What Happened Last Summer? Crisis in US Financial Markets and the Subprime Mortgage Market

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House Prices

House prices markedly appreciated in recent years, especially in coastal areas.

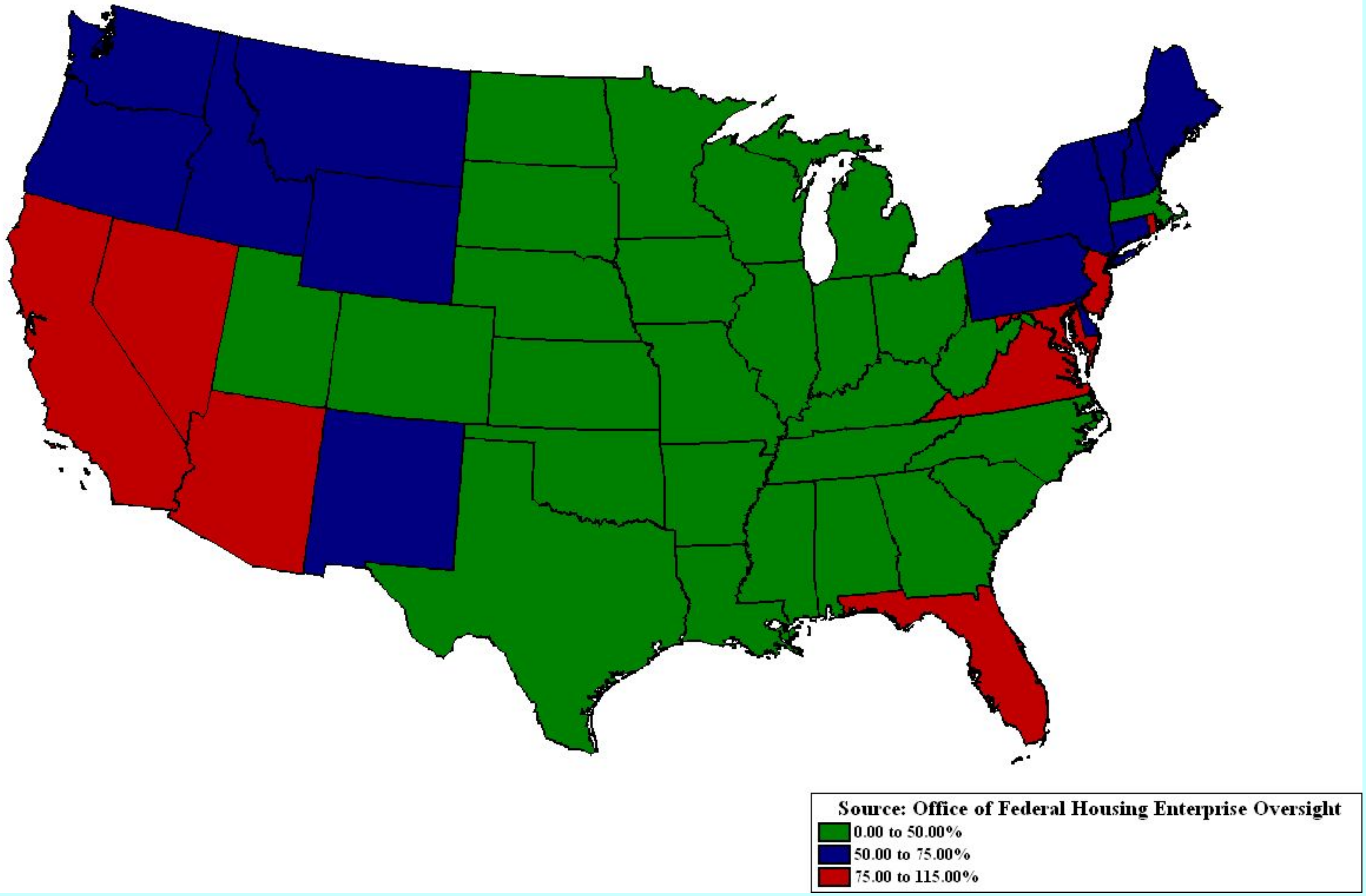
- Nationwide 5-year growth rate of 55.2 percent.
- Range: Michigan (16.2%) and DC (112.2%)

The primary drivers were:

- Low mortgage interest rates
- Income growth
- Supply constraints (primarily on the coasts)

Demographic shifts (baby boomer retirement) and speculation “piled-on” in certain areas.

Five-Year Cumulative House Price Growth by State: 2001-2006



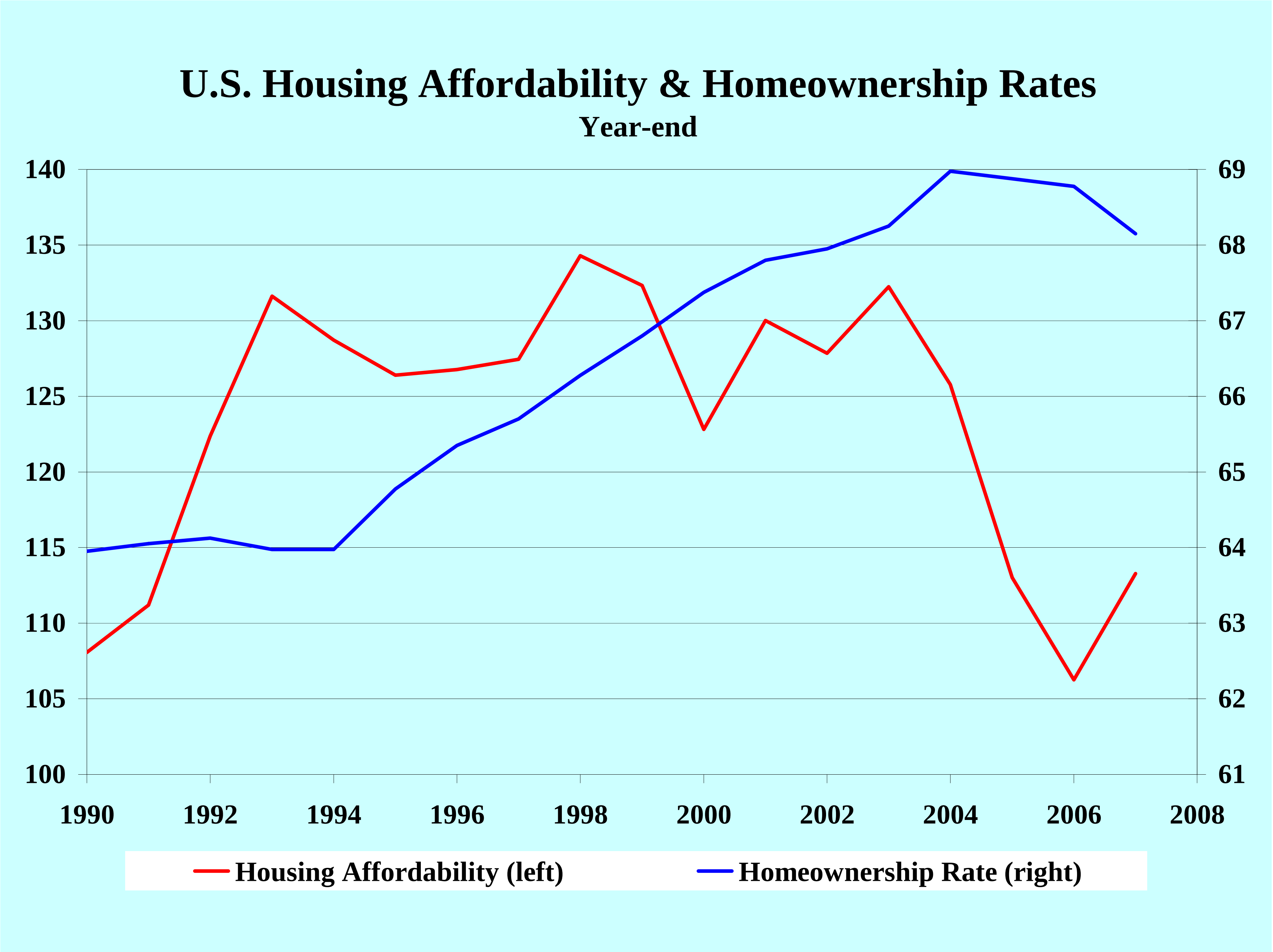
House Prices, Housing Affordability, and Homeownership Rates

As house prices increased, traditional housing affordability measures declined.

“Affordability” determined by median house price, median household income, prevailing mortgage rates, and typical (30-year, prepayable, fully-amortizing) mortgages.

However, homeownership rates actually increased!

One important reason: a significant expansion in the use of “subprime” and/or “exotic” mortgage finance.



U.S. Housing Affordability & Homeownership Rates
Year-end
140
135
130
125
120
115
110
105
100
69
68
67
66
65
64
63
62
61
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
Housing Affordability (left)
Homeownership Rate (right)

Subprime & Exotic Mortgage Finance

Subprime borrower characteristics:

- Low credit scores
- High loan-to-value
- High debt-to-income
- Low/No income verification

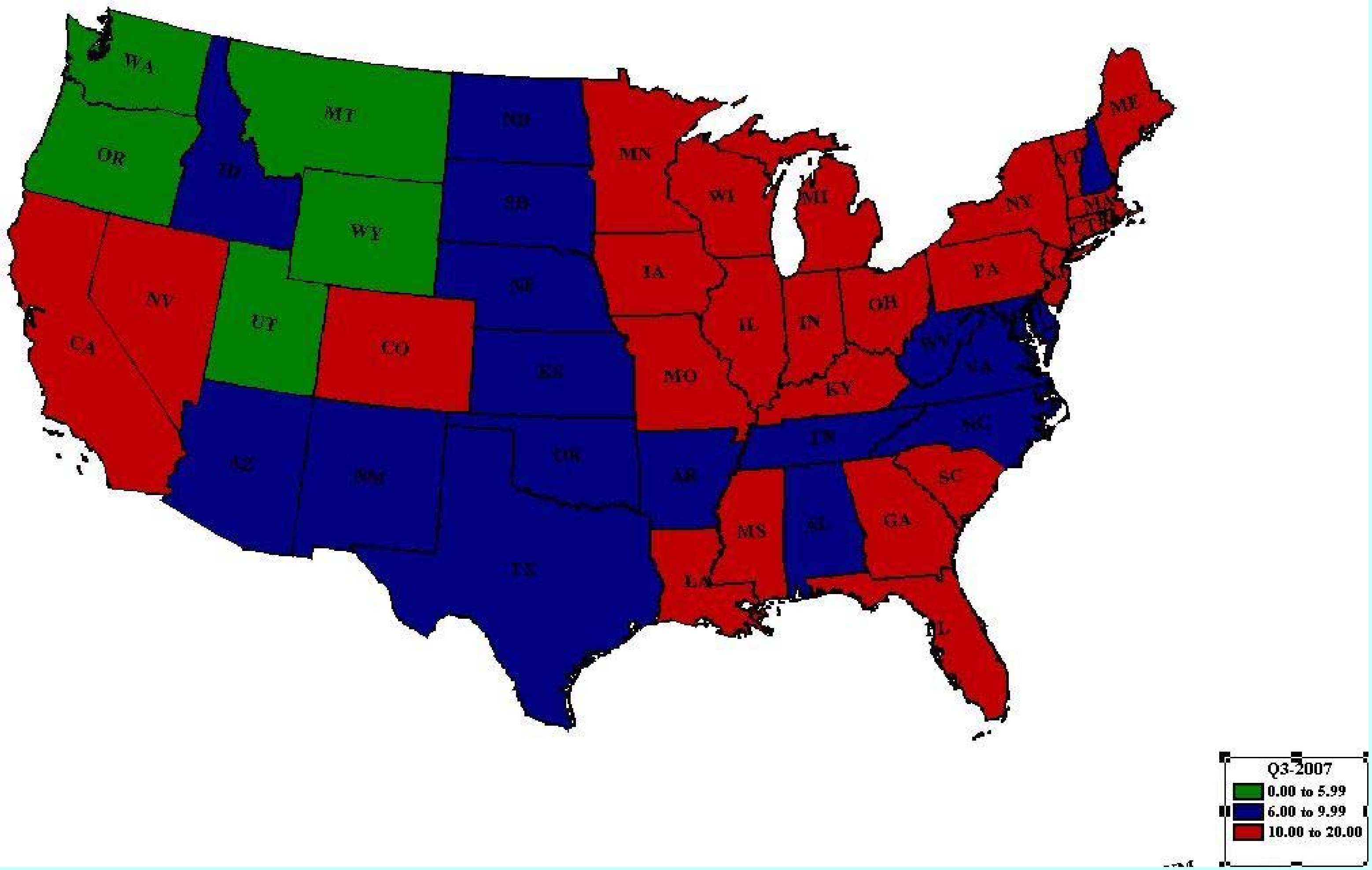
Exotic product features:

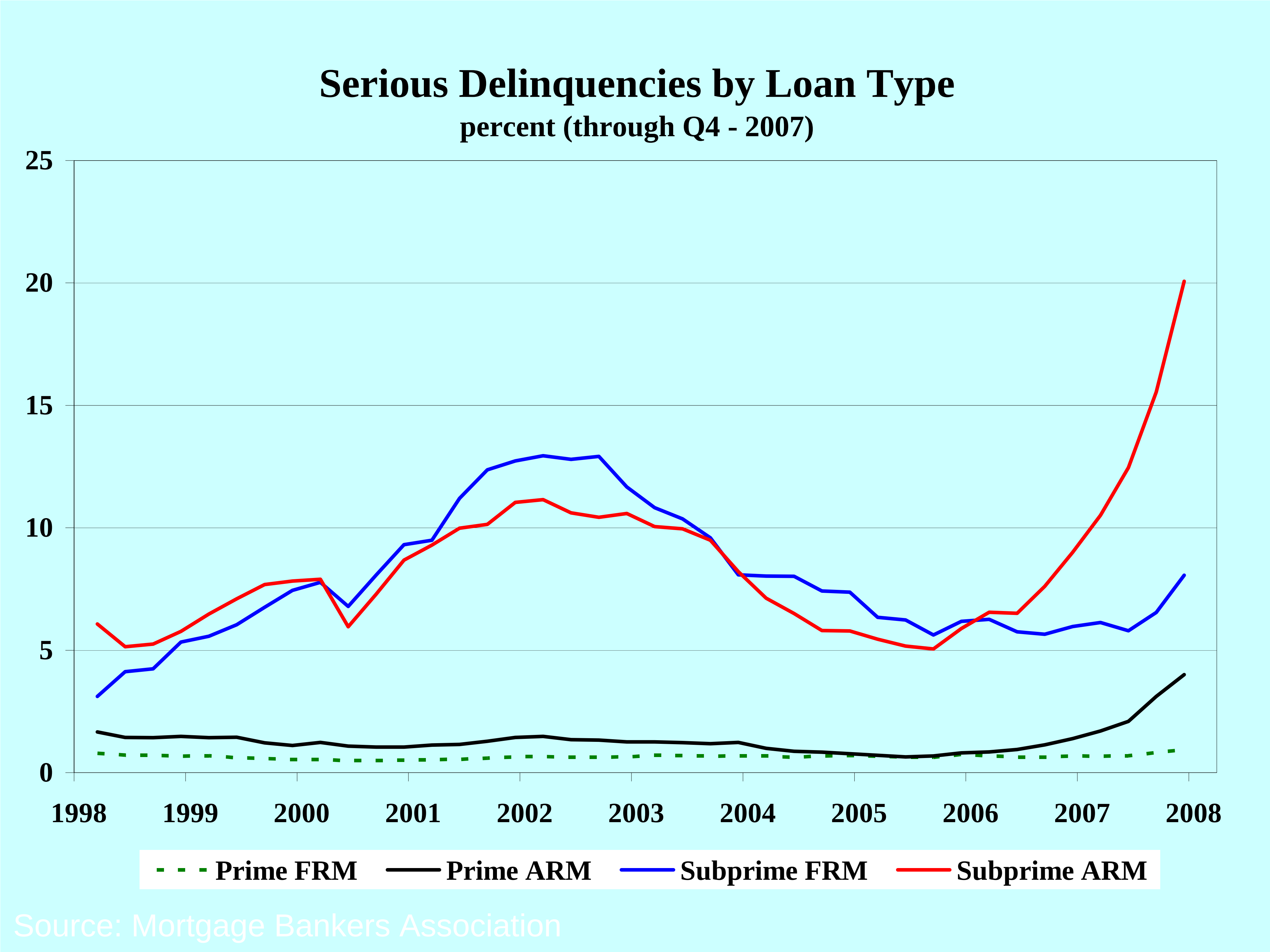
- Hybrid ARMs with short resets and prepay penalties
- Interest-Only (negative amortization)
- Pay-Option (adjustable)
- 40-Year amortization schedules

So What Happened?

- Underwriting standards deteriorated.
  - Subprime loans made in 2006 are the worst performing vintage on record – some never made a single payment!
- House price appreciation slowed markedly, flattened in 2007, and has gone negative in 2008.
  - Gone very negative in places like CA, FL, NV, AZ
- This resulted in a dramatic upswing in serious delinquencies for subprime mortgages.

Serious Delinquency Rates on Subprime Mortgages by State: Third Quarter 2007




Serious Delinquencies by Loan Type
percent (through Q4 - 2007)
25
20
15
10
5
0
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
Prime FRM
Prime ARM
Subprime FRM
Subprime ARM
Source: Mortgage Bankers Association

Fallout: Borrowers

- Subprime adjustable-rate loans seem to be the primary source of concern.
- Furthermore, those originated in 2005-2006 are facing interest rate resets -- $472 billion re-setting before year-end 2008.
- Concerns that these resets would cause defaults, but monetary policy is cushioning this.
- Nevertheless, tighter underwriting standards and stagnant to falling house prices impede refinancing.
- Areas with significant house price depreciation are seeing many borrowers “walking-away” from their homes.

Fallout: Lenders

Subprime non-bank lenders rely on short-term borrowing and then securitization for funding.

As credit quality deteriorated due to “early payment defaults” in early 2007 …

Balance sheets of non-bank lenders weakened, funding disappeared, and bankruptcy or sale ensued.

Bank-affiliated lenders, like Countrywide and Washington Mutual, have also been seriously hurt but remain liquid.

Fallout: Investors

Financial market participants increasingly bearish about subprime mortgage quality.

-- Rating agencies have conducted massive downgrades of mortgage securities.

Most exposed Investors (directly or indirectly) appear to be global banks, bond insurers, government-sponsored enterprises, and hedge funds.

-- Large losses posted by Citigroup, Freddie Mac, Merrill Lynch, UBS

-- Failure of Bear Sterns – not out of the woods yet.

-- Material financial problems remain.

Resolution?

Federal response:

1.) Federal Reserve provides liquidity – open market operations and “discount window” loans were just the start

2) Term Auction Facility, Term Securities Lending Facility, the Primary Dealers

3.) New restrictions on subprime lending – federal bank regulators’ nontraditional mortgage guidance.

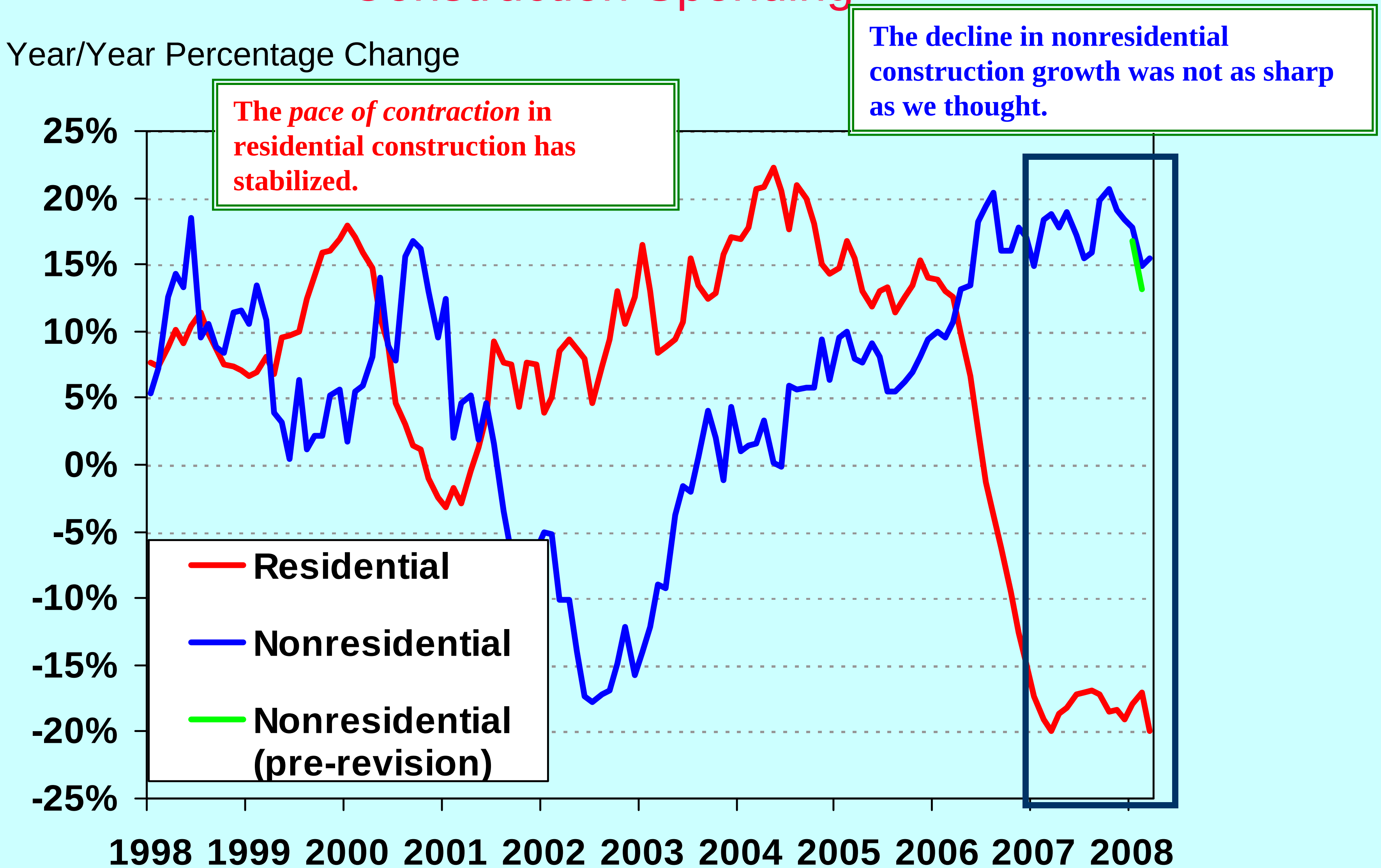
4.) Help “stranded” borrowers obtain refinancing or loan modifications.

Recent Indicators are weak

- **New Home Sales, Existing Home Sales – down over 50 percent and 40 percent respectively from their mid-2005 peaks of 1.4 and 7.2 million units per year.**
  - **Now, sales are around 0.6 and 5.0 million units**

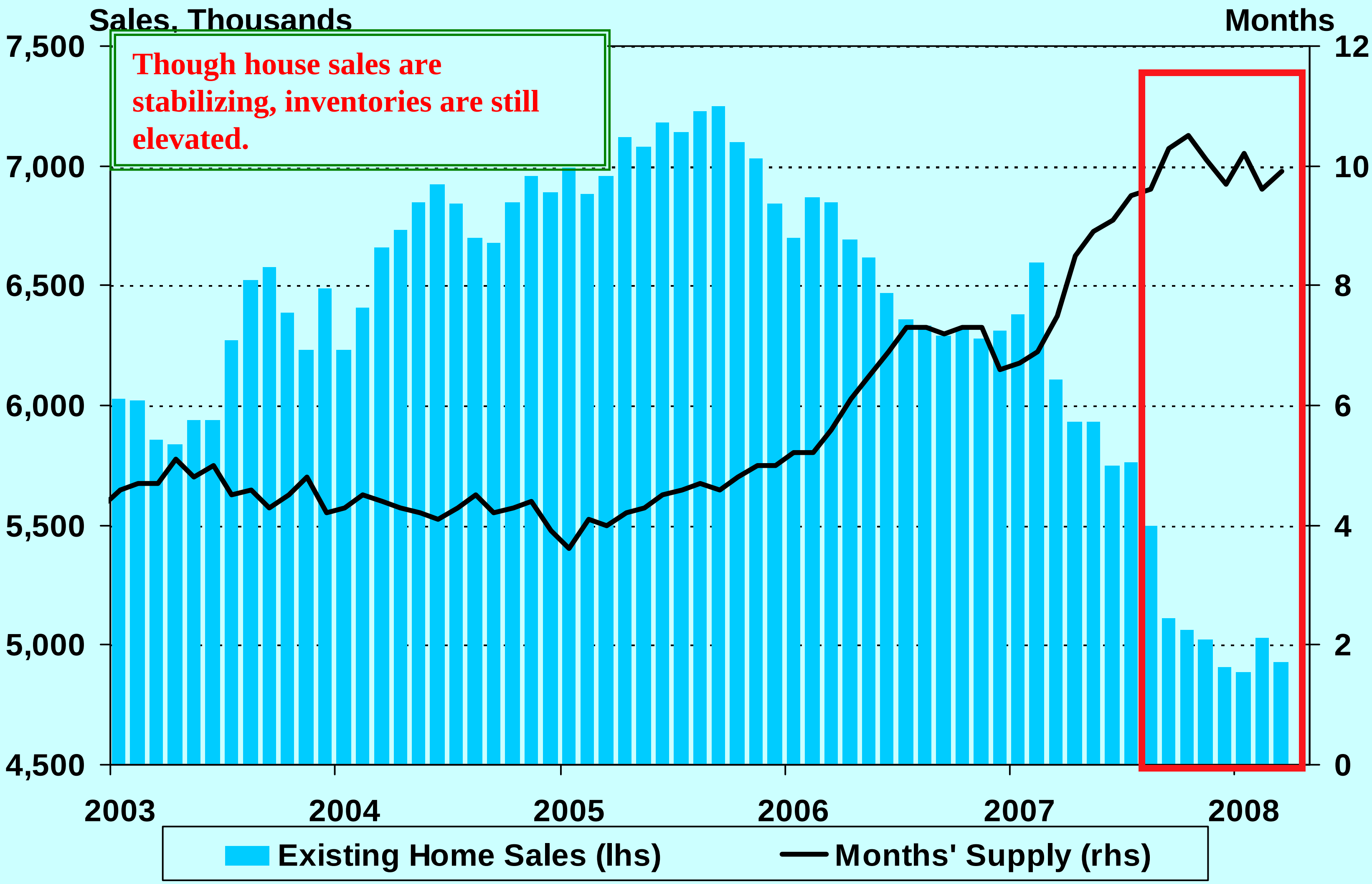
- **First quarter 2008 residential investment fell at an annual rate of 26.7%**
  - **The largest decrease since 1981**

Construction Spending



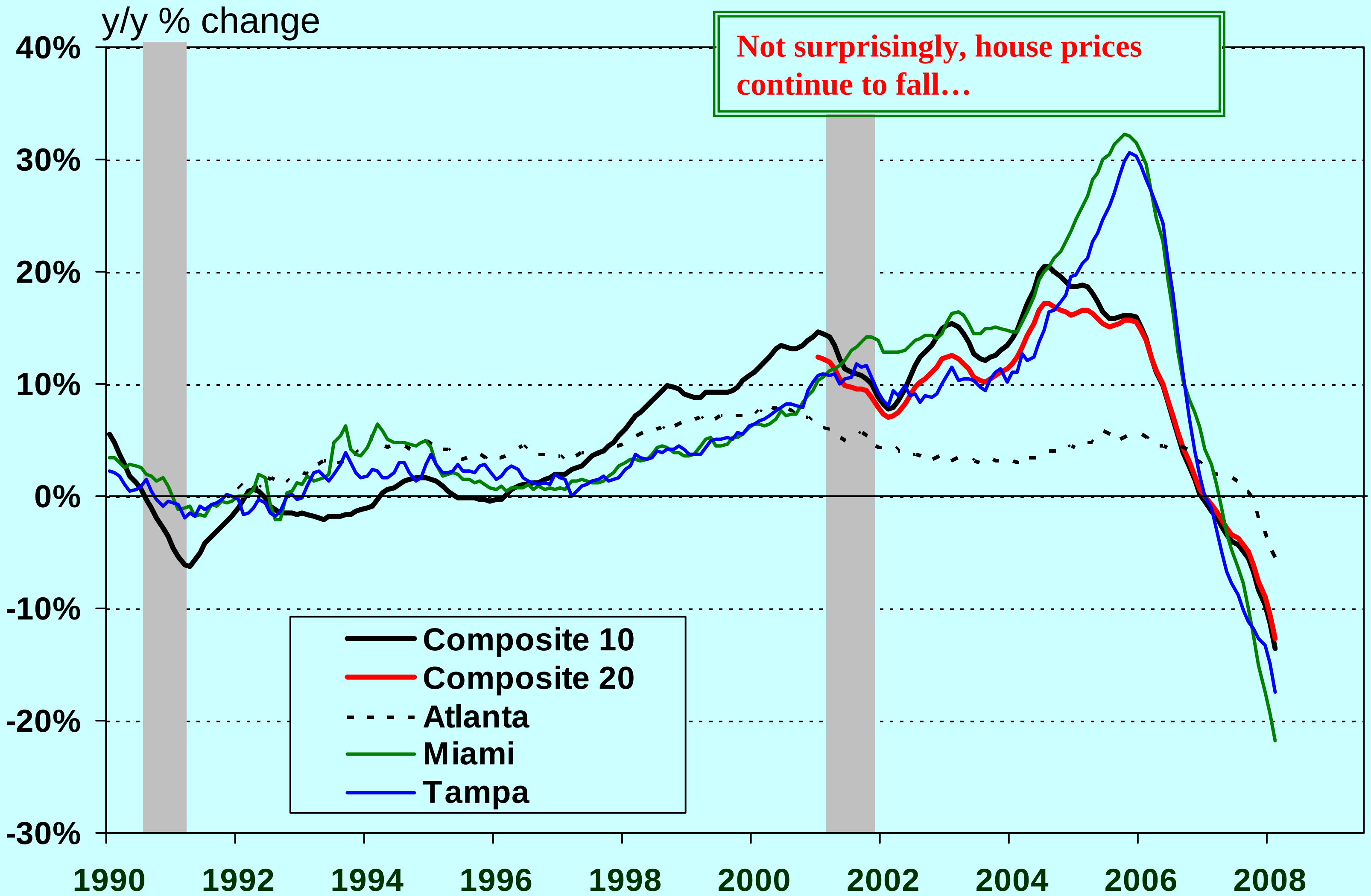
Source: Census Bureau

Existing Home Sales & Months' Supply

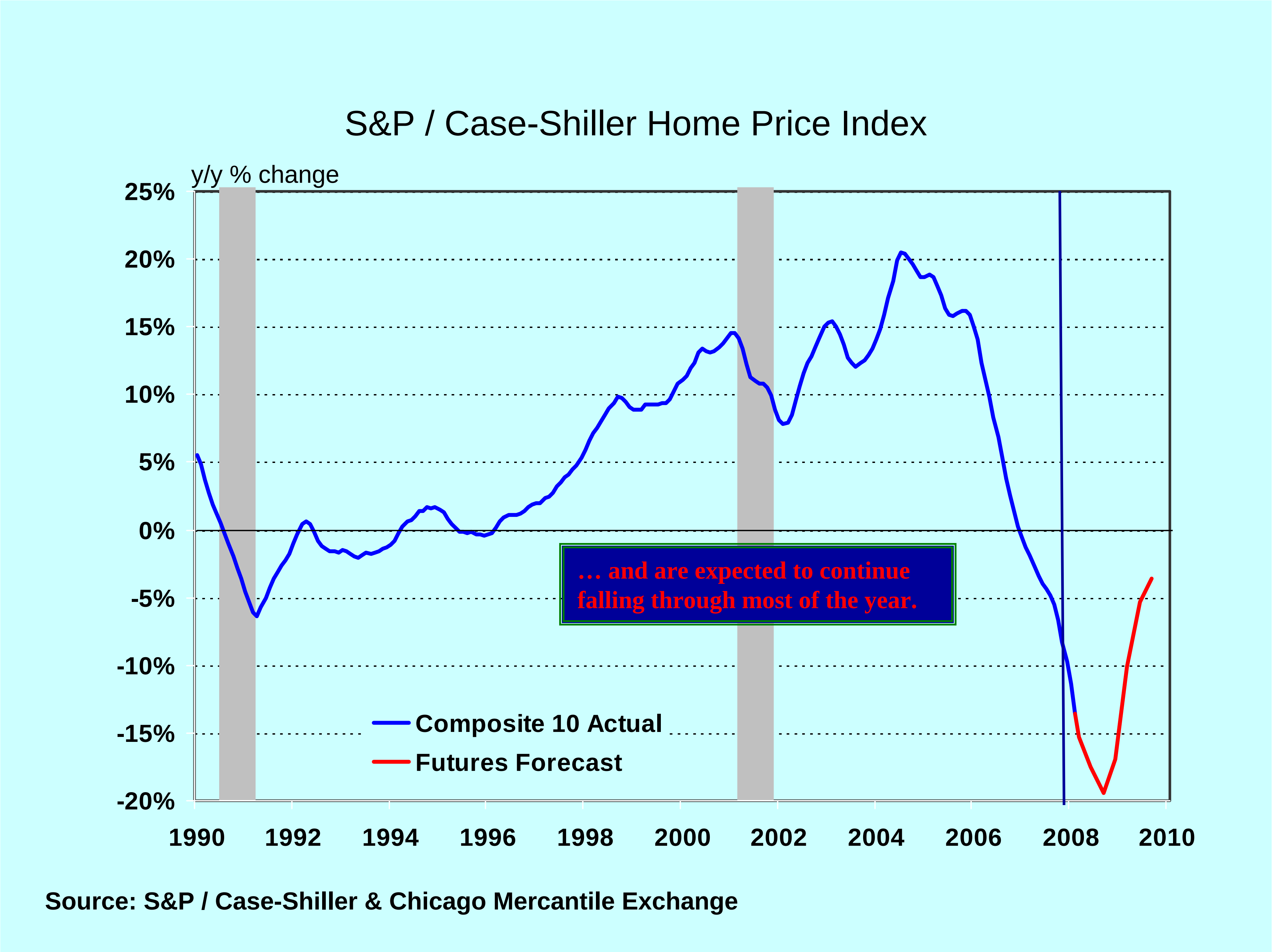


Source: National Association of Realtors

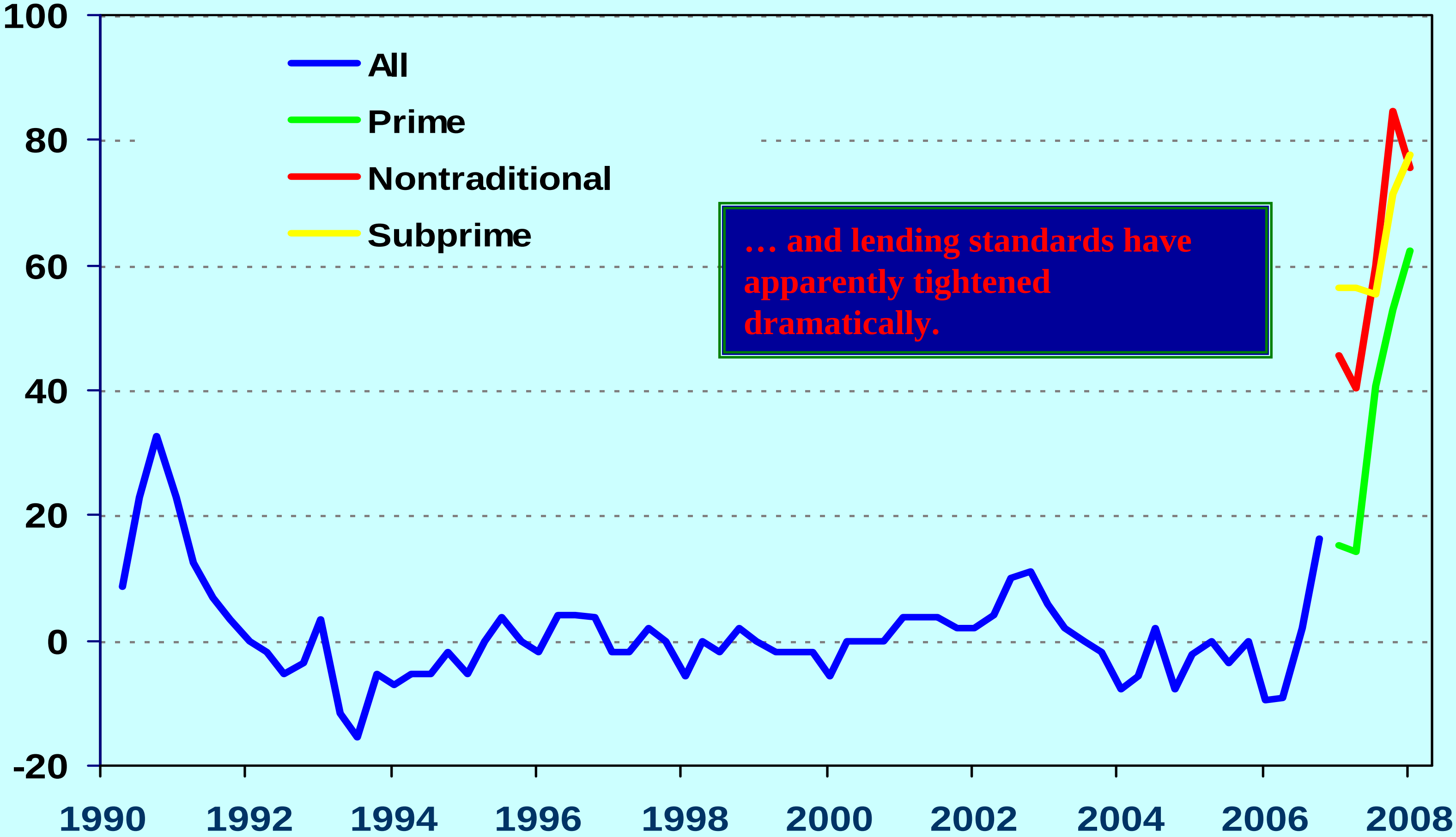
S&P / Case-Shiller Home Price Indexes



Source: S&P / Case-Shiller


S&P / Case-Shiller Home Price Index
y/y % change
25%
20%
15%
10%
5%
0%
-5%
-10%
-15%
-20%
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
… and are expected to continue falling through most of the year.
Composite 10 Actual
Futures Forecast
Source: S&P / Case-Shiller & Chicago Mercantile Exchange

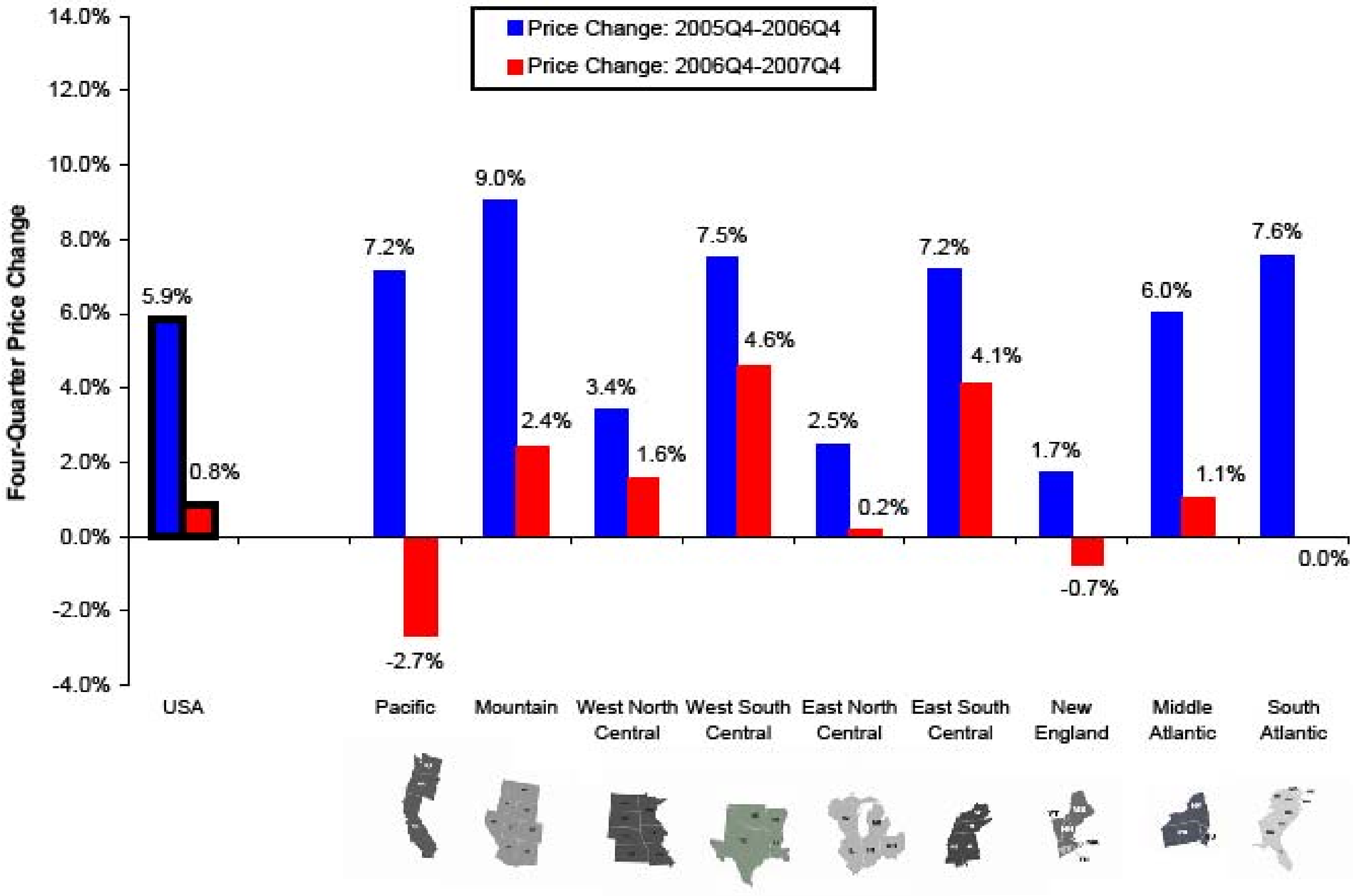
Net Percentage of Domestic Respondents Tightening Standards for Mortgage Loans



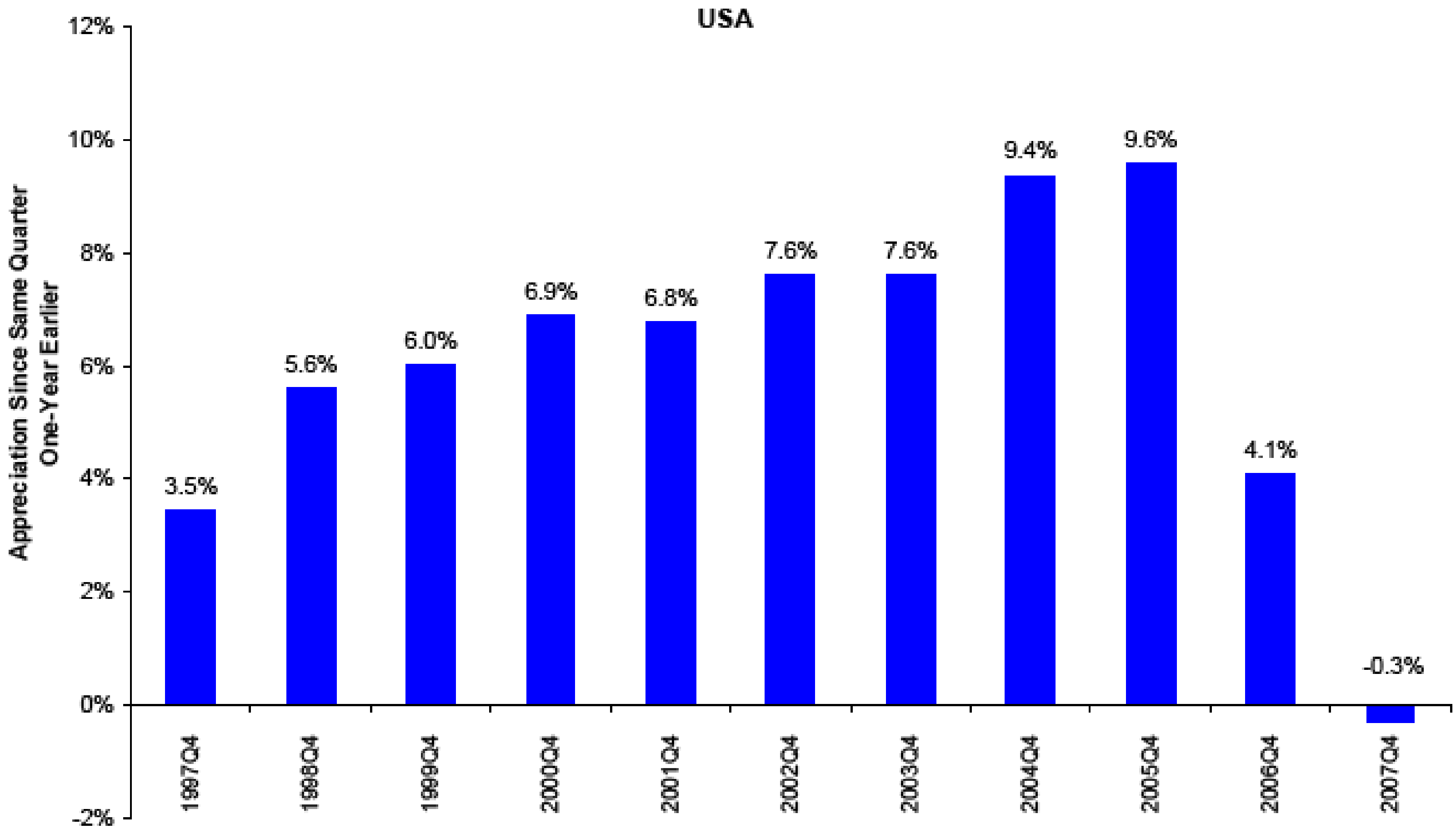
Source: Federal Reserve Board, Senior Loan Officer Opinion Survey

Four-Quarter Appreciation Rates: Most Recent Year vs. Prior Year

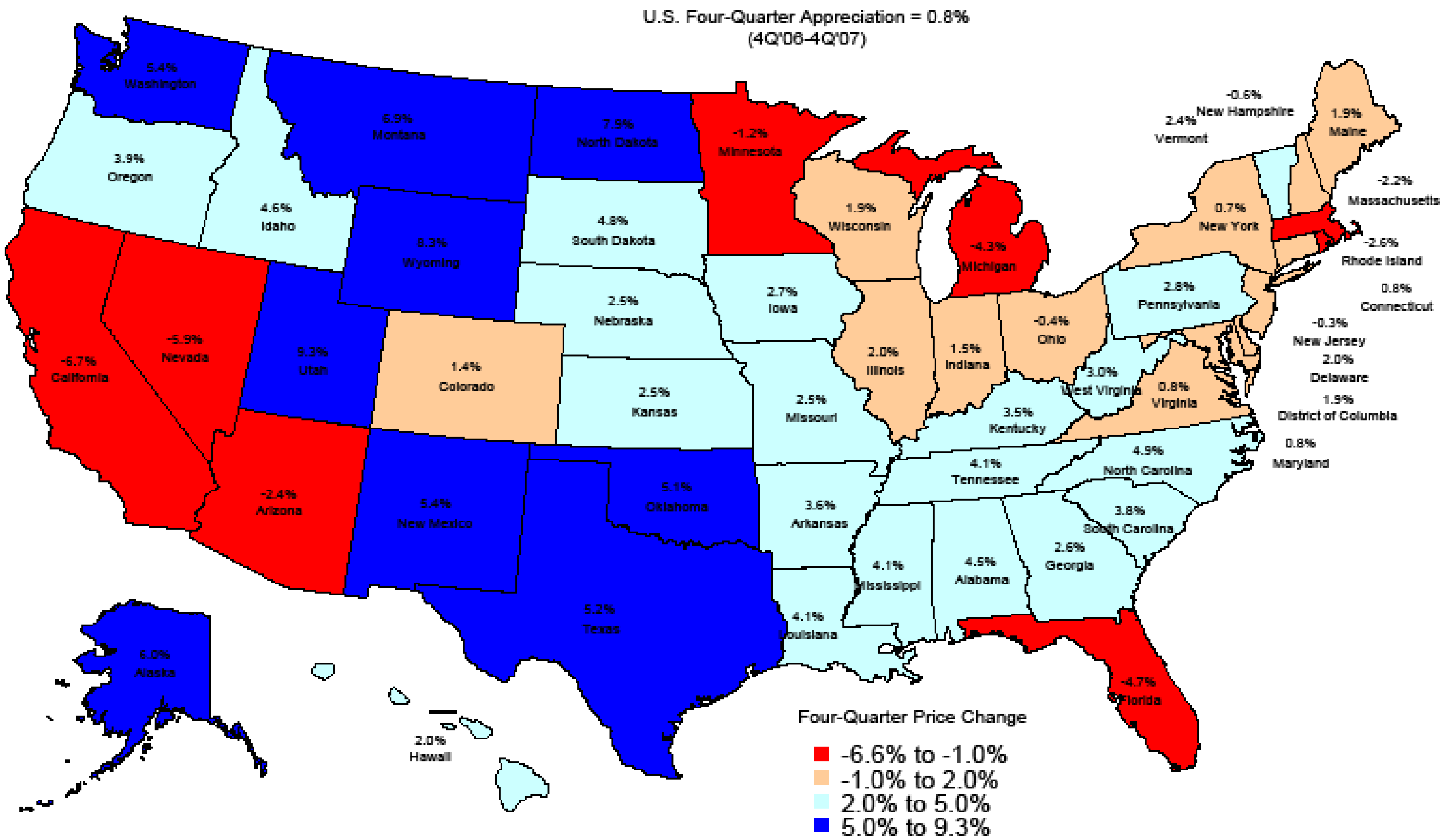
Estimates from HPI (Refinance and Purchase Data Included)



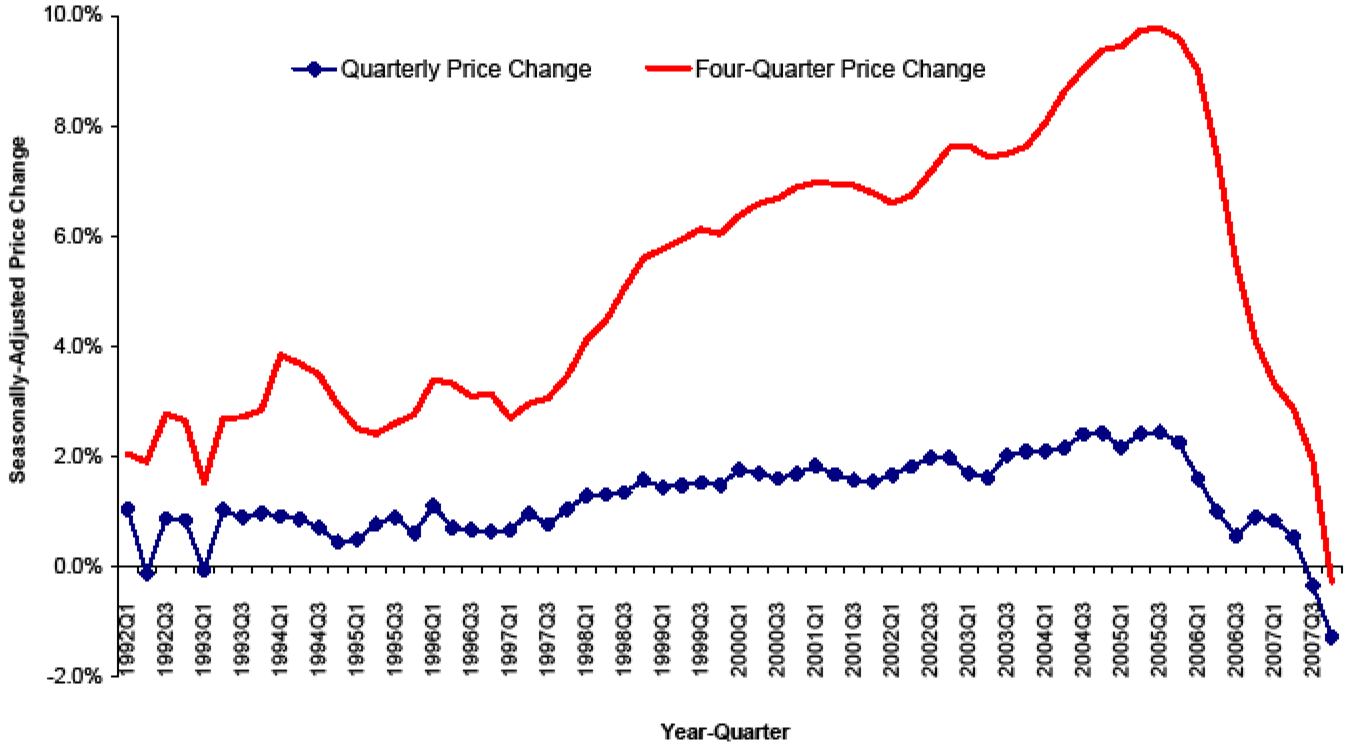
HOUSE PRICE APPRECIATION OVER PREVIOUS FOUR QUARTERS
(Purchase-Only Index)



Four-Quarter Price Change by State
OFHEO HPI (Uses Purchase Prices and Appraisal Valuations)



OFHEO HOUSE PRICE INDEX HISTORY FOR USA
Seasonally-Adjusted Price Change Measured in Purchase-Only Index



Tentative Outlook

1.) Housing remains a drag on the economy.

Looking ahead: expect housing to continue to be weak at least through 2009.

2.) House price growth has been flat to negative;

Looking ahead: expect house prices to fall and flatten during the weak housing market period.

3.) Financial markets have more slogging through the entrails before a noticeable recovery takes hold