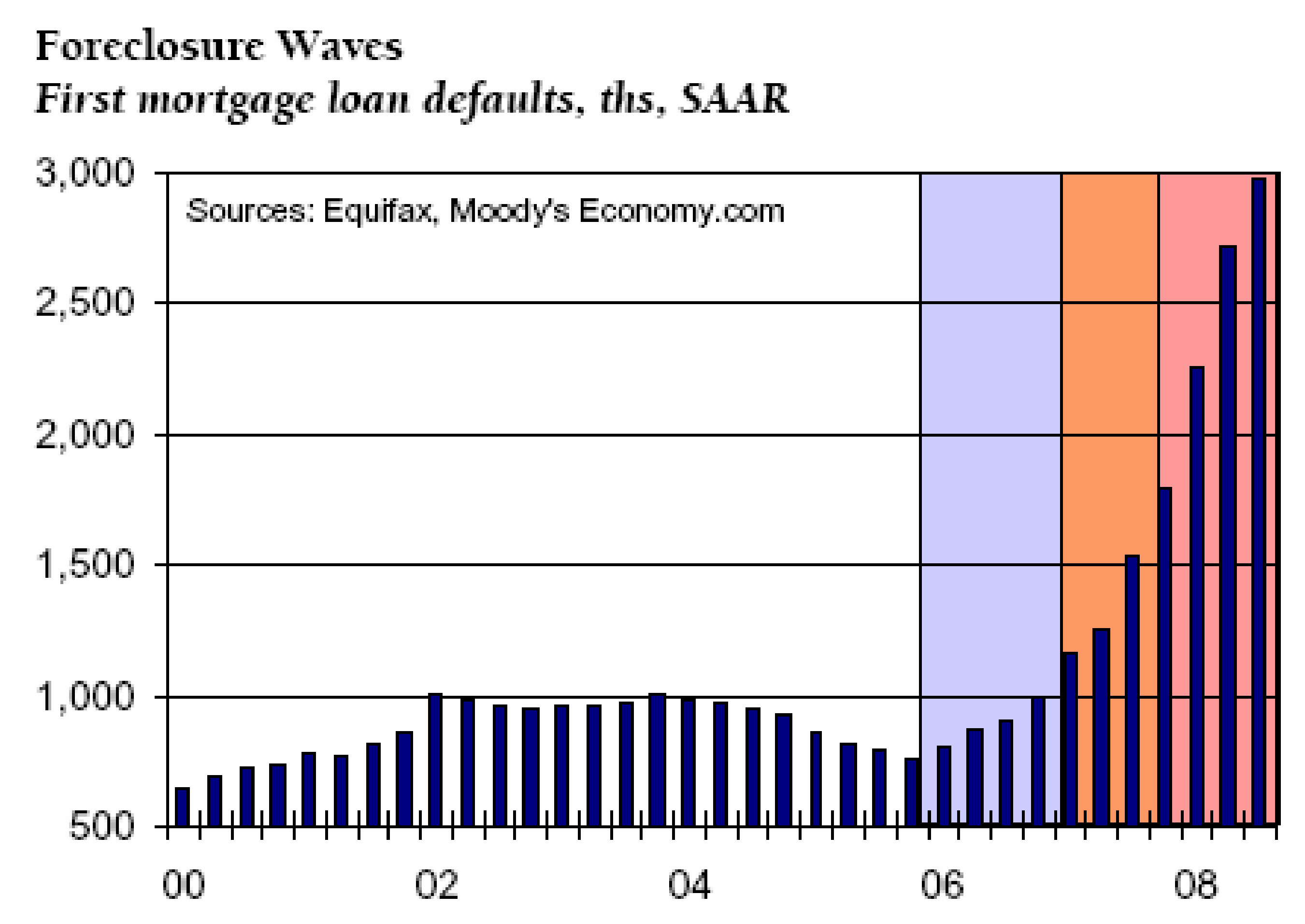
- In a market self correction:
  - Prices decline
  - Demand increases
- Prices decline, supply increases fueling further price decline
- Credit crunch contributing

Housing Market Awash in Inventory

# of excess unsold homes for sale, ths

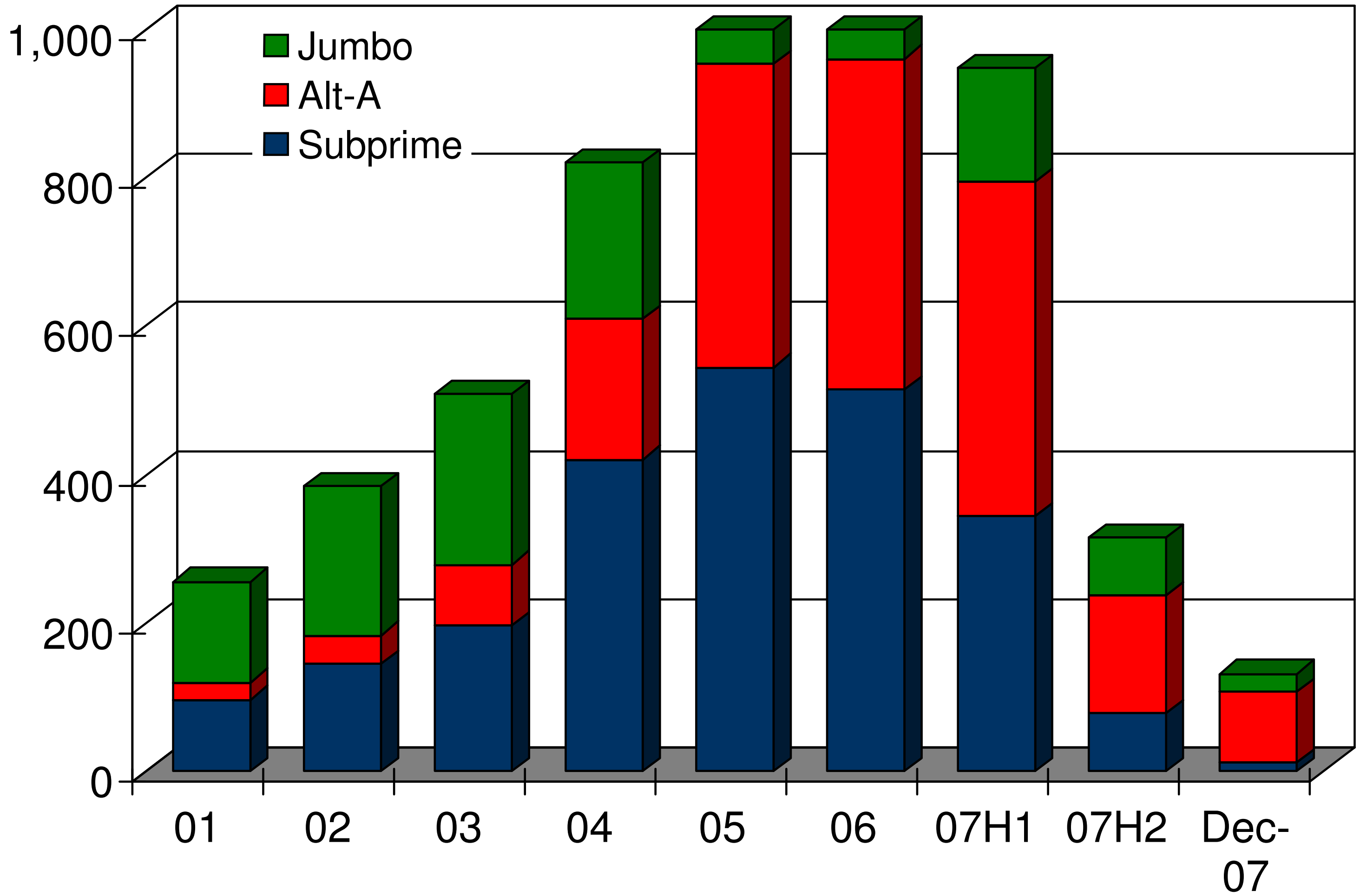


Foreclosure Waves



Inventory Rising due to Subprime Shock

Bond issuance, $ bil, annualized



March, 2007	January, 2008	September, 2008

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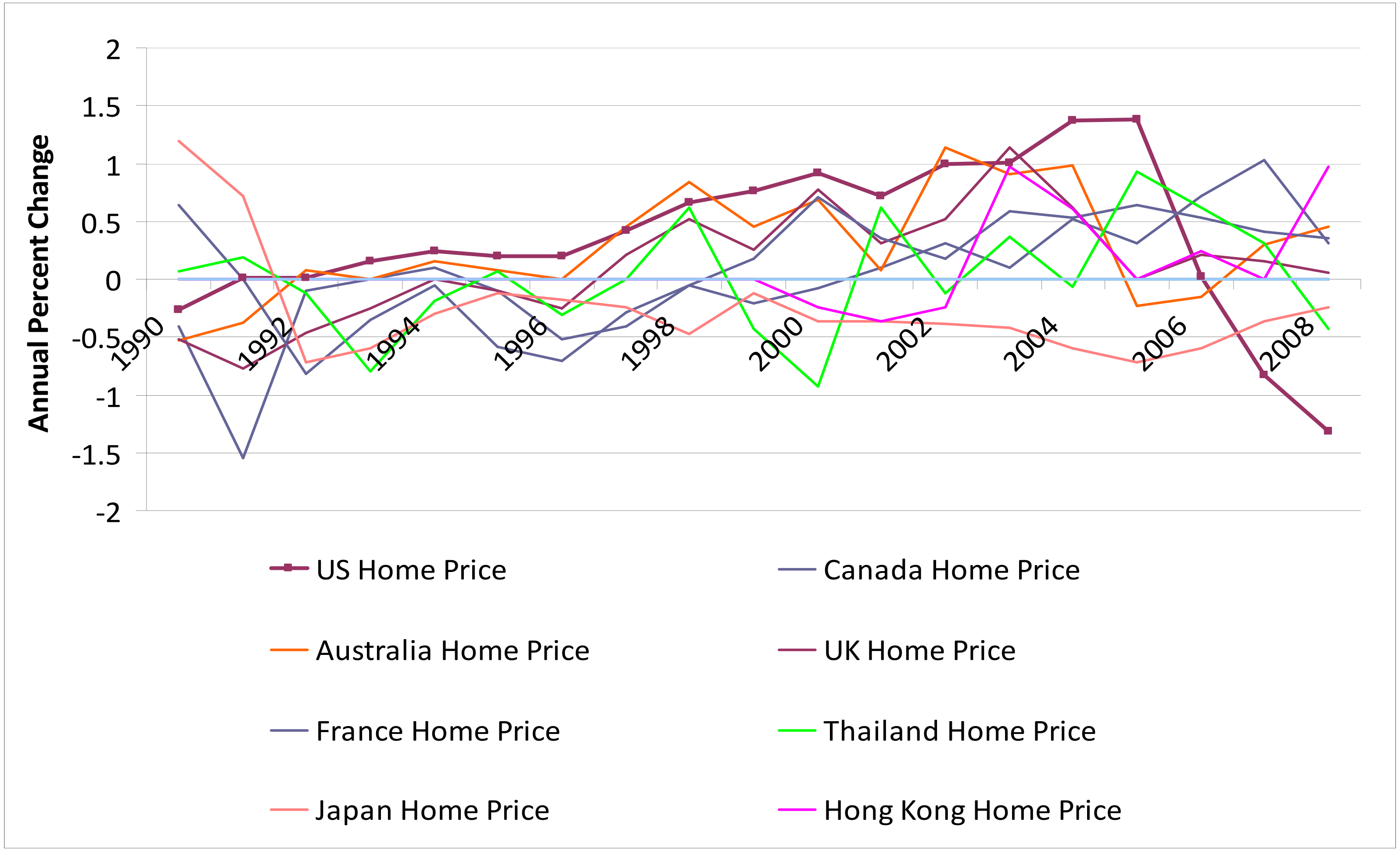
Figure 6: Price Appreciation Controlled for Volatility



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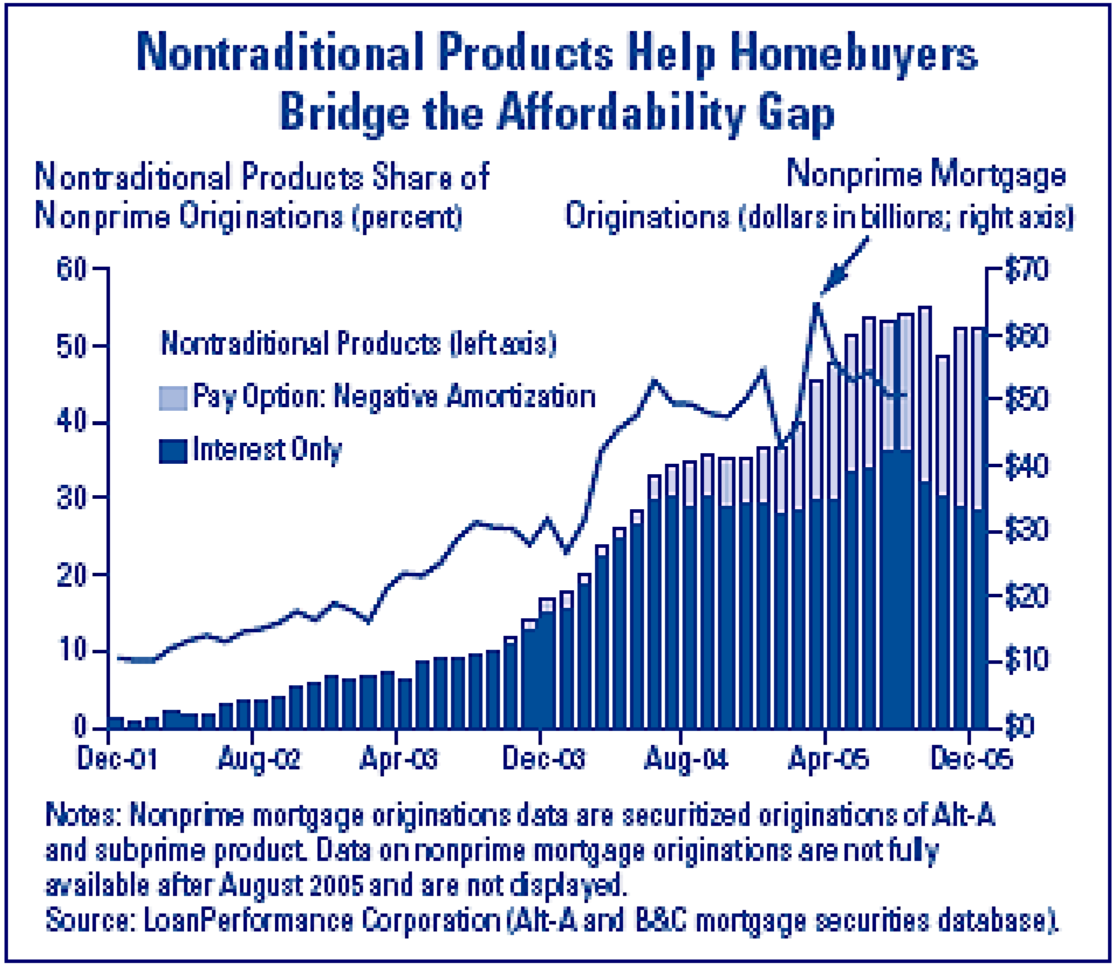
Increased use of non-traditional products



Mortgage originations by product

	FHA/VA ↓	Conv/Conf ↓	Jumbo ↓	Subprime ↑	Alt A ↑	HEL ↑
2001	***8%***	***57%***	***20%***	***7%***	***2%***	***5%***
2002	7%	63%	21%	1%	2%	6%
2003	6%	62%	16%	8%	2%	6%
2004	4%	41%	17%	18%	6%	12%
2005	3%	35%	18%	20%	12%	12%
2006	***3%***	***33%***	***16%***	***20%***	***13%***	***14%***
2007	4%	48%	14%	8%	11%	15%

Deterioration of lending standards, 2002 to 2006

ARMS

	Orig Yr	CLTV	CLTV>80	Seconds	Full Doc	IO%	DTI	FICO<700	Investor	WAC	SpdtoWAC
Prime	2002	66.4	4.1	1.9	56.0	46	31.0	20.7	0.7	5.5	-
	2003	68.2	10.1	10.9	48.6	53	31.8	21.8	1.6	4.6	-
	2004	73.5	20.7	23.1	51.2	71	33.5	22.0	2.1	4.5	-
	2005	74.1	21.7	26.8	47.3	81	33.6	18.9	1.9	5.4	-
	2006	75.3	26.2	35.3	33.6	91	37.2	19.5	2.3	6.2	-
Alt A	2002	74.3	20.8	2.7	29.3	26	35.4	46.4	9.9	6.3	0.8
	2003	78.0	33.3	23.4	28.1	56	35.3	44.7	12.9	5.6	1.0
	2004	82.6	46.9	39.1	32.6	75	36.2	44.3	15.3	5.5	1.0
	2005	83.5	49.6	46.9	28.3	83	37.0	40.5	16.5	6.0	0.6
	2006	85.0	55.4	55.4	19.0	87	38.3	44.2	13.5	6.8	0.6
Subprime	2002	81.2	46.8	3.7	66.9	1	40.0	93.4	4.7	8.5	3.0
	2003	83.5	55.6	9.9	63.5	5	40.2	91.6	4.9	7.5	2.9
	2004	85.3	61.1	19.1	59.9	20	40.6	90.6	5.3	7.1	2.6
	2005	86.6	64.4	28.1	55.9	32	41.2	89.7	5.4	7.3	1.9
	2006	86.7	64.0	31.0	54.6	20	42.1	91.8	5.7	8.2	2.0

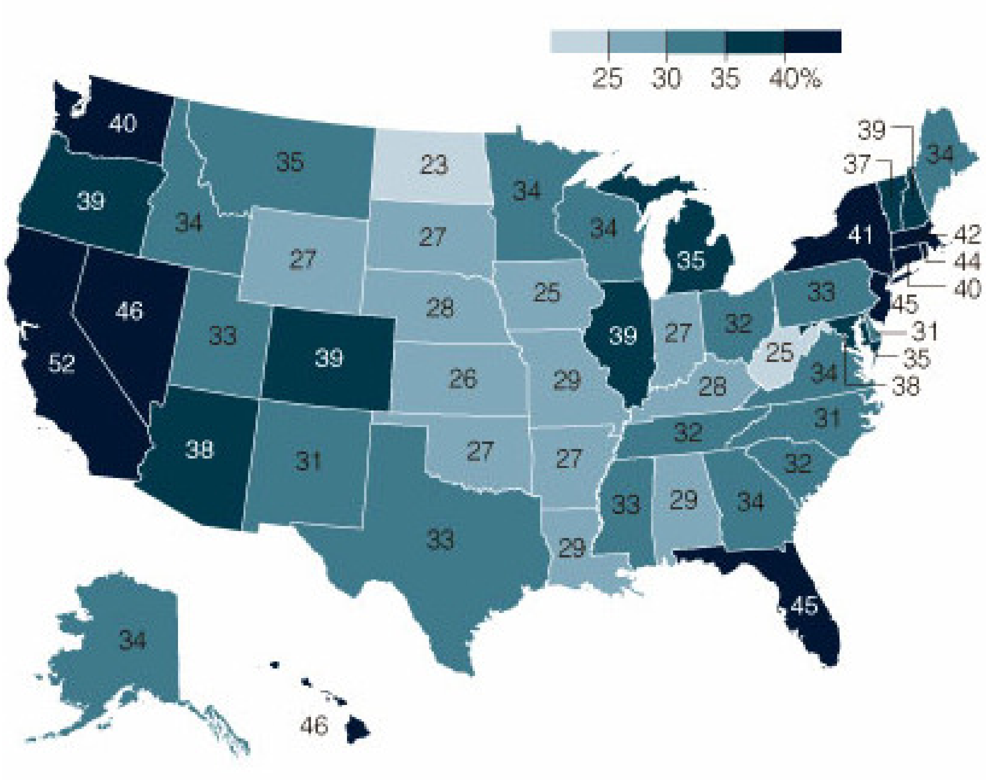
Spreads declined

Source: Loan Performance data as of November 2006. UBS, April 16, 2007, Thomas Zimmerman, "How Did We Get Here and What Lies Ahead"

CLTV, %>80 and use of Seconds increased

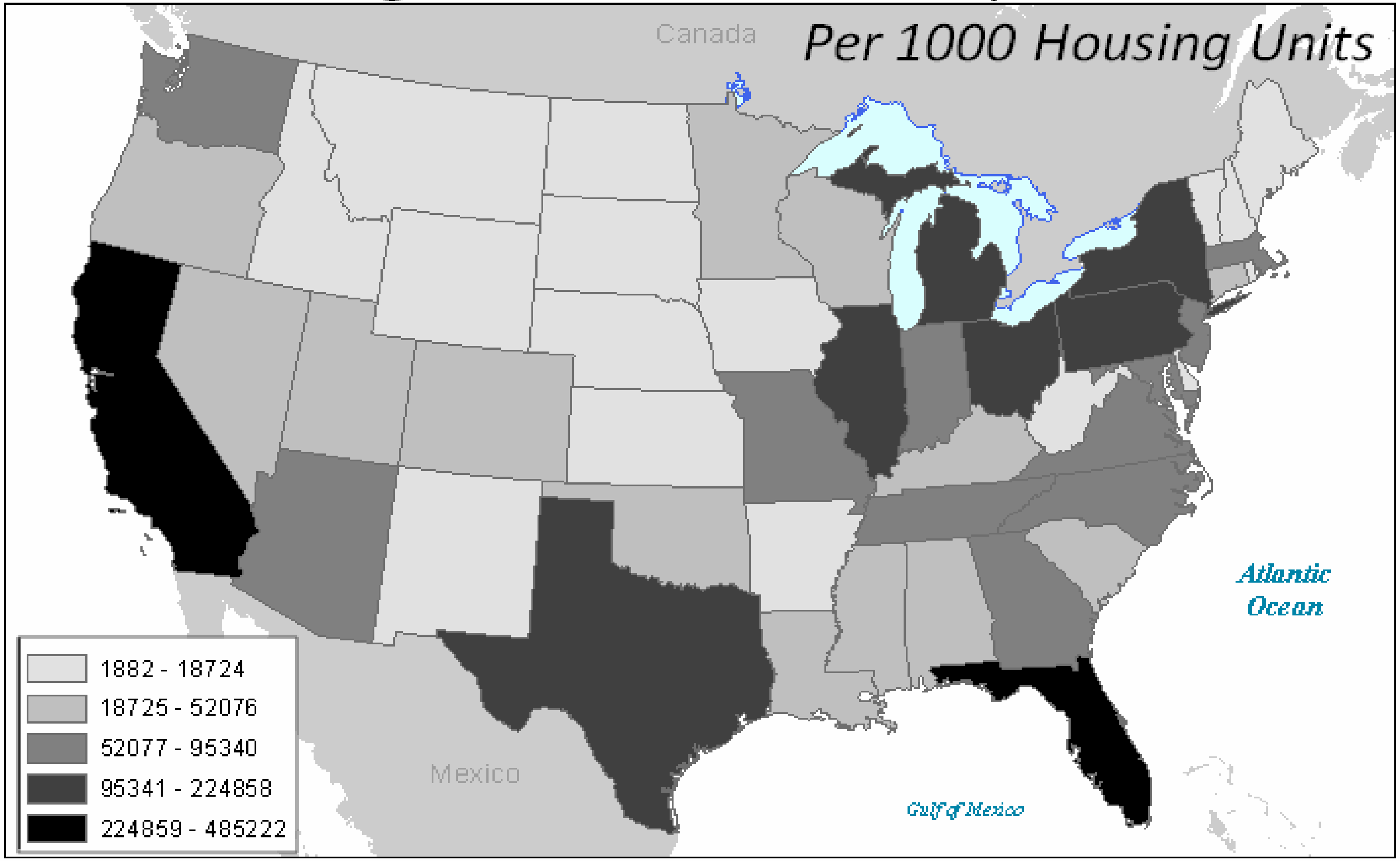
% Full Doc declined

Not much change in FICO or DTI



Sources: U.S. Census Bureau, 2006; New York Times

Fig 1: Number of Subprime Loans



Source: www.newyorkfed.org/mortgagemaps

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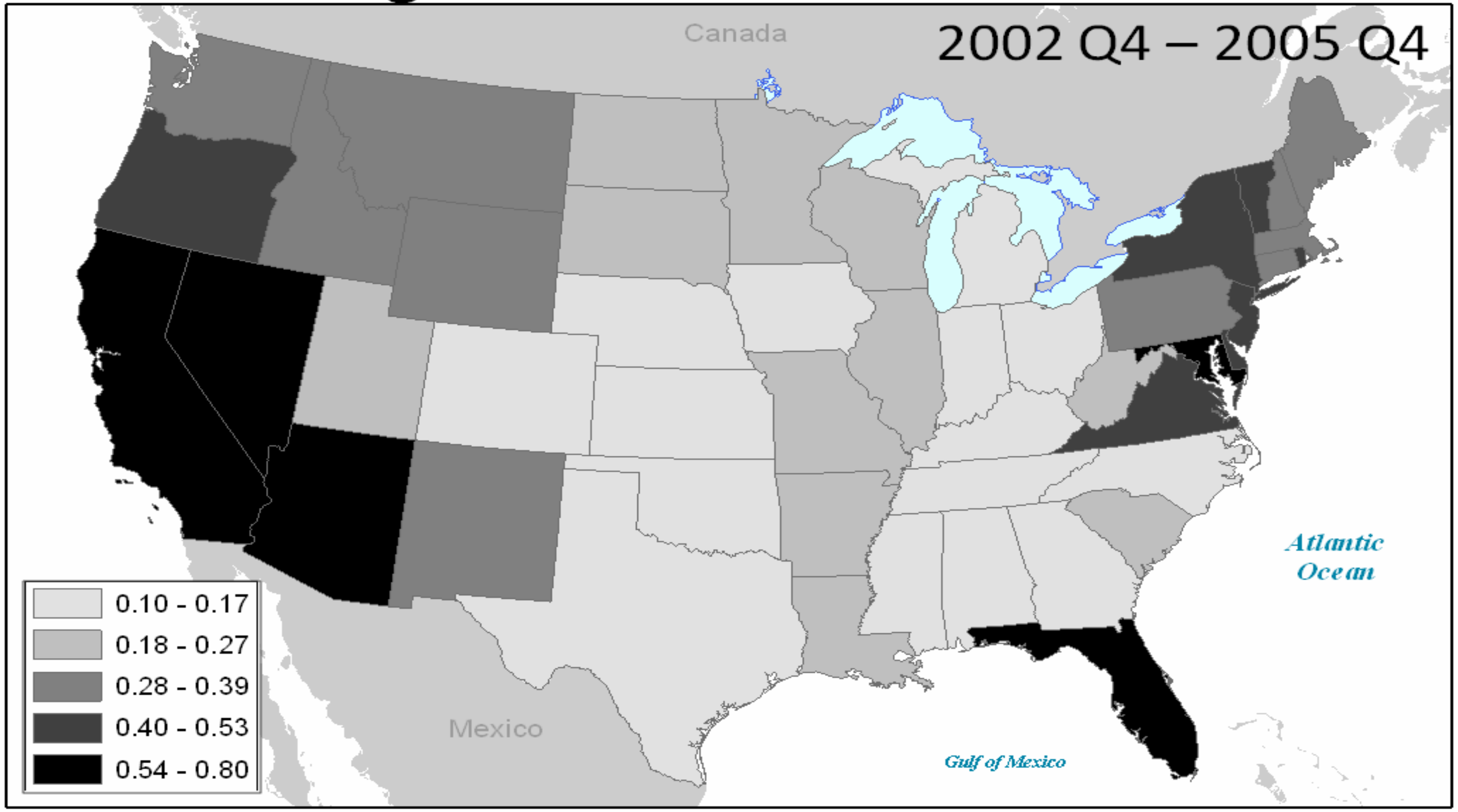
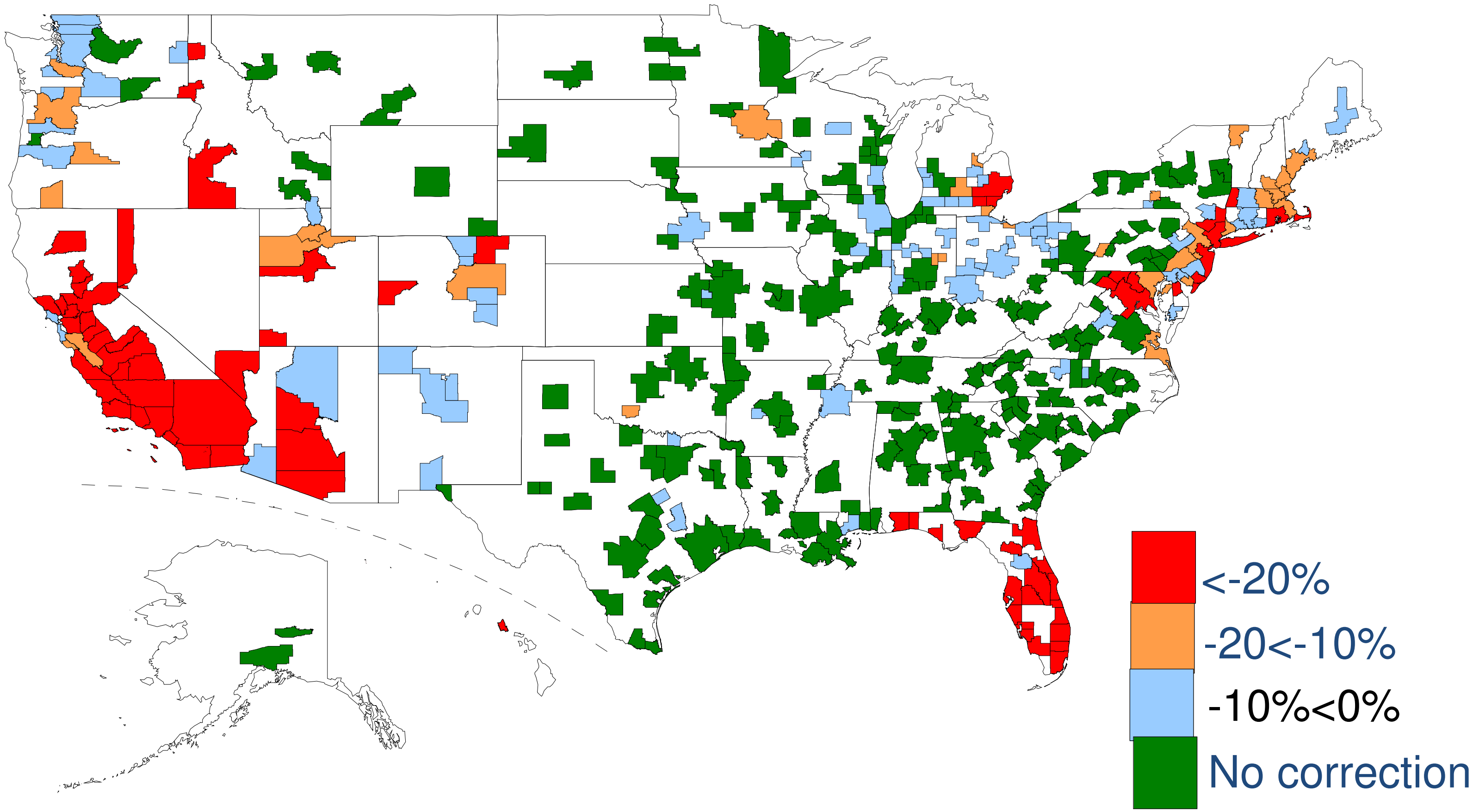
Fig 3: House Price Index: Increase

2002 Q4 – 2005 Q4



Source: www.newyorkfed.org/mortgagemaps

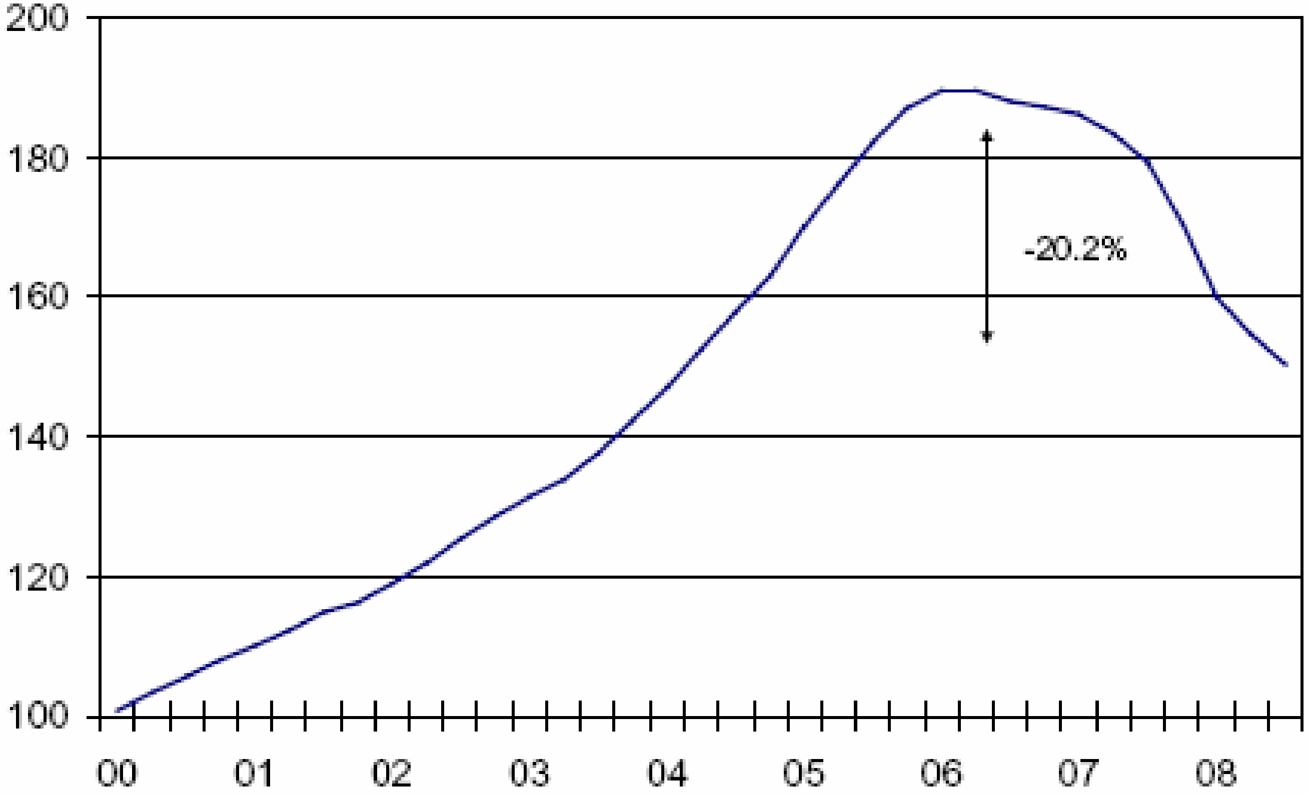
Projected peak-to-trough house-price decline, %



Sources: Fiserv Lending Solutions, Moody's Economy.com, OFHEO

A Severe National Housing Downturn

Housing Boom and Bust
Fiserv Case-Shiller National House Price Index, 2000Q1=100



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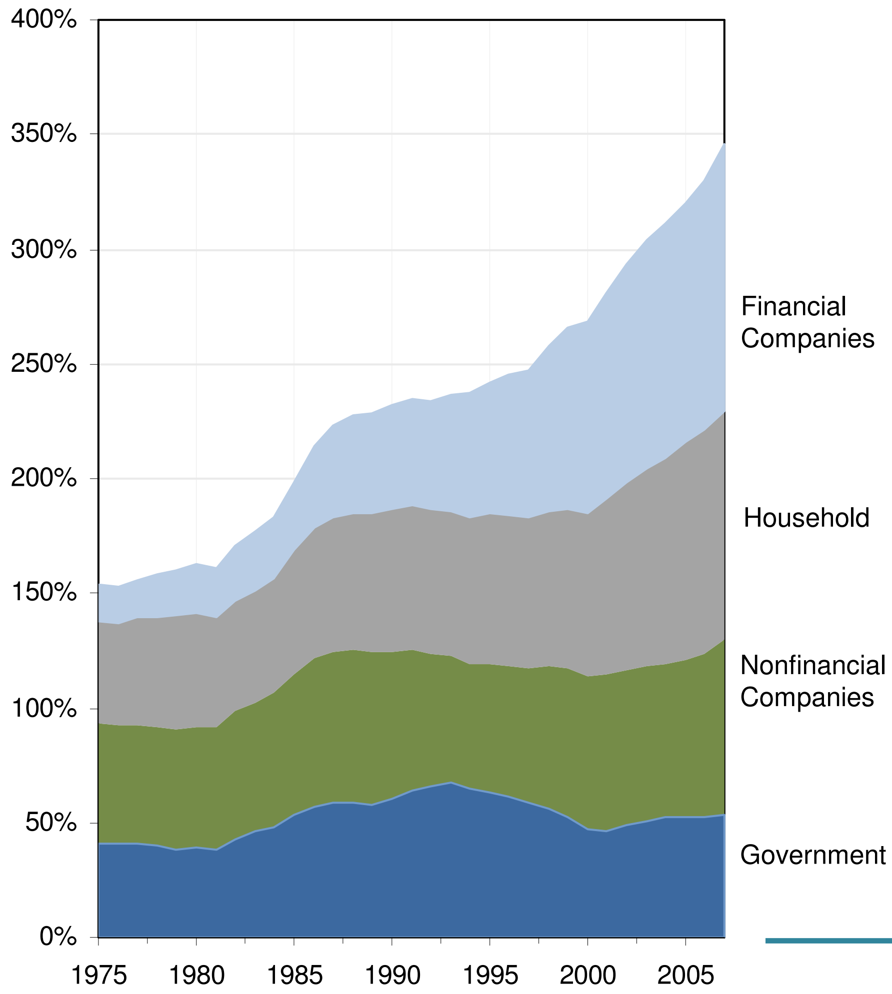
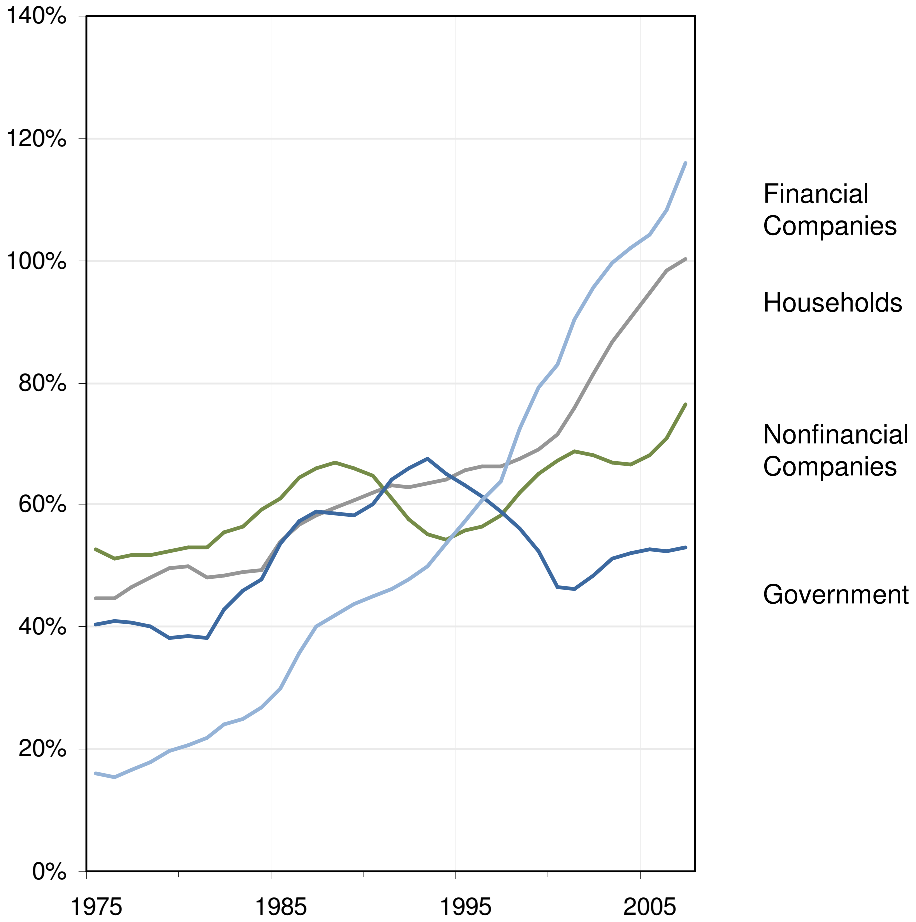
Chronic imbalances

	Gov't	Nonfinancial	Financial	Household
1975	40%	53%	16%	13%
2007	53%	76%	116%	18%

Sectoral contribution to U.S. gross debt
Percentage of GDP



Gross debt by U.S. sector
Percentage of GDP



Source: U.S. Federal Reserve, Bureau of Economic Analysis

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WHY?

- Decades of securitization, 1980-2000—no problem
- Historically-interest rate risk securitized, default risk controlled for and not priced, only prime mortgages securitized
- “Innovation:” Private label securitization of default risk
- Private label mortgage backed securities did not trade
- Priced based on Marked-to-Model paradigm **Not** Marked-to-Market,
- Market discipline absent

How did we get here?

Investors

- Lack of short sales, CDS

Borrowers

- Borrowed at teaser rates-not able/expected(?) to pay at reset

Where does the buck stop?

Rating Agencies

- Agency incentives misaligned-“current conditions” out

Originators / Brokers

- Originate to distribute

Secondary Market

- Securities marked to models not to market/assignee liability exemption

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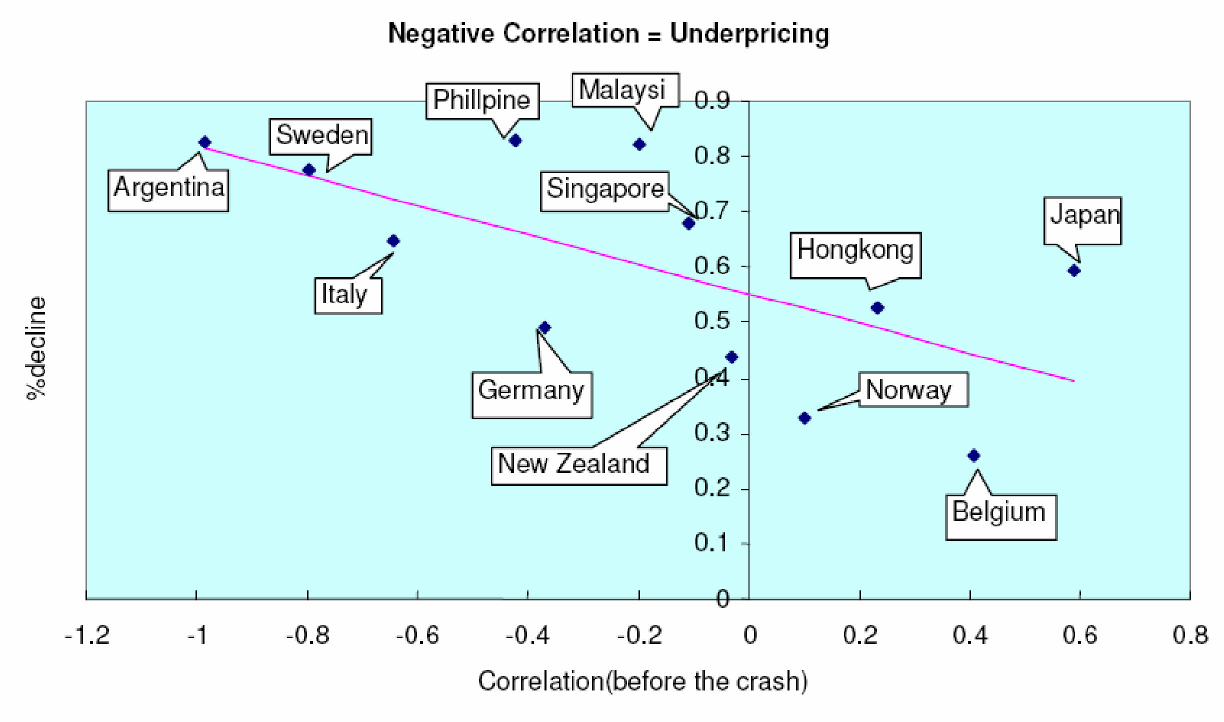
Perspective

The events of the past year or two have highlighted regulatory gaps and deficiencies that we must address to improve the structure of our markets and the resiliency of our economy. As we recover from the current crisis, it will be important to address these issues as soon as possible, to develop a regulatory structure that will better respond to future economic challenges.

--Ben Bernanke

Symptom of Underpricing vs. Total Market Crash Decline



The correlation is computed between the total index return, including dividends, and the change in the spread of lending over deposit rates. In this figure, we compute the correlation using data after the crash. The vertical axis depicts the total percent decline in the property market, from top to bottom. This is over one or more years and is specific for each country.

Source: Pavlov and Wachter, 2008

Thank You

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