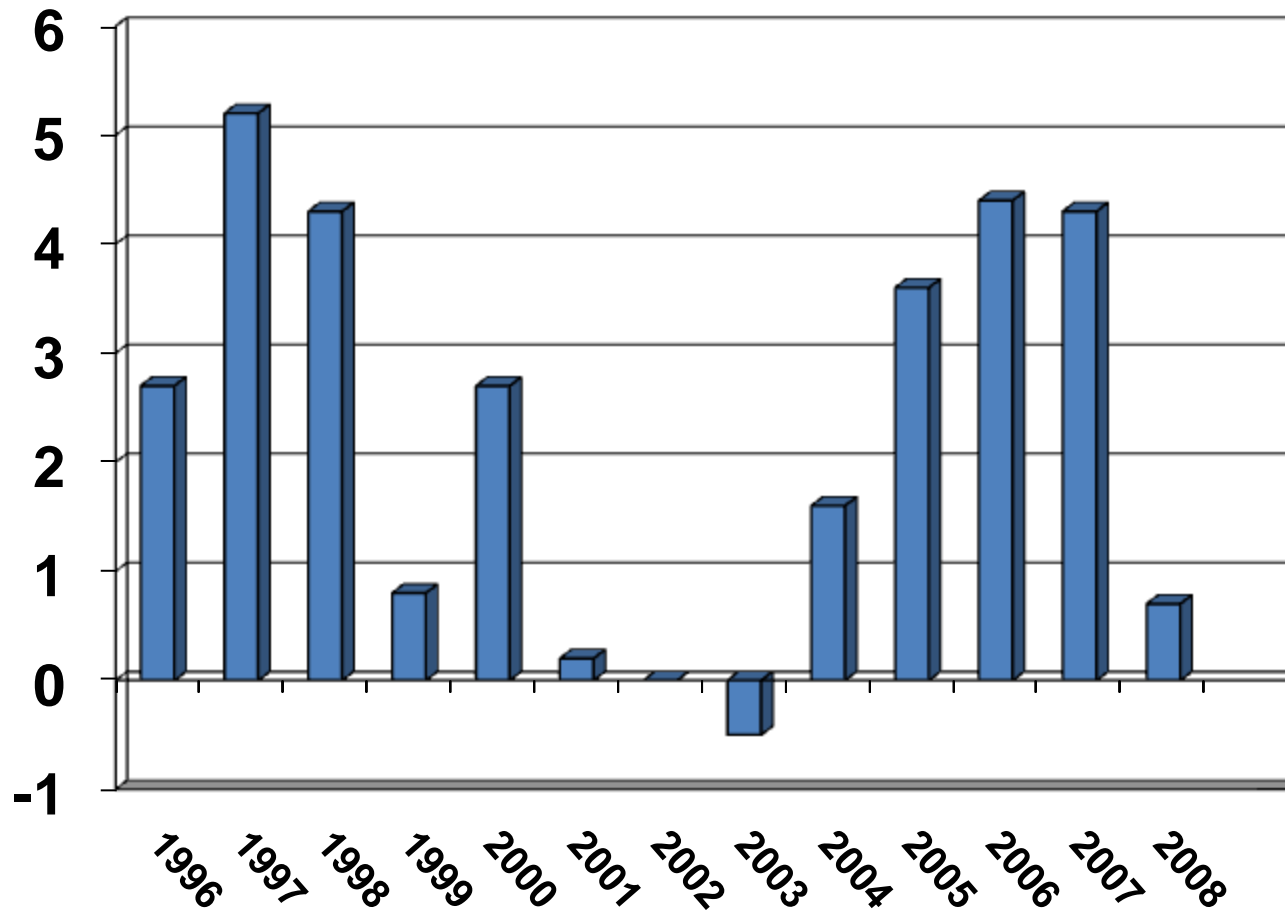


Houston at the End of the Commodity Boom

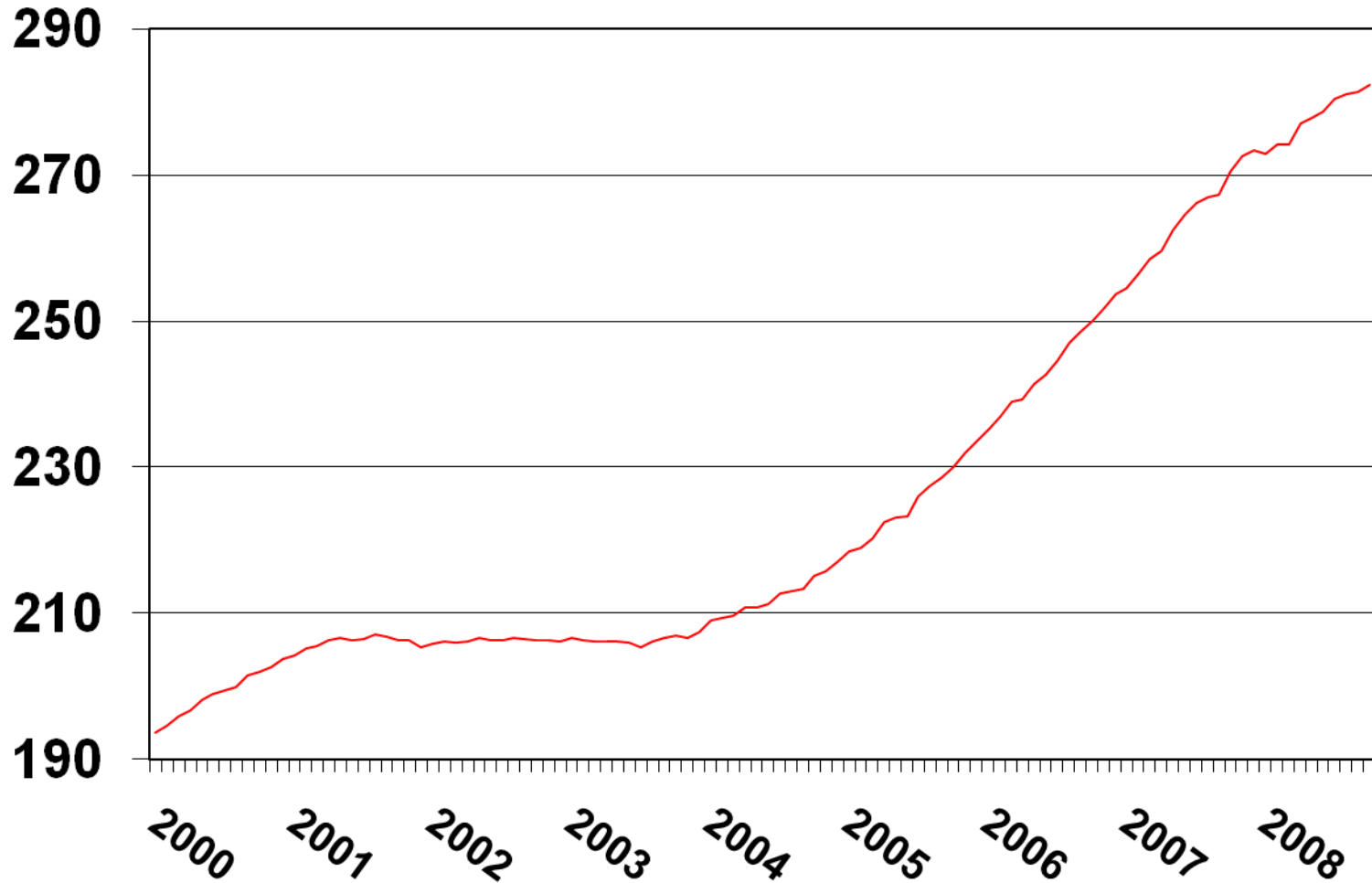
Robert W. Gilmer
Vice President and Senior Economist
Federal Reserve Bank of Dallas
March 2009

Percent Change in Houston Employment, 1996-2008

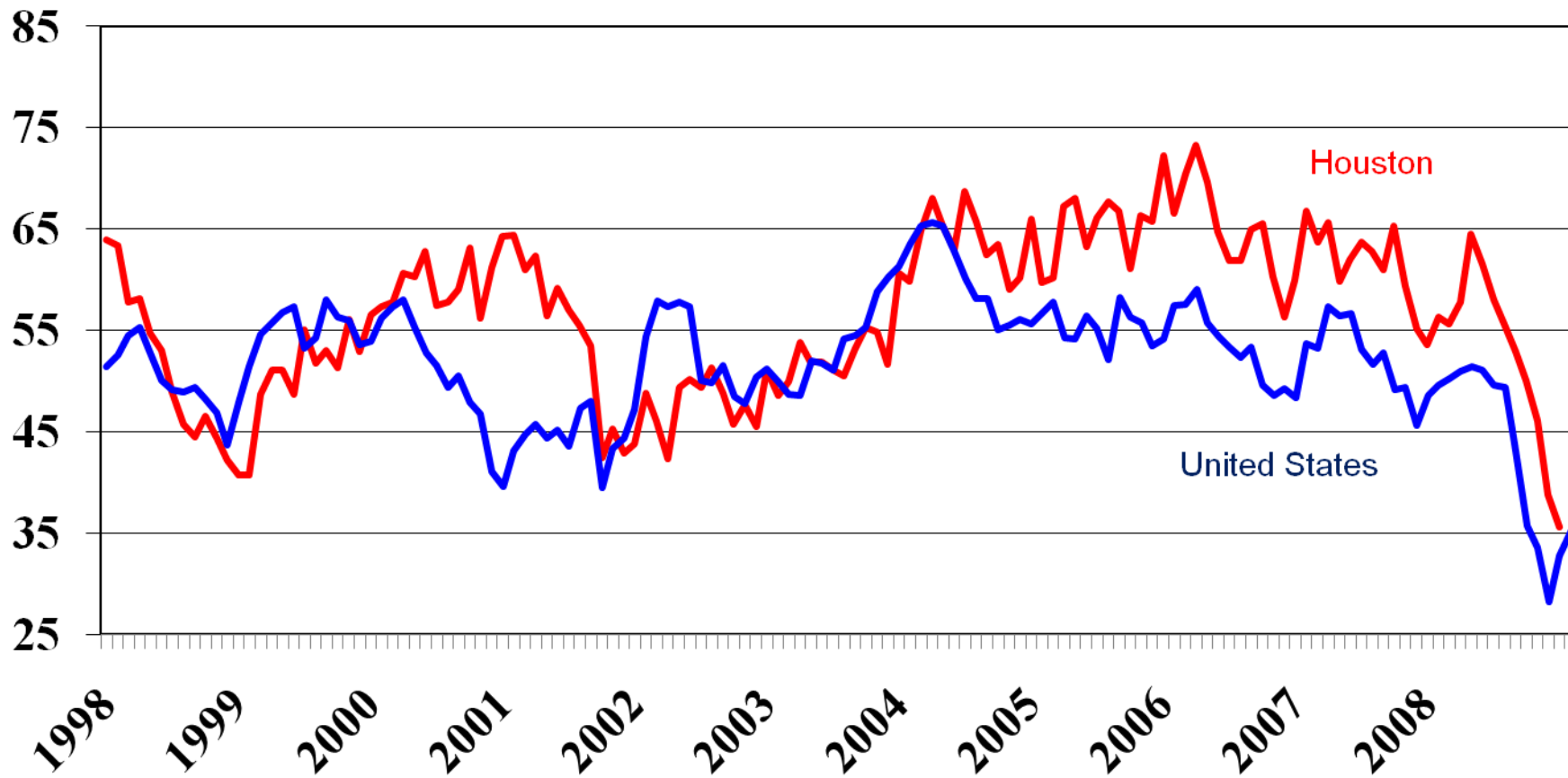


Note: December to December changes, except 2008 which is year-to-date

Houston Index of Coincident Economic Activity: 2000 - present

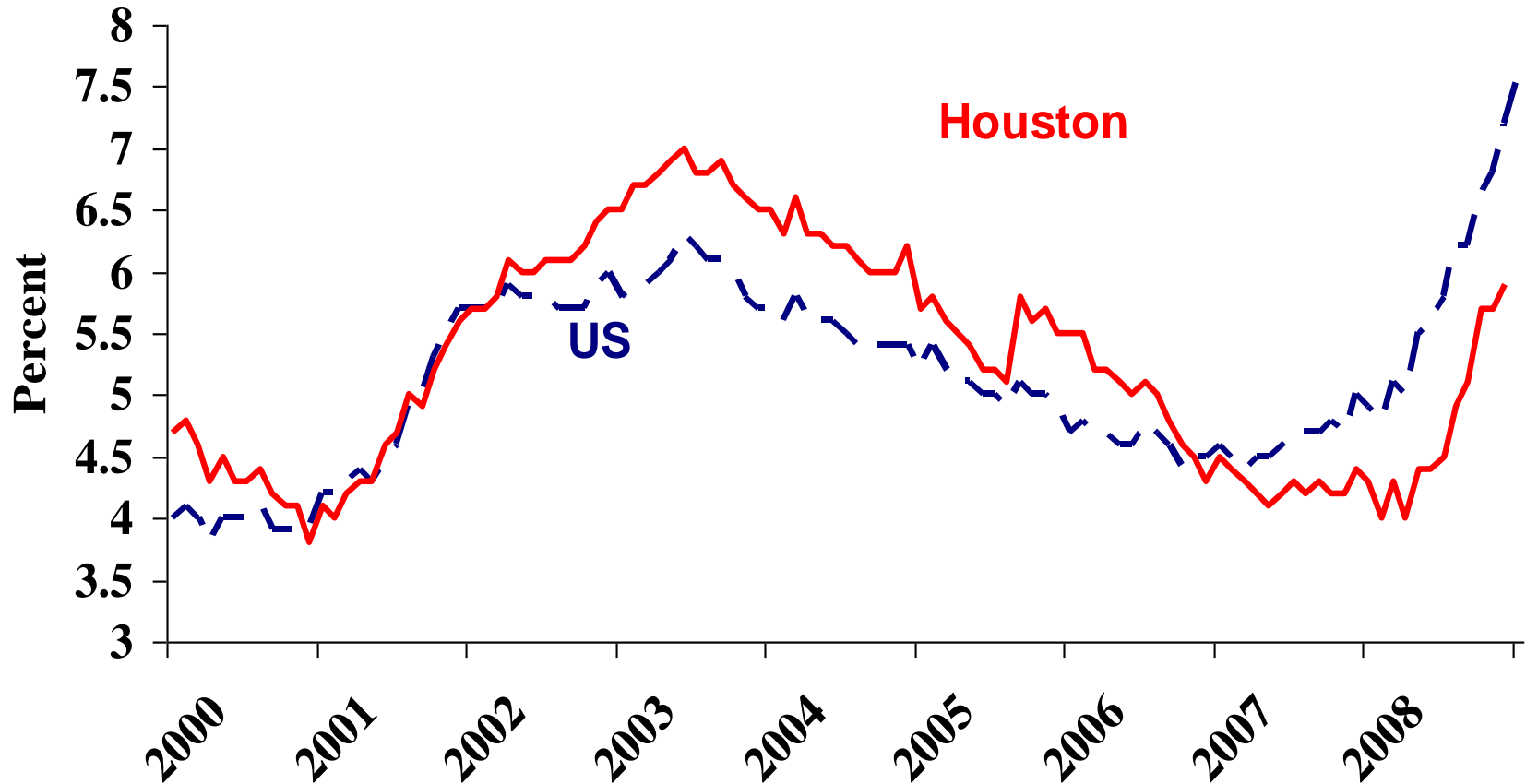


Purchasing Managers' Index US and Houston Compared



Unemployment Rate

Houston vs. US, SA



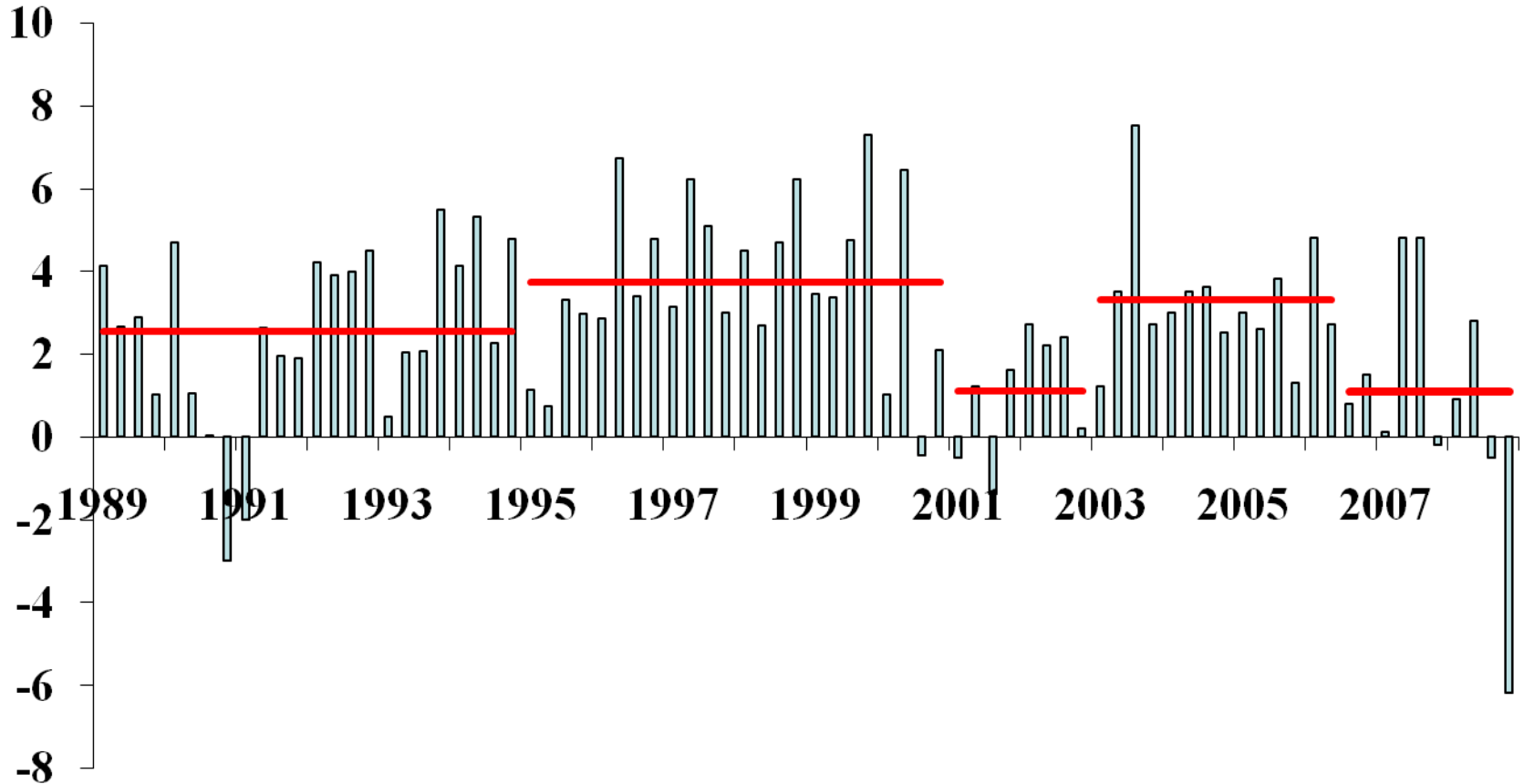
External Forces that Drive Houston

- US Economy
- Global Economic Conditions
- Oil and Natural Gas Markets

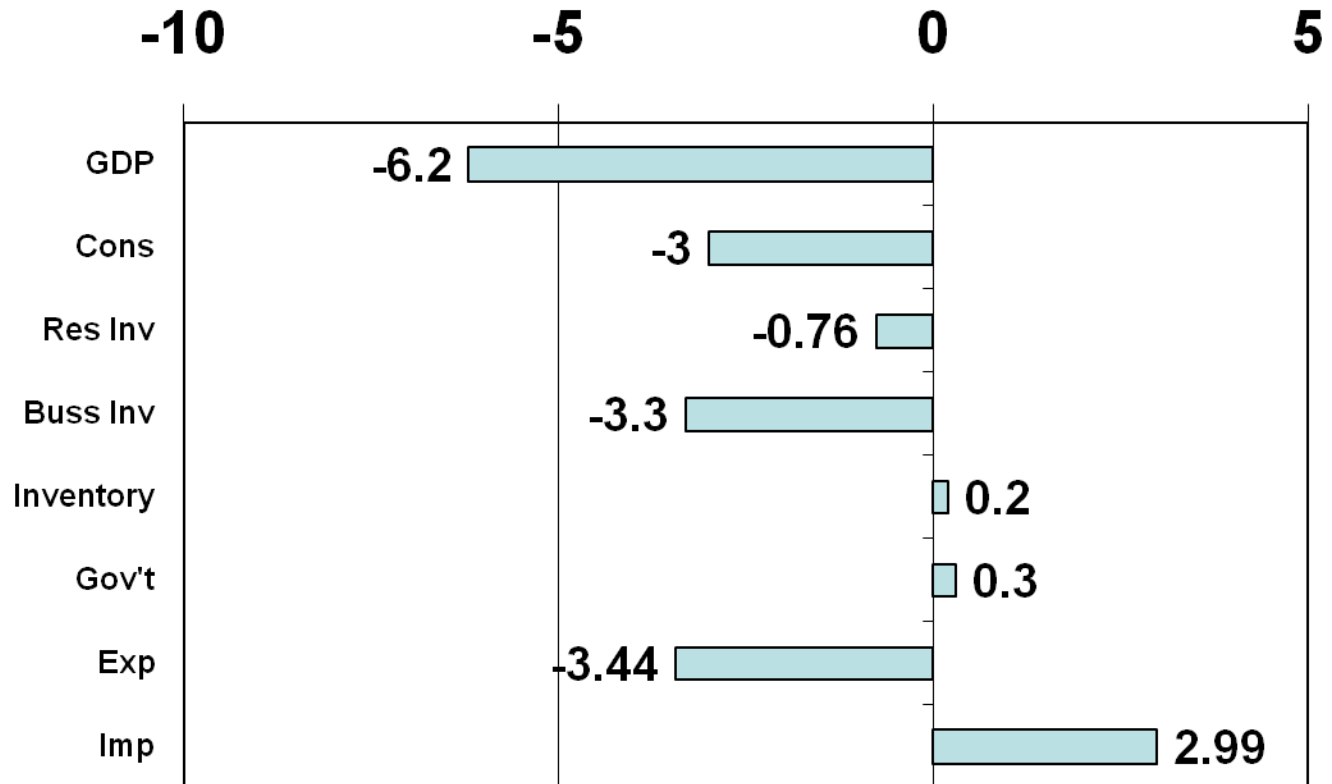
US leads the global slowdown

Gross Domestic Product

Quarterly Percent Growth, Chained 2000 Dollars

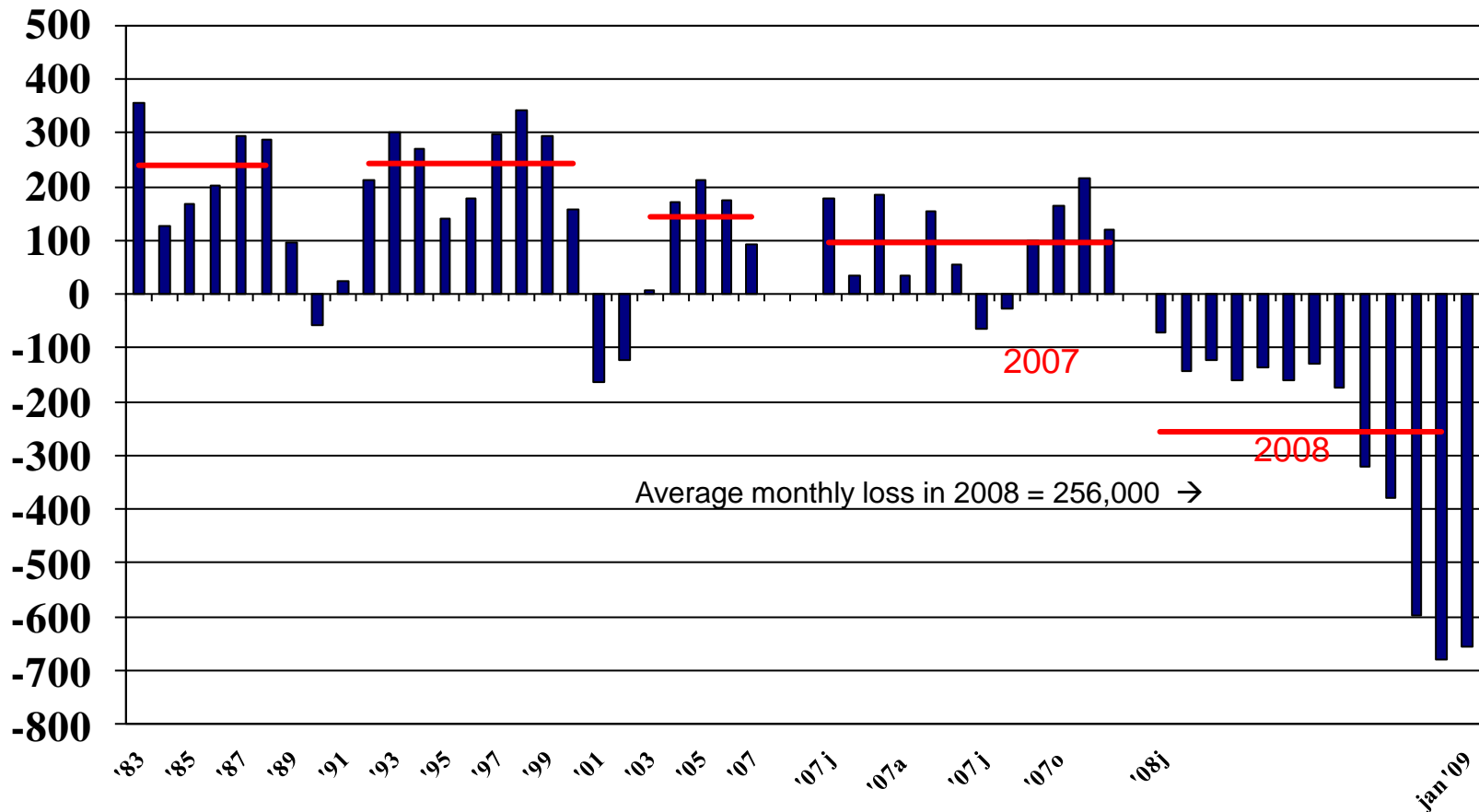


Percent Contribution to 2008 Q3 GDP:By Sector

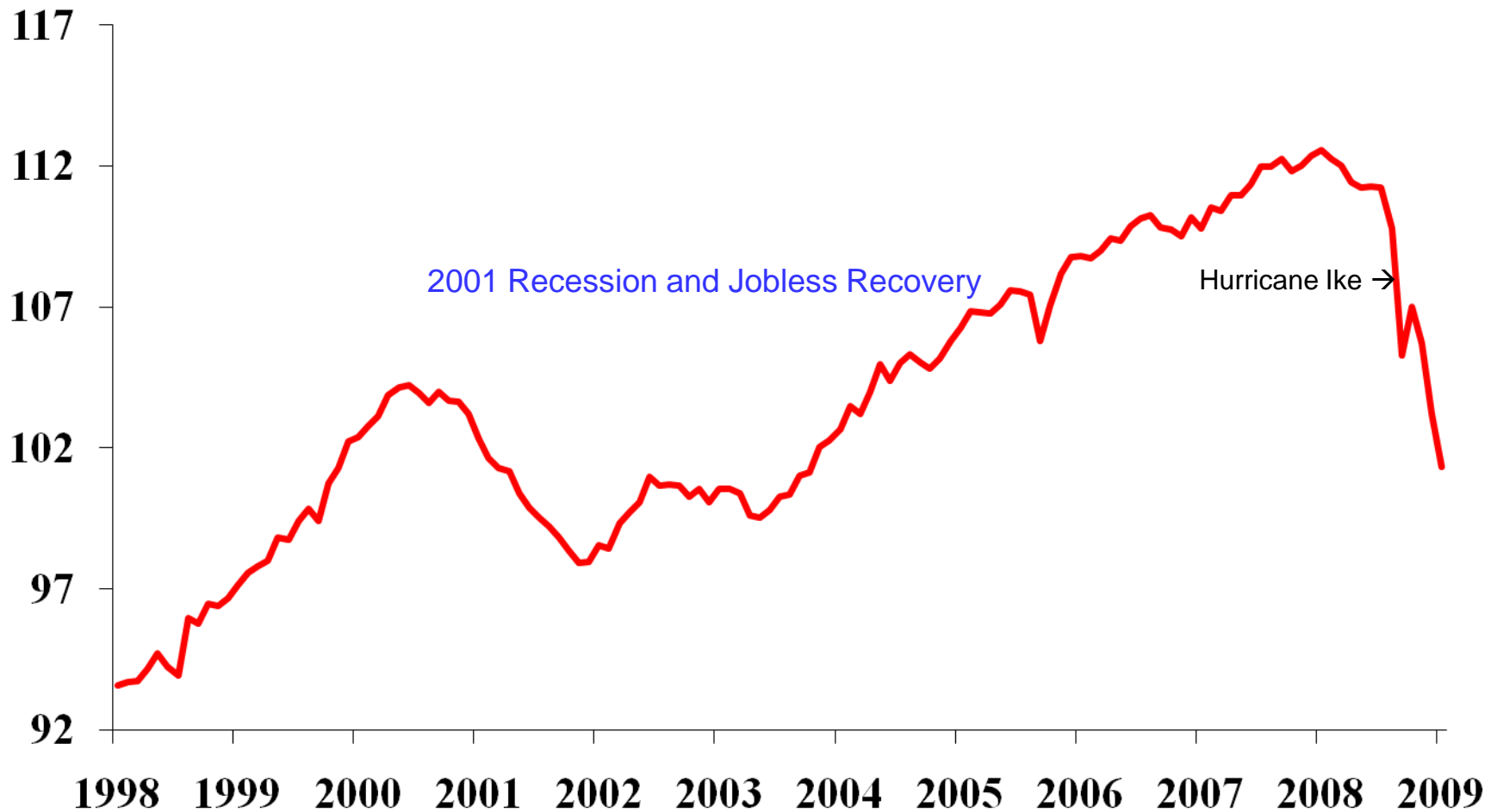


U.S. Employment Growth

In Thousands of New Jobs per Month, 1983 to 2008



Industrial Production: Dollar Provides Strength in Current Economy

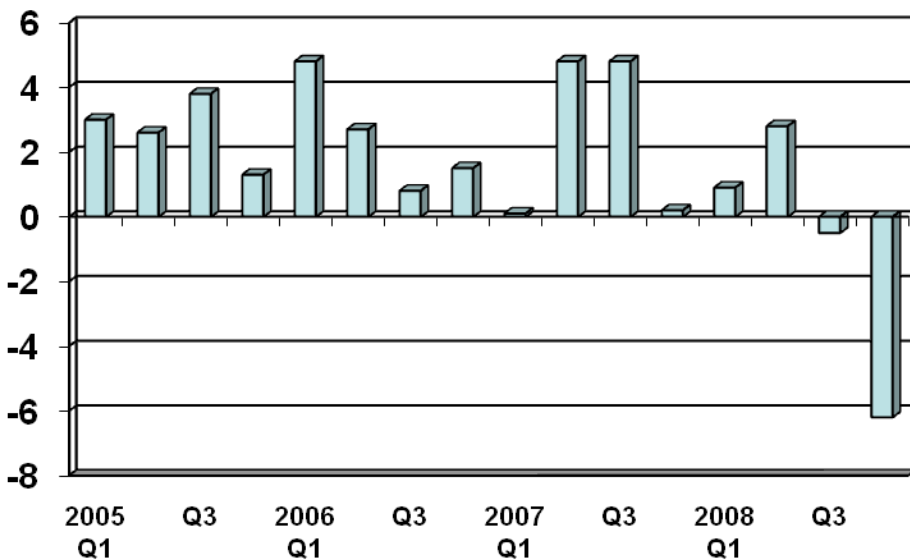


Gross Product Slows in 2006-08

Housing Weakens, Strength Elsewhere
Evaporates

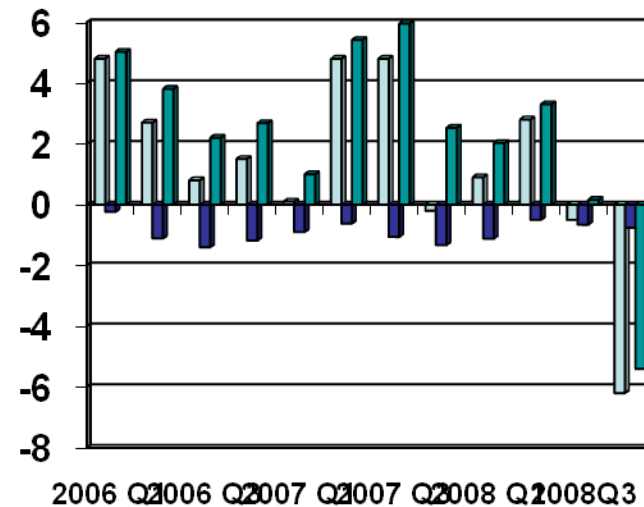
Total GDP Growth

%/yr

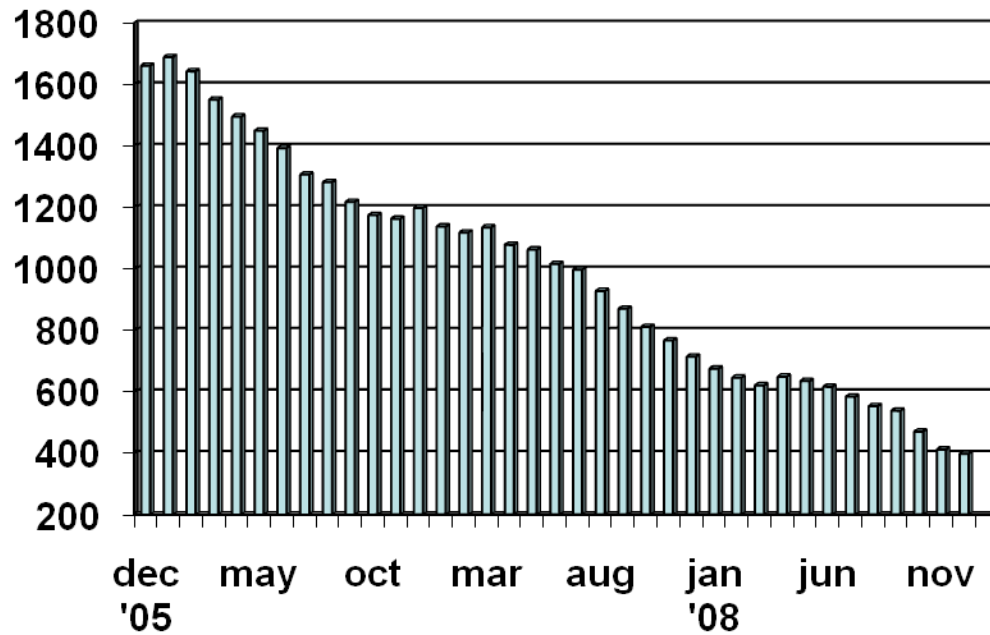


Contributions of Components

%/yr



Single-Family Building Permits Privately owned, 000, saar



Year over year changes*:

New starts -46.0%

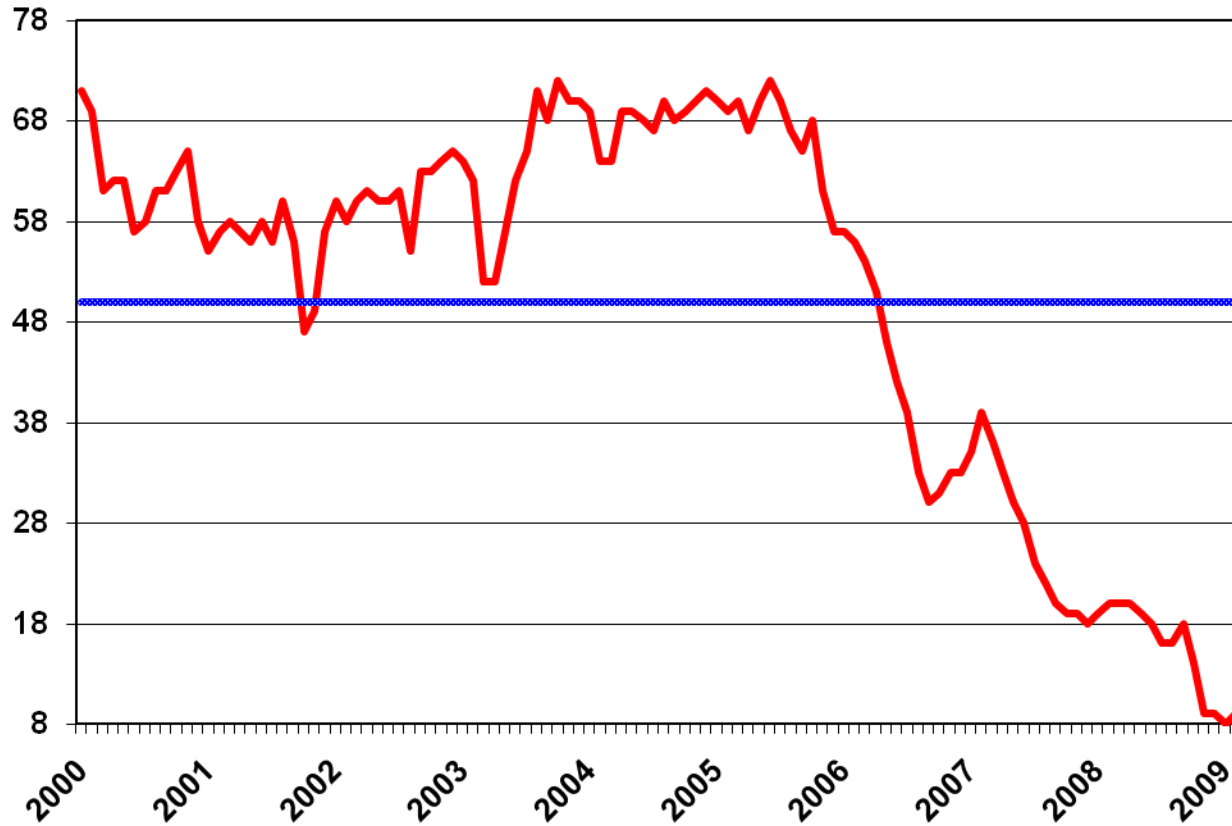
New home sales -48.2%

Existing home sales -8.6%

Existing home price -14.8%

*12-month change Jan to Jan

NAHB Housing Market Index Shows Depth of Pessimism



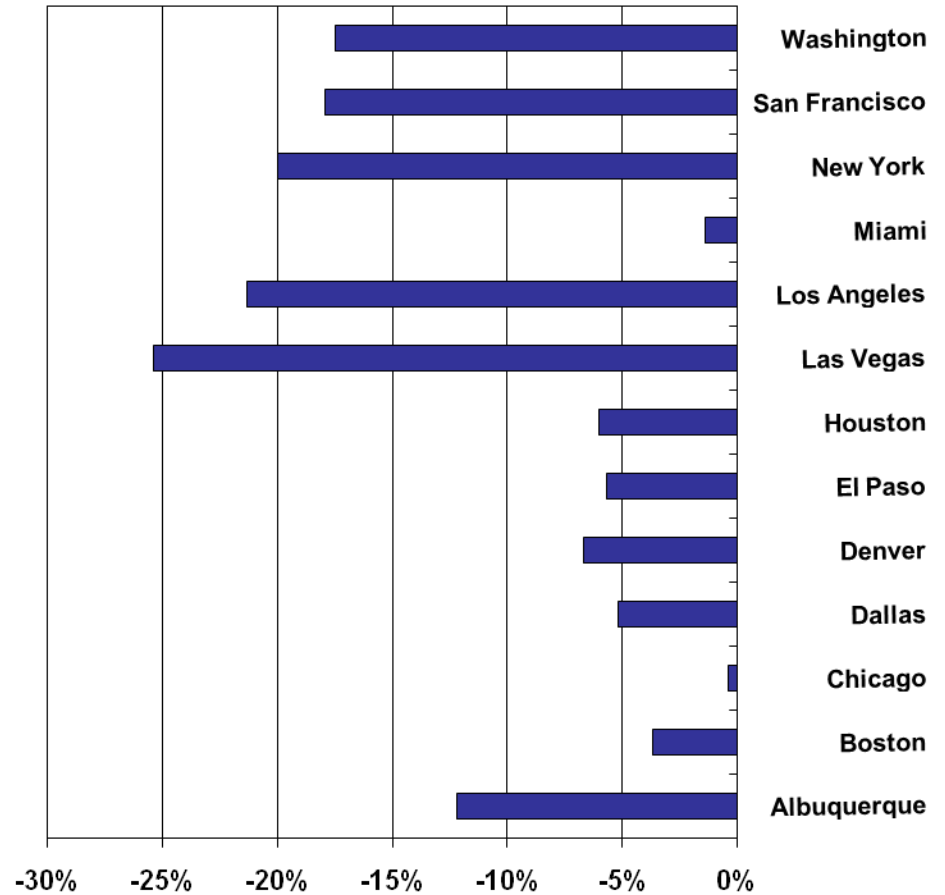
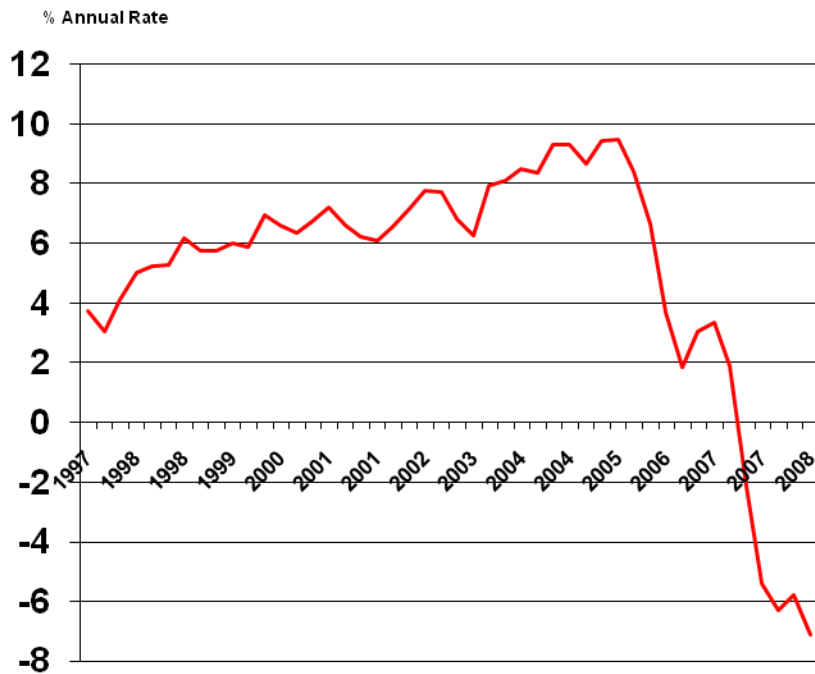
Percent of Local Families that Can Afford Median-Priced Home

	1999:Q4	2008:Q3	<i>Low Point</i>
<i>United States</i>	64	56	40
Los Angeles	43	21	2
New York	55	10	5
Miami	59	22	10
Chicago	61	47	40
Dallas	64	64	54
Houston	66	64	47
Atlanta	73	72	64

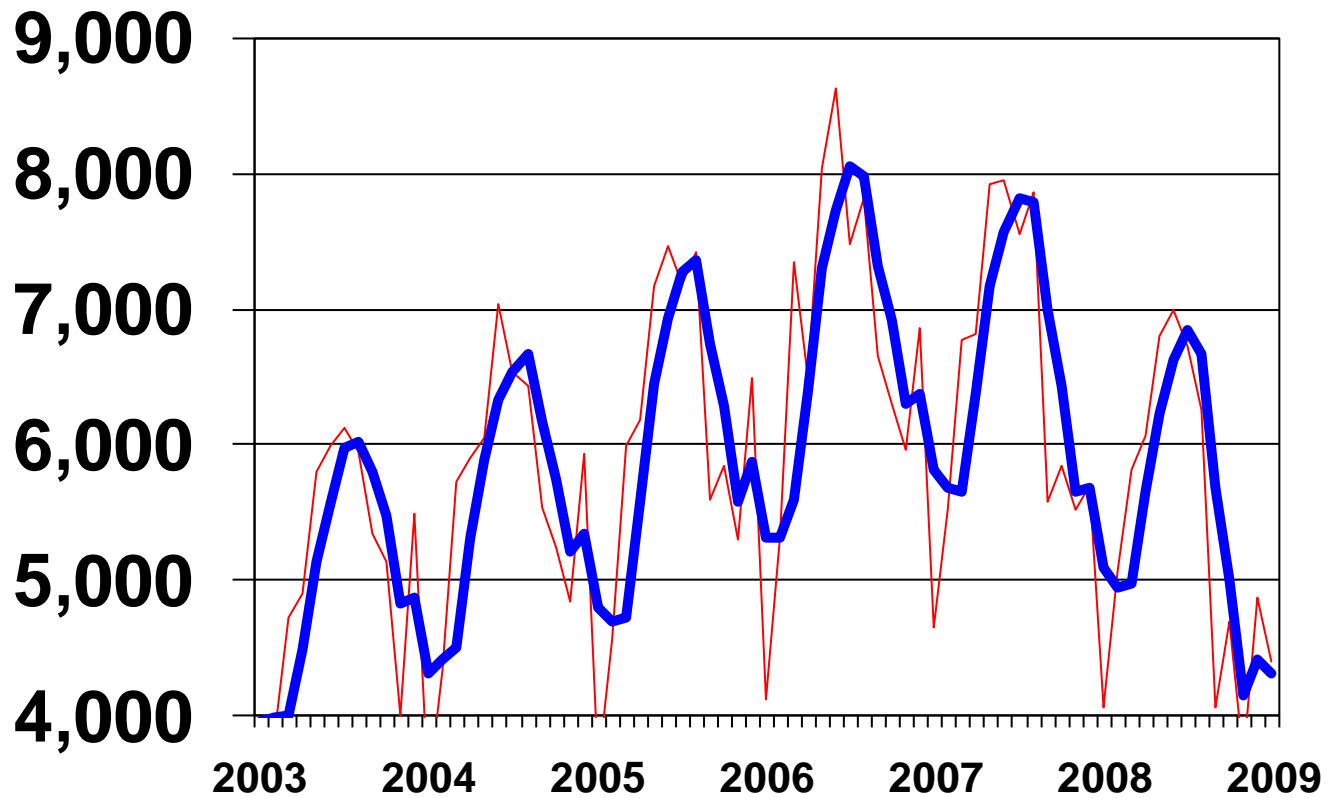
Source: Wells Fargo Housing Opportunity Index, by metro area or major division

Metro Price Changes: 12-Month Change in Median SF Home Price

Home Price Appreciation in the US: Percent Change for Repeat Sales

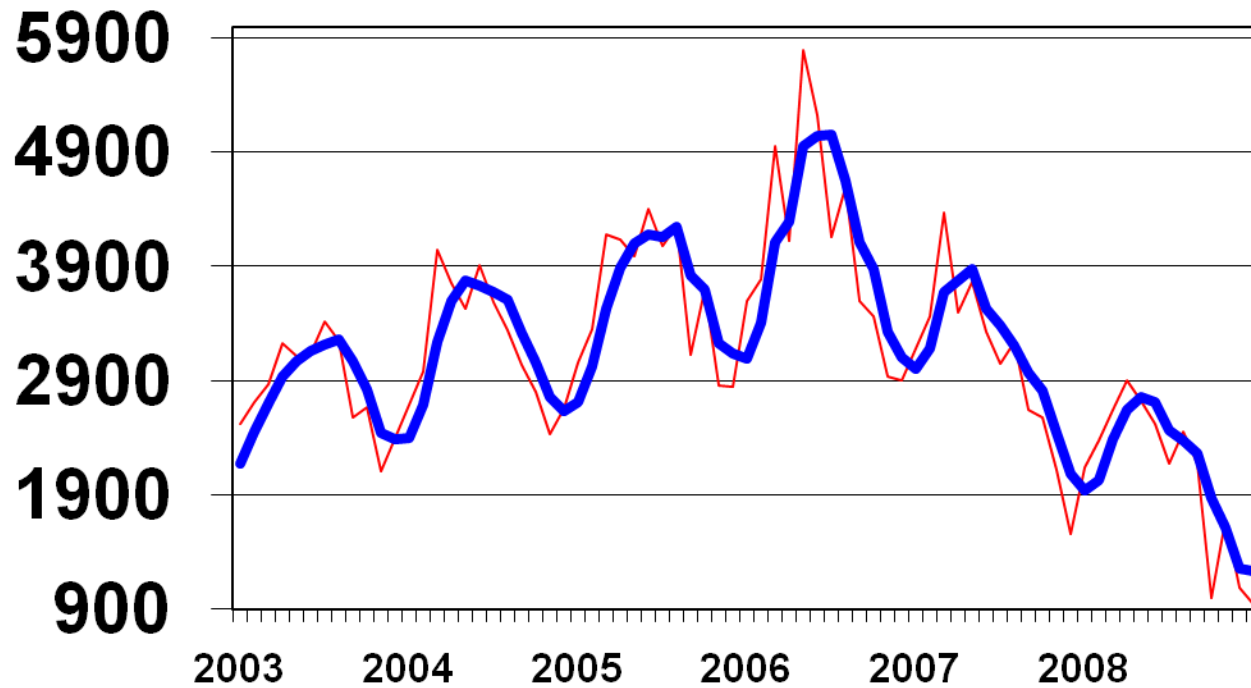


Existing Home Sales in Houston: 2003-2008



— Monthly Sales — Moving Average

Single-Family Permits Issued: Houston 2003-2008



— Monthly Permits — Moving Average

Source: Census and TAMU Real Estate Center

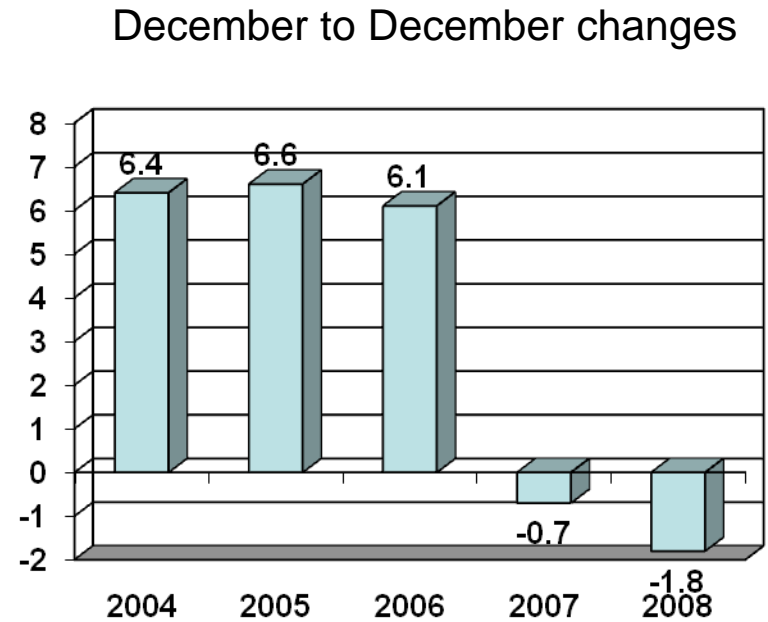
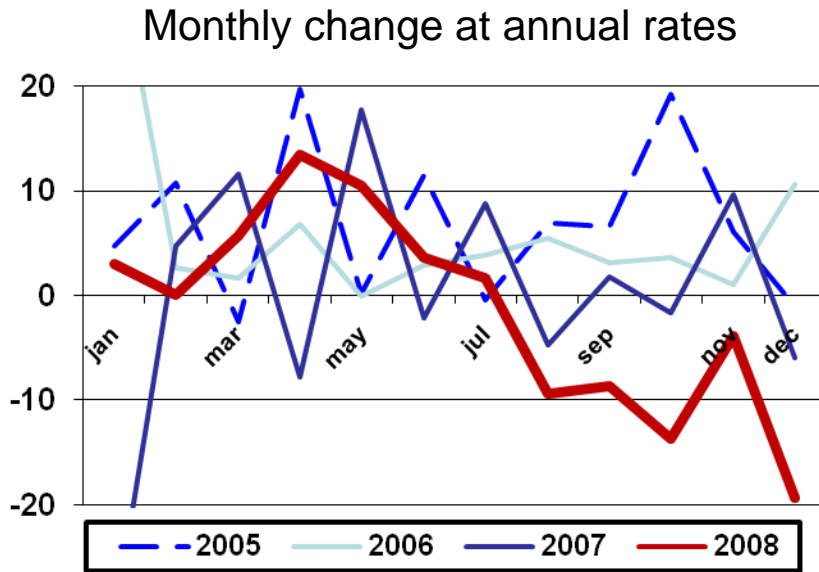
Use of High-Cost Mortgages By Metro Area

(Percent of Mortgages in 2006)

- Detroit 37.2%
- Miami 45.1%
- Dallas-Fort Worth 29.4%
- Houston 33.9%
- Los Angeles 32.3%
- Washington, DC 22.7%
- Phoenix 31.2%
- Chicago 27.2%
- Boston 17.7%
- Atlanta 25.6%
- Philadelphia 18.4%
- New York 22.4%
- San Francisco 22.4%

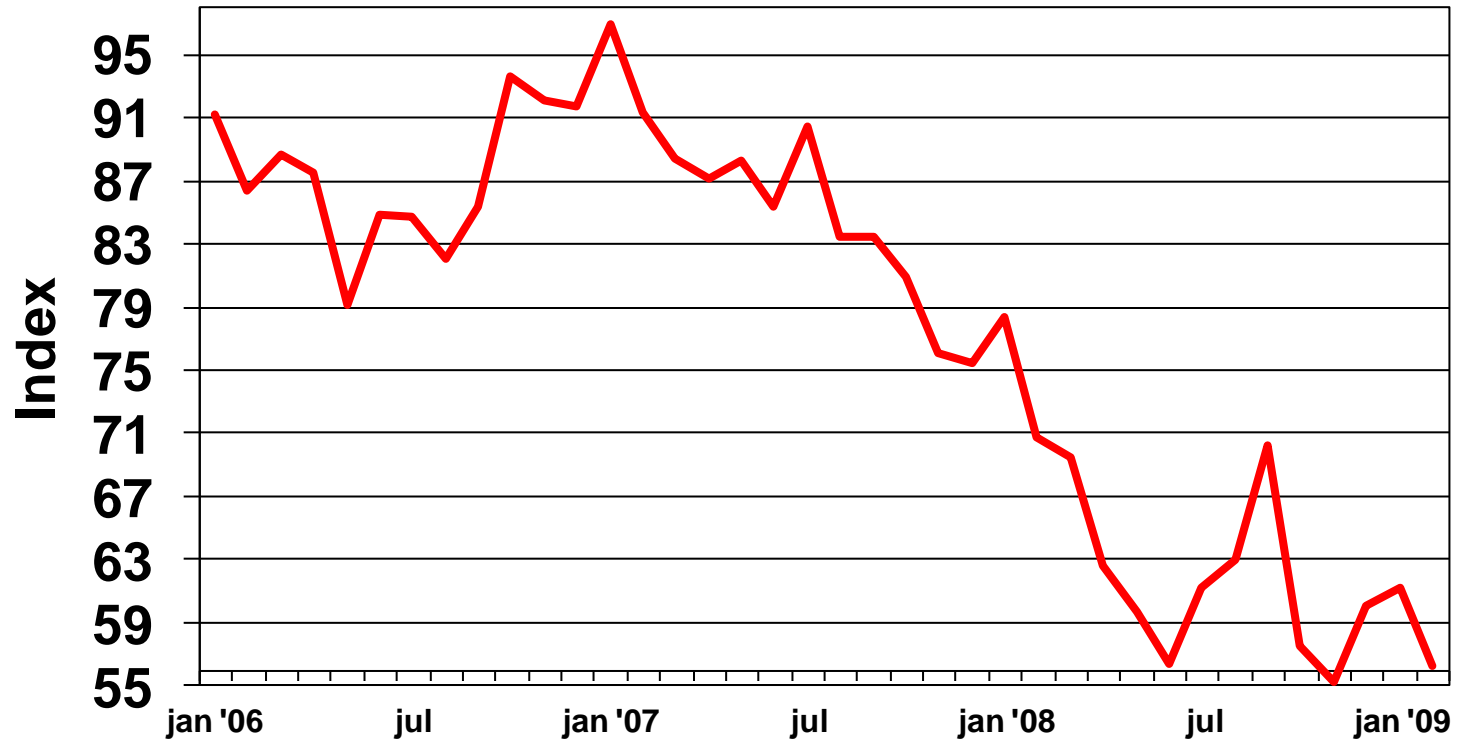
Source: Home Mortgage Disclosure Act

Retail sales, ex autos and gasoline 2004-2009



Seasonally adjusted data

University of Michigan Consumer Sentiment Survey



Survey of Professional Forecasters

Housing Hits Bottom in 2008-09?

	Housing Starts (million, at annual rates)	Residential Fixed Investment (% change)	Total Consumption Expenditures (% change)
2008 Q3	.88	-19.1	-3.8
Q4	.66	-20.0	-2.5
2009 Q1	.56	-25.0	-0.5
Q2	.56	-13.6	1.2
Q3	.61	-6.1	1.8
Q4	.66	4.1	2.4
2008	.90	-27.3	-1.5
2009	.61	-17.3	-2.0

Survey of Professional Forecasters

General Outlook for 2008-09

	GDP (annual rate)	Unemployment Rate (%)	Employment (monthly gain)	Industrial Production (Index)	Non-Res Investment (% change)
2008 Q3	- 0.5	6.0	-208	108.8	-5.3
Q4	-3.8	6.9	-518	105.5	-2.0
2009 Q1	-5.2	7.8	-548	102.7	-12.5
Q2	-1.8	8.3	-311	101.9	-10.8
Q3	1.0	8.7	-202	101.9	-7.0
Q4	1.8	8.9	-43.0	102.6	-5.0
2008	1.3	5.8	-328	109.5	-5.9
2009	-2.0	8.4	6.2	102.2	-10.0

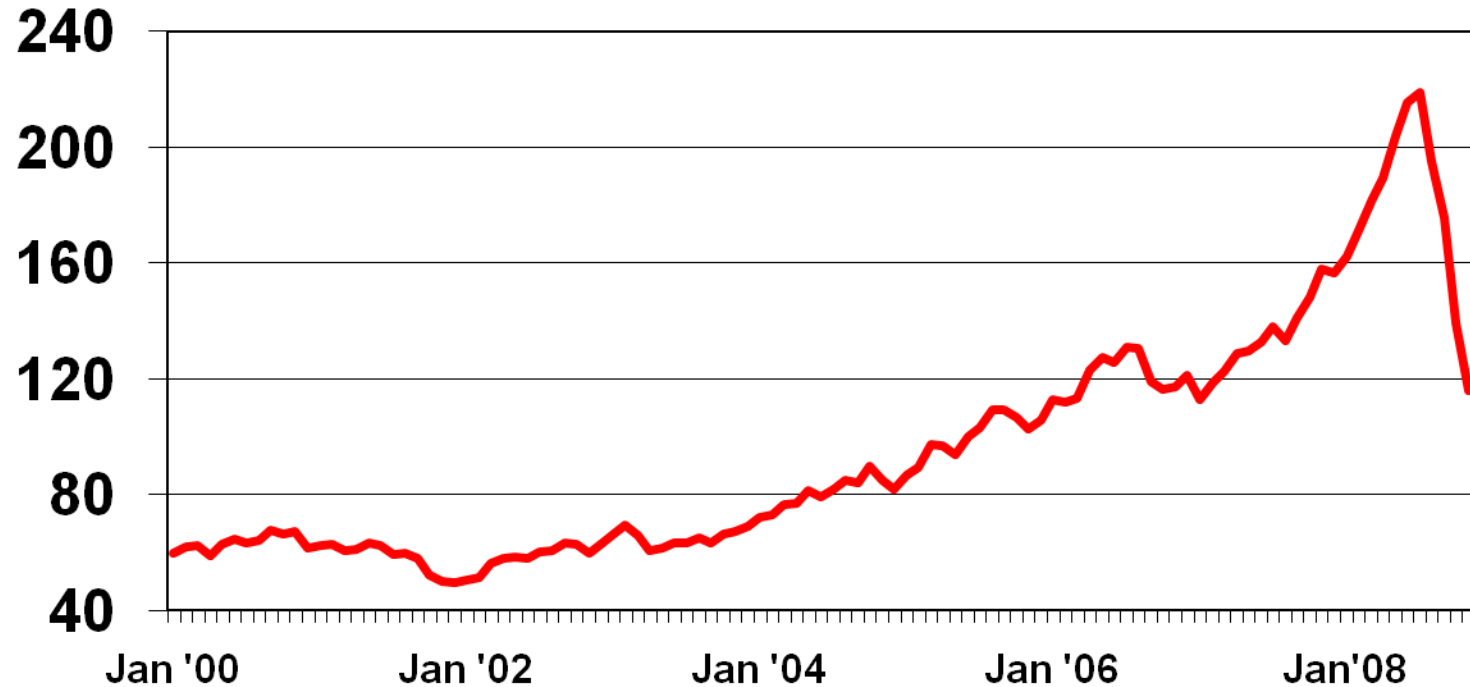
Current US Outlook

- The U.S. economy slowed in 2006-2007 along with housing and autos. Growth flirted with stall speed throughout 2008, and the latest financial shock has tilted it into serious recession.
- Expectations that housing might stabilize in 2008 were too optimistic, especially for new construction.
- The consumer has pulled back *hard* on spending. Fatigued by high and food gasoline prices, falling home prices, losses in 401(k), now add the weak job market as one more reason for concern.
- Recession? Now we know – it began December 2007. How long? How deep? Recent data are now consistent with the most serious US economic downturn in at least 25 years.

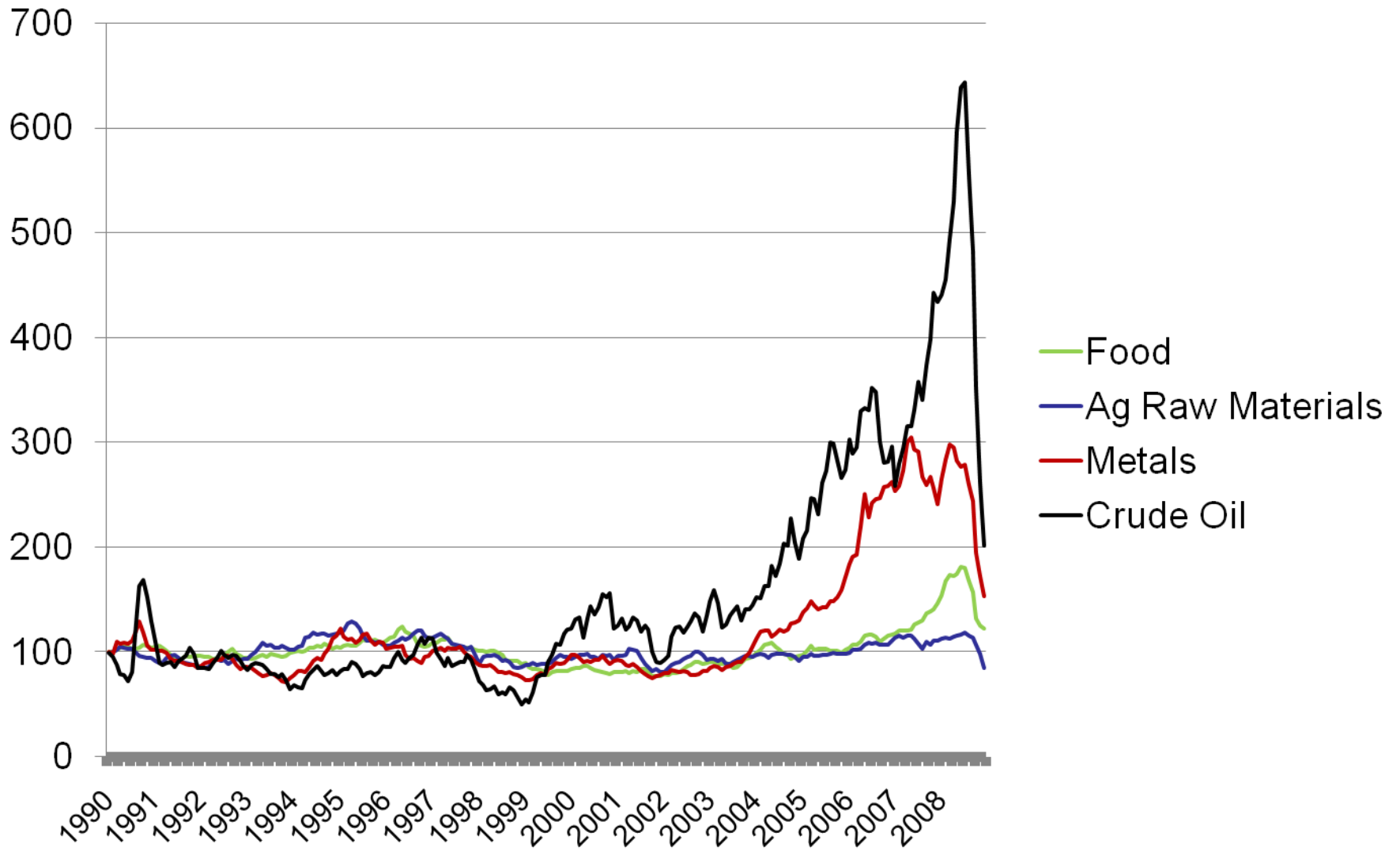
The global economy drives the
commodity boom ... and now the
bust?

Commodity Price Index: Global Boom ... And Now the Bust?

Index: 2005 = 100



Oil Part of a Much Wider Commodity Boom



What Was Behind the Commodity Boom?

- *Primarily, it is the growth of the developing world.* From 2002-2007, the IMF estimates they account for 90% of the growth in consumption of oil, 90% of metals' growth, and 80% of food.
- *Dollar depreciation* raises the purchasing power of other currencies, and stimulates the demand for commodities priced in dollars. Raises the price to US consumers.
- *Low U.S. interest rates* (other things equal) can raise the price of commodities by lowering the price of storage, encouraging speculation.

IMF Global Growth Projections Stay Behind the Curve

	2008	2009
October 2007	4.4	--
January 2008	4.1	--
April 2008	3.7	3.8
July 2008	4.1	3.9
October 2008	3.9	3.0
November 2008	3.7	2.2
January 2009	3.4	0.5

IMF World Economic Outlook

Annual Percent Growth

	2006	2007	2008	2009
World	5.1	5.2	3.4	0.5
US	2.9	2.0	1.1	-1.6
Devel. Asia (China)	9.9 (11.6)	10.6 (13.0)	7.8 (9.0)	5.5 (6.7)
Euro Area	2.8	2.6	1.0	-2.0
Japan	2.4	2.4	-0.3	-2.6

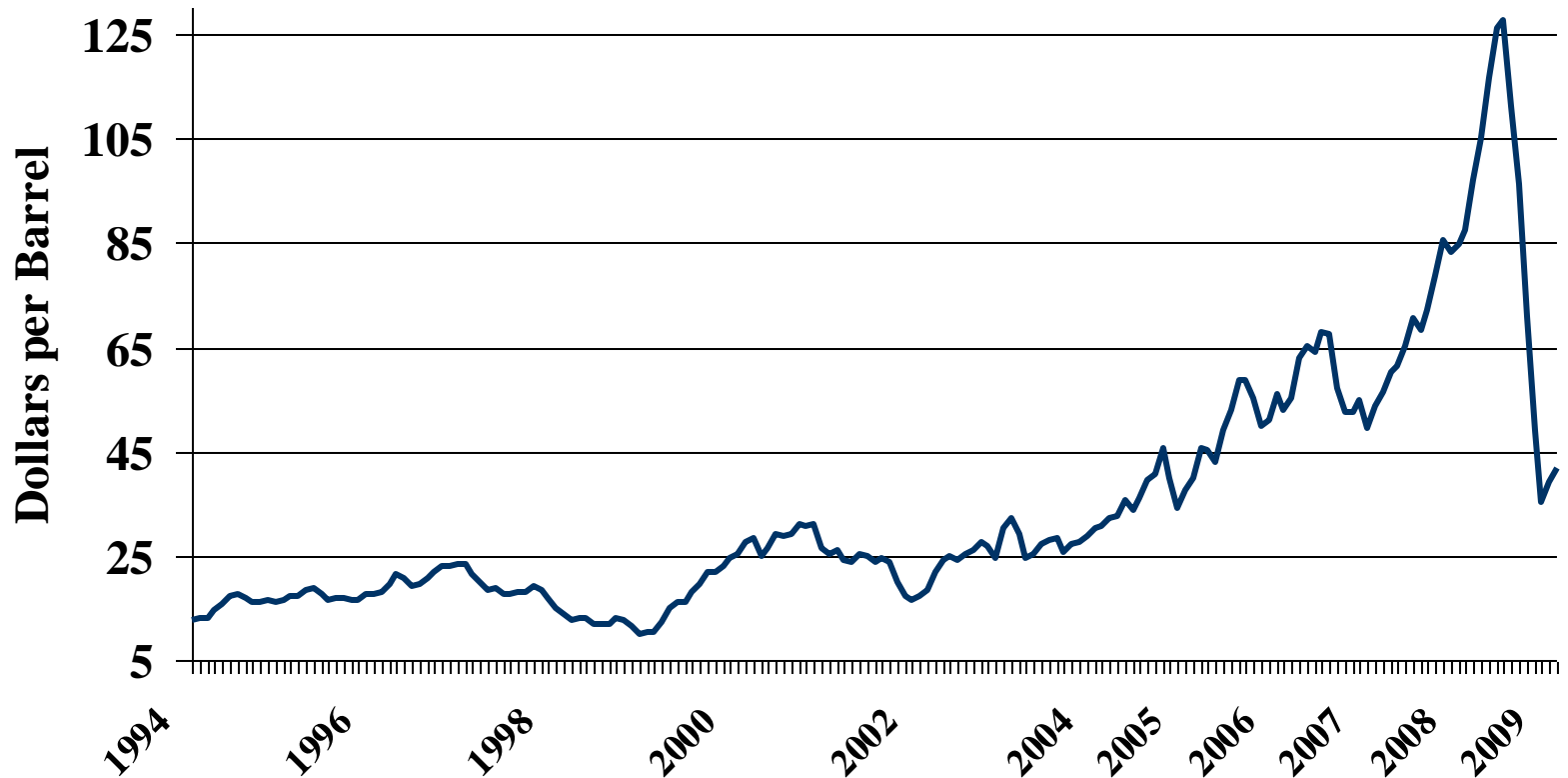
Source: IMF, *World Economic Outlook -- Update*, November 2008

Could Emerging Country Growth Really Decouple from the US, Europe and Japan?

- Strong internal growth dynamics
- A rising share of the global economy
- More resilient policy framework
- But spillovers from the developed world still a factor – accounting for maybe 35 percent of growth for emerging economies, 45 percent for more commodity dependent

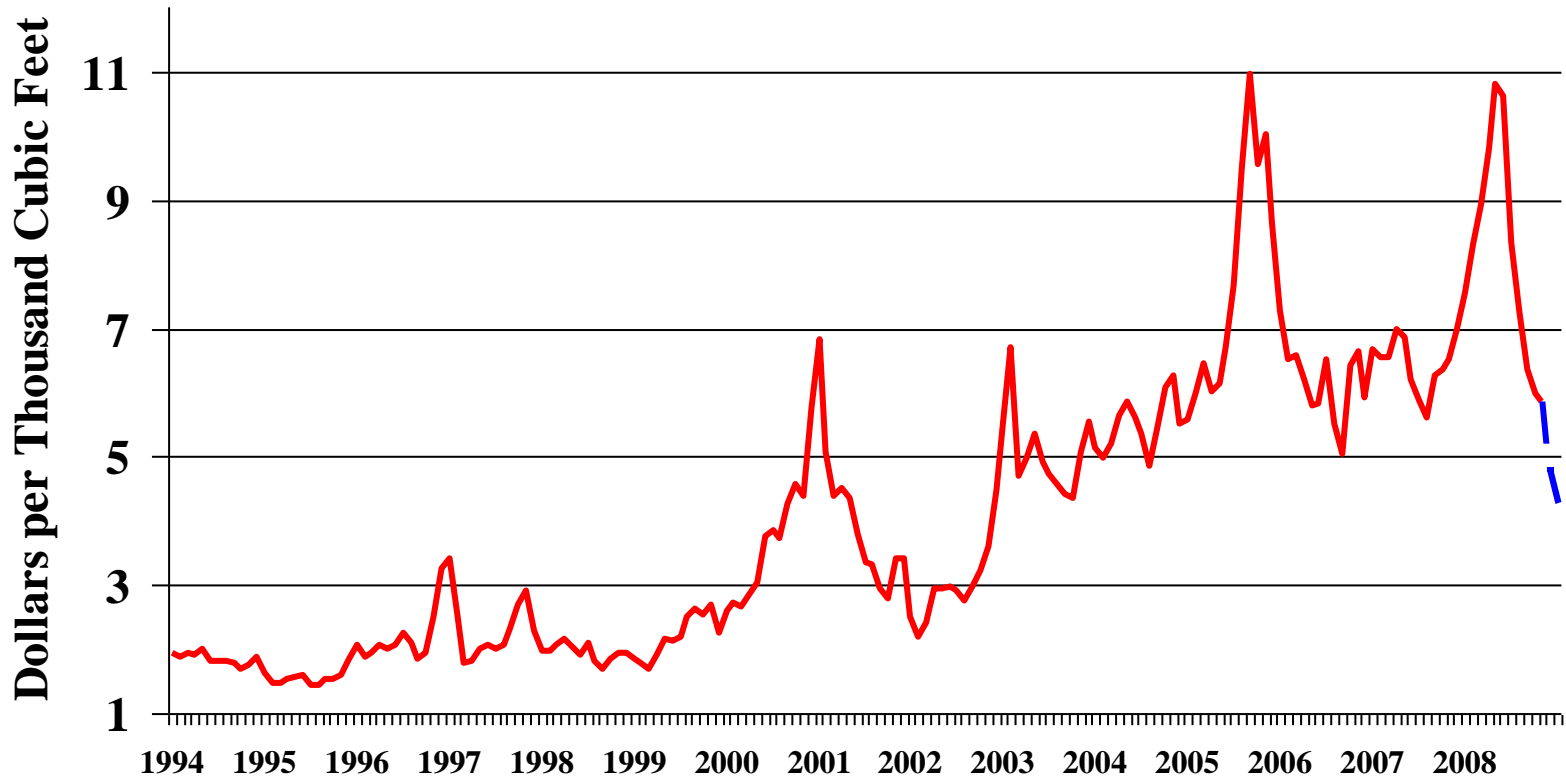
Oil and natural gas have separated
Houston from the rest of the country
for the last four years ...

Refiners' Acquisition Cost of Crude Oil 1994 to Present

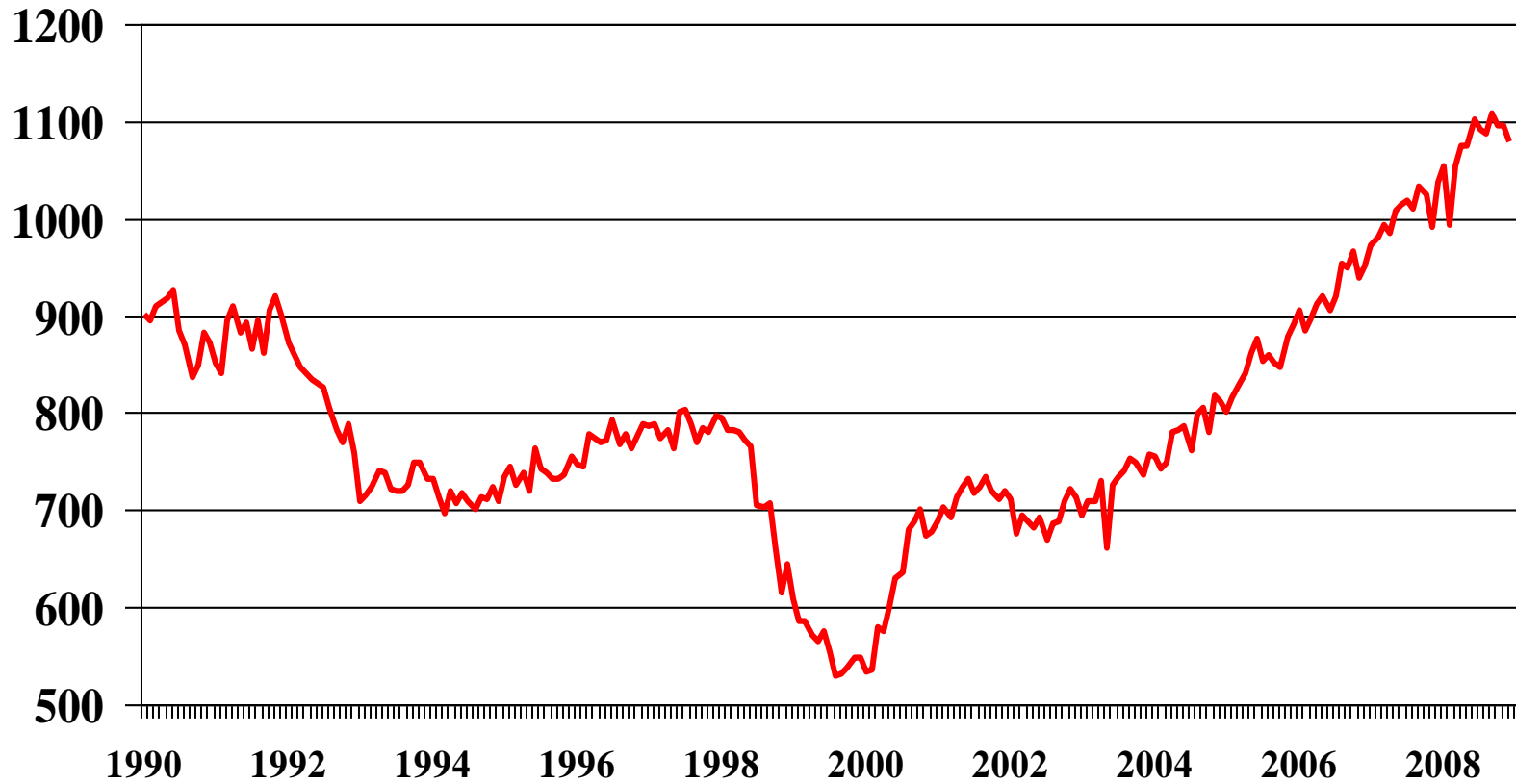


Wellhead Price of Natural Gas

1994 to Present

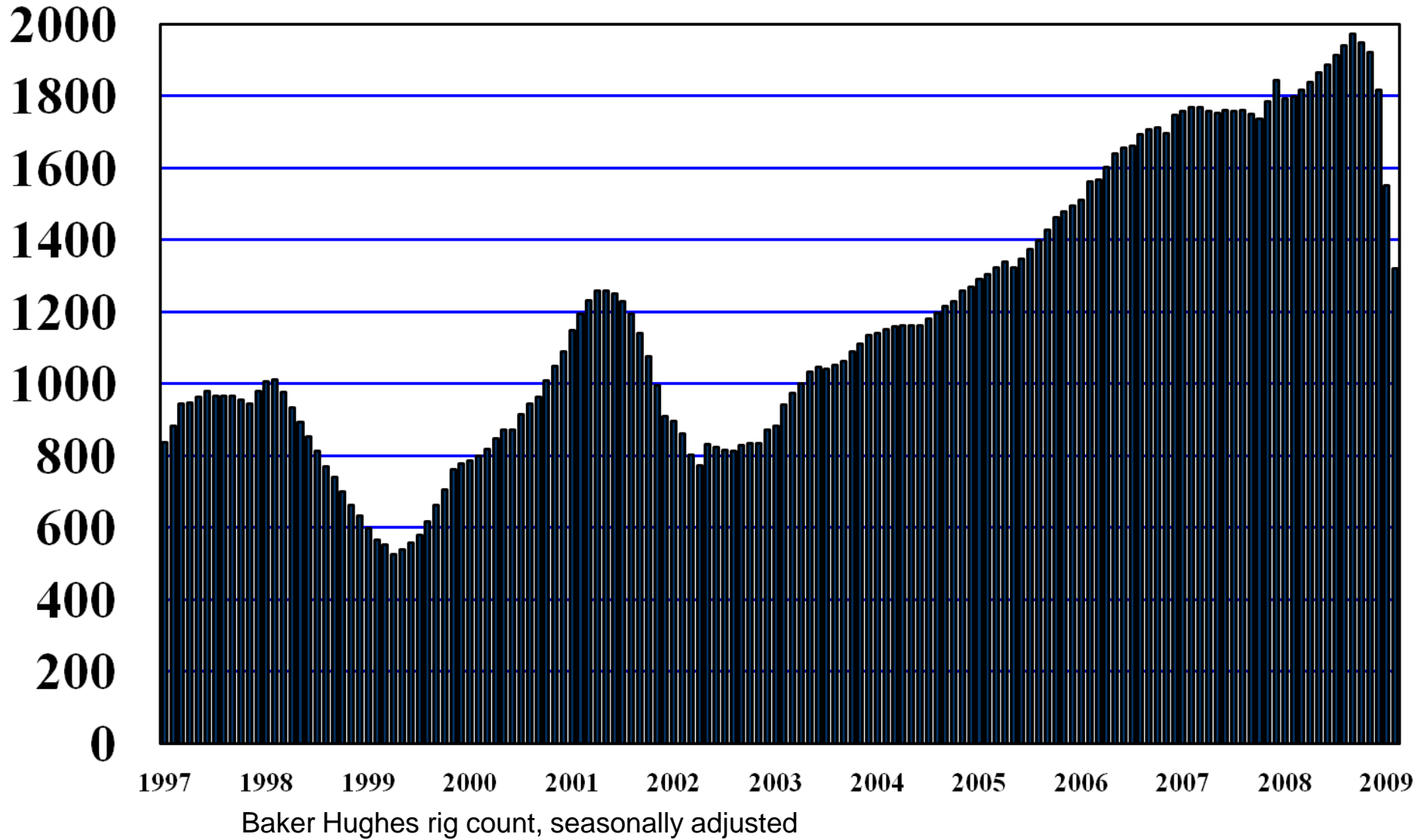


International Rig Count Continues to Hold Up



Excludes Iran and the Sudan

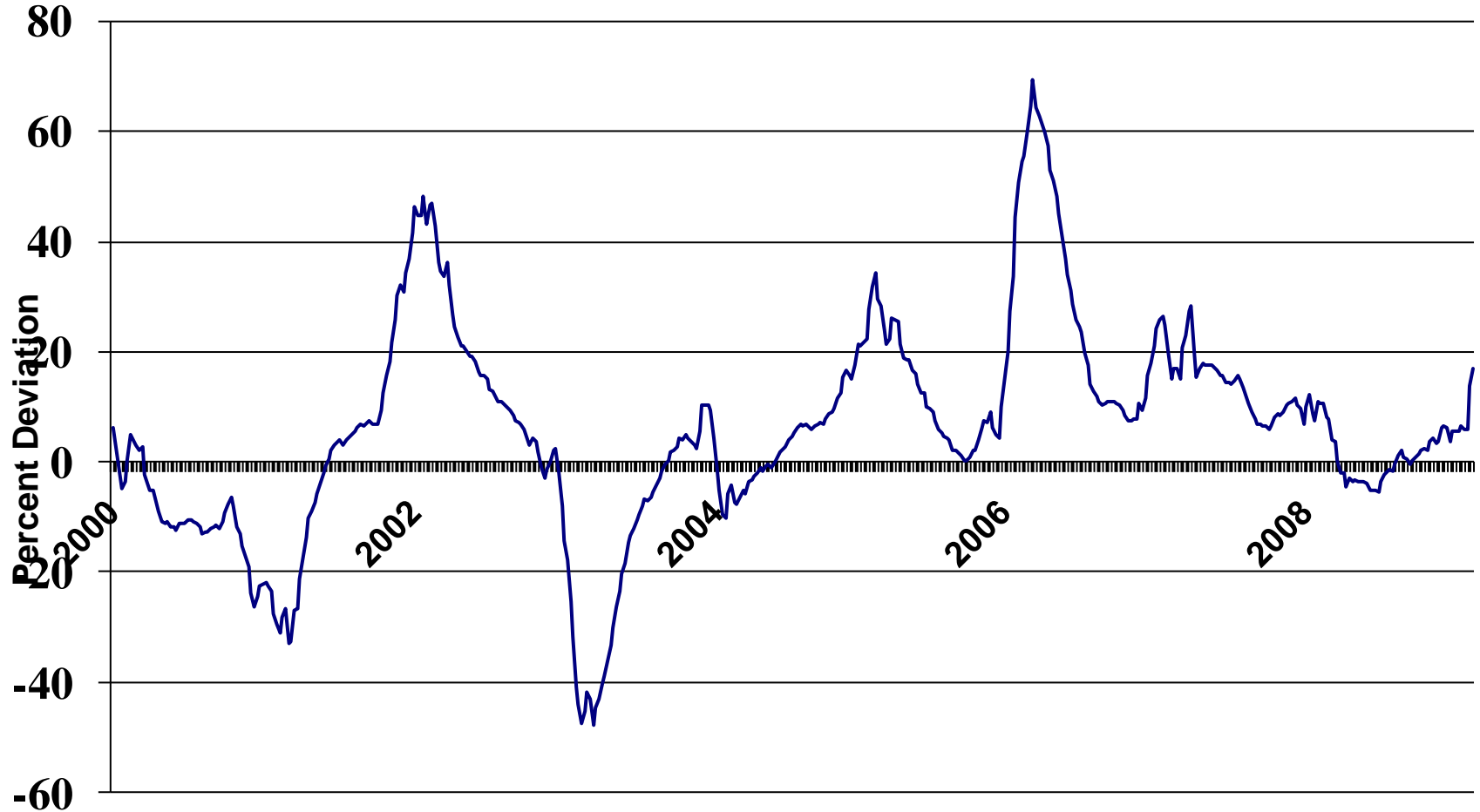
Drilling in the U.S. Falling at Fastest Rate Ever



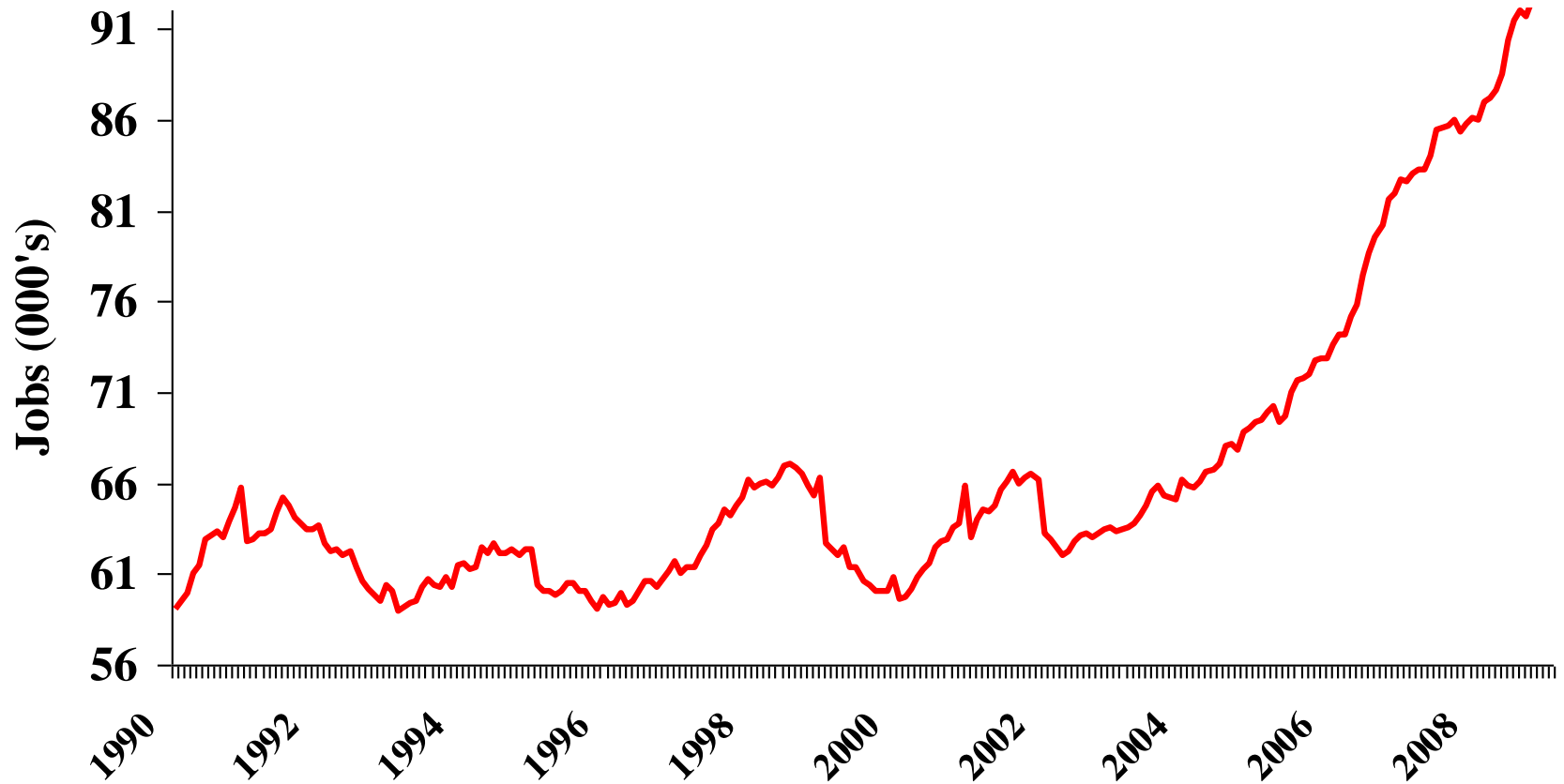
Natural Gas-Directed Drilling

- Natural gas production up 8 percent this year from last year
- Light damage to Gulf from hurricanes
- Canadian production and exports higher than expected
- Industrial loads hurt by recession
- Falling oil prices weaken gas prices
- Inventories in good order this year
- Winter weather has been cold in key markets

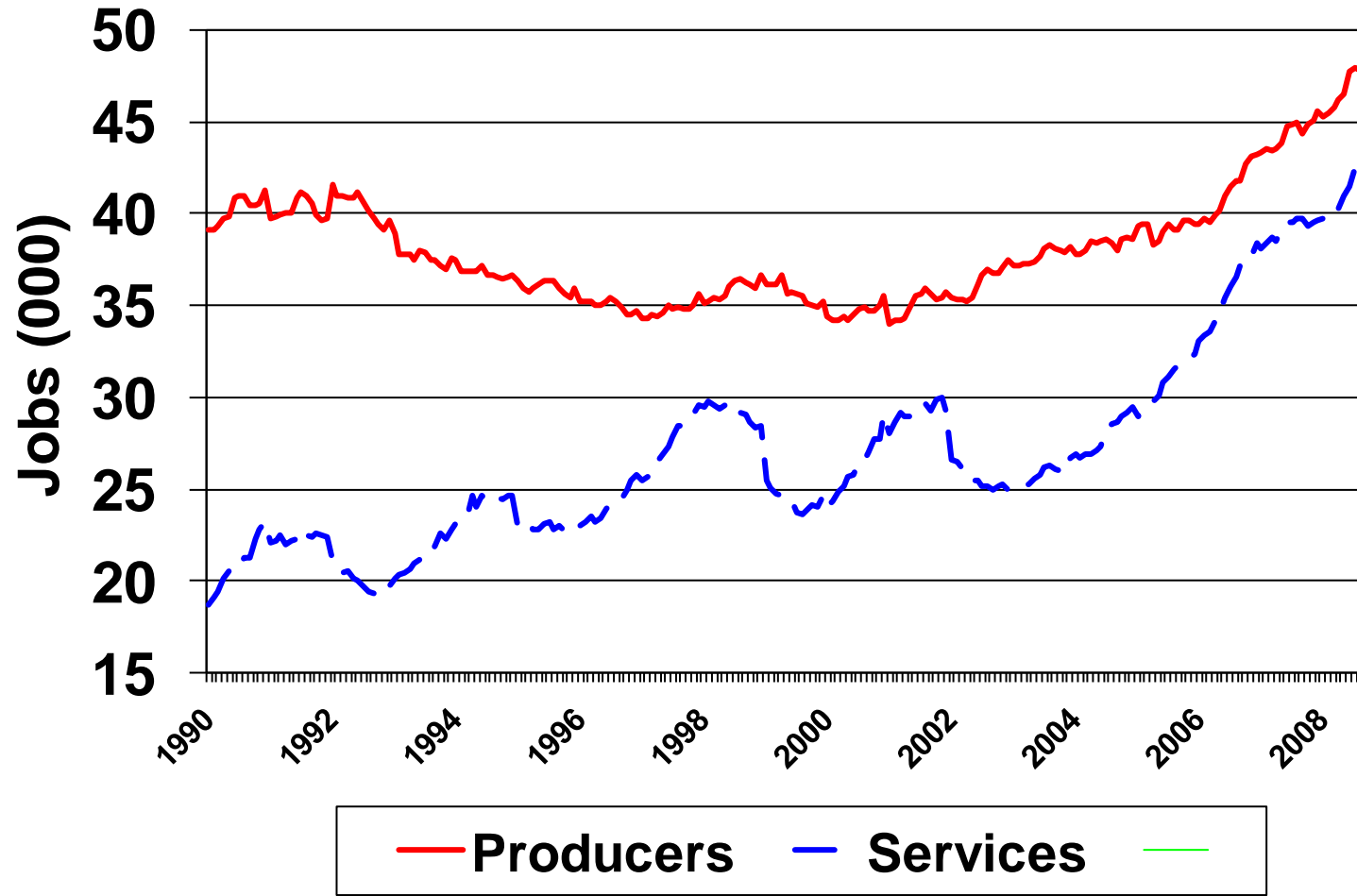
Natural Gas Inventories Normal This Winter (Percent Difference from Five-Year Average)



Oil and Natural Gas Mining Jobs in Houston: 1990 to Present

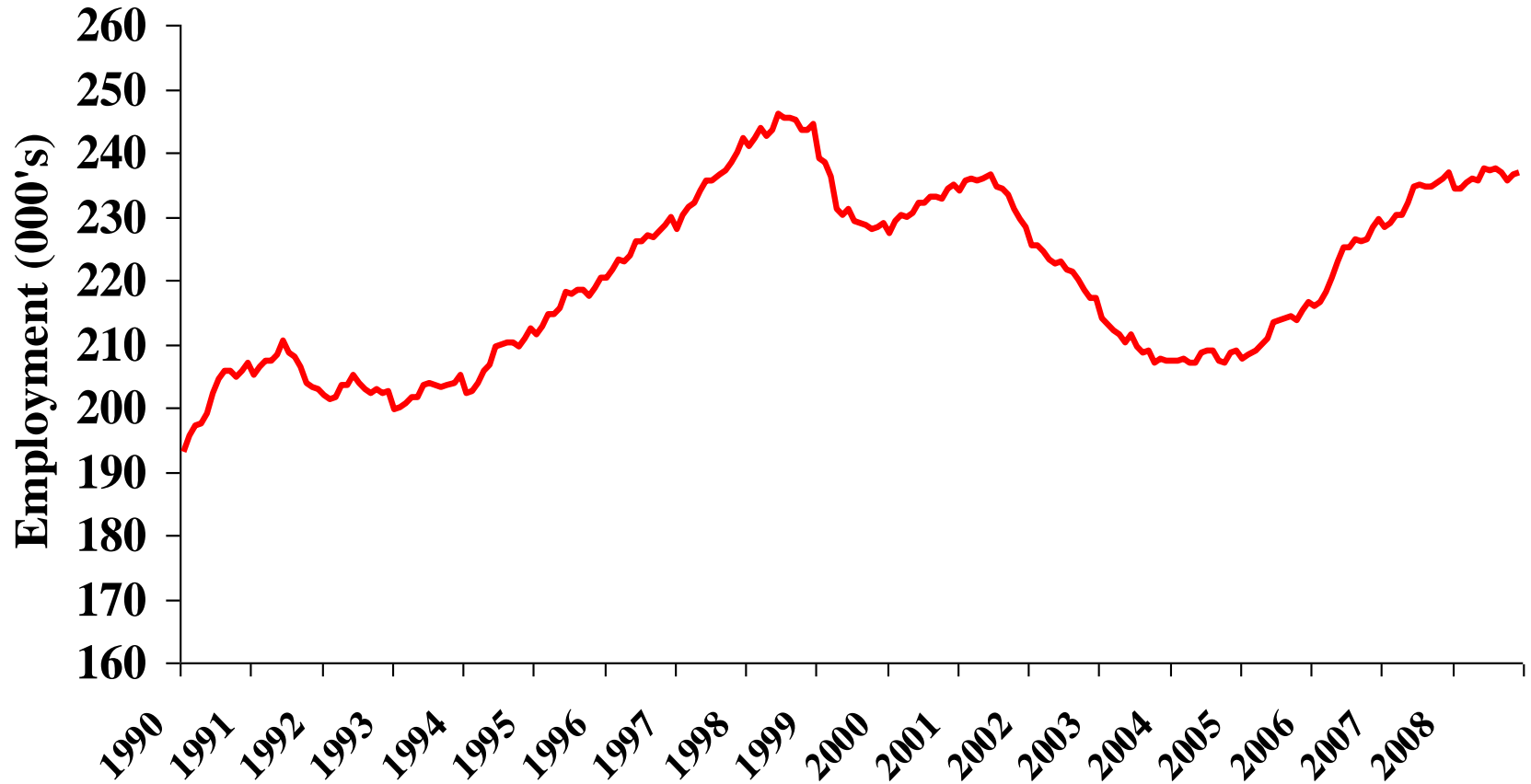


Houston Shows Growth in Both Producer and Oil Service Jobs



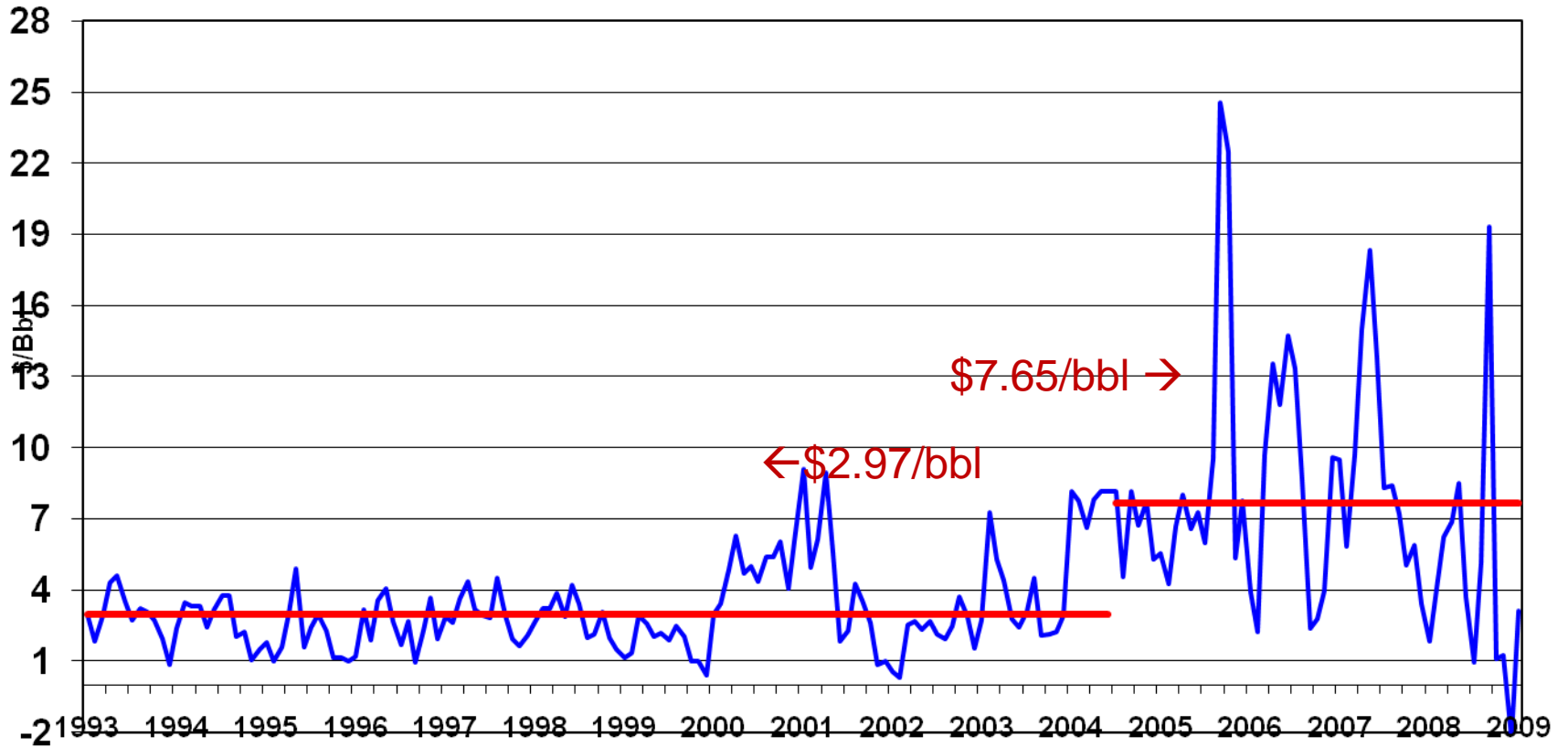
Manufacturing Jobs in Houston

1990 to Present

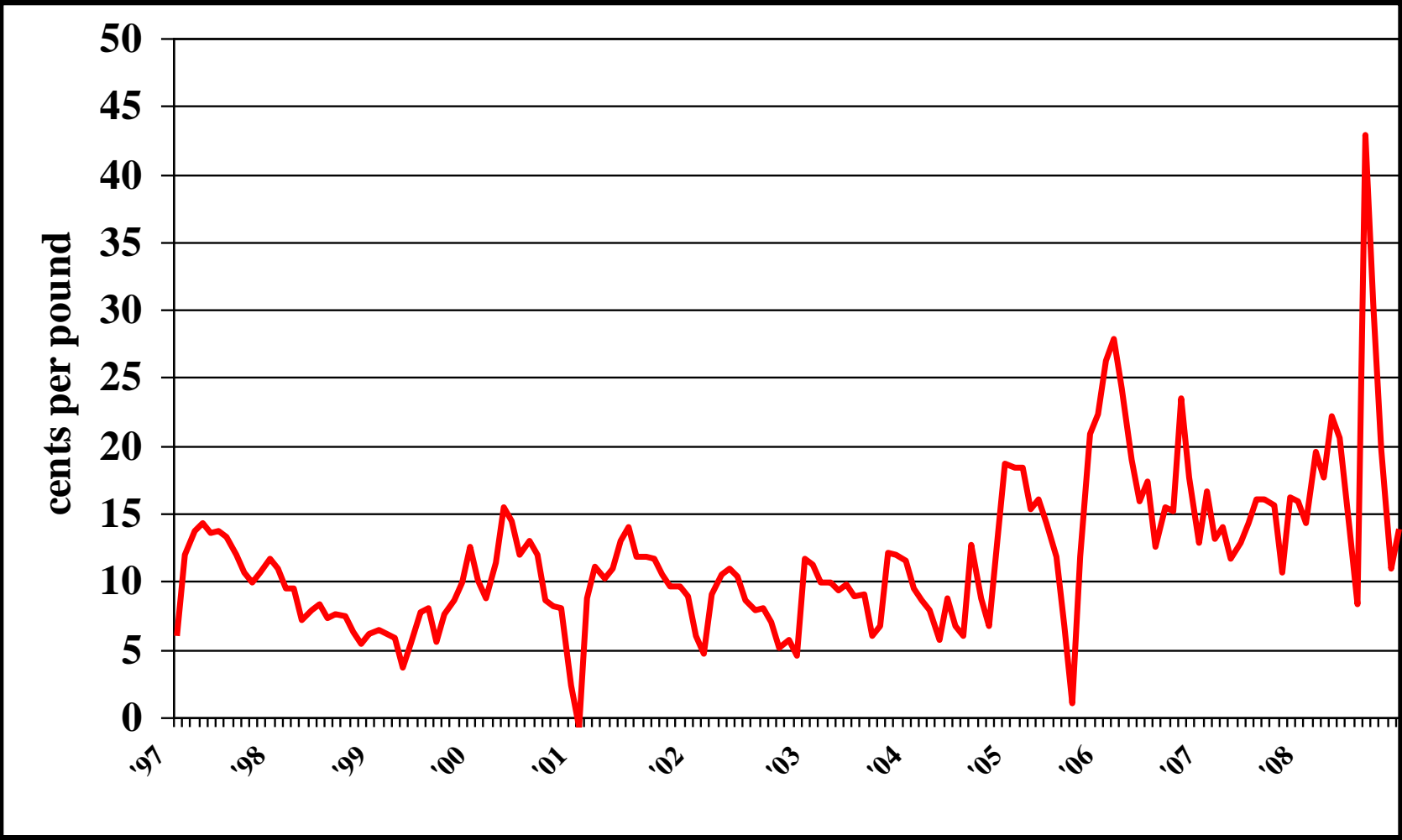


Downstream boomed, too. Now
feeling pain of slow growth ...

Refining Margins for Light Crude on U.S. Gulf Coast, 1993-2008



Ethylene Margins Cash Margins, Ethane



Houston at the End of the Commodity Boom

Robert W. Gilmer
Vice President and Senior Economist
Federal Reserve Bank of Dallas
March 2009