

## Using Stock Market Liquidity to Forecast Recessions

The National Bureau of Economic Research (NBER) Business Cycle Dating Committee (the committee that dates U.S. recessions) says that the recent recession started in the fourth quarter of 2007. But looking back years from now, that time frame might not be when we think problems in the economy actually became apparent. Instead, we might think of the “credit crunch” that began in August 2007 as the first time problems emerged. At that time, the cost of interbank borrowing jumped sharply to levels that ultimately made it difficult for firms to afford the level of borrowing that they had grown accustomed to. Once investors figured this out, they began to pull out of the stock market, thus beginning a worldwide downward trend in stock prices.

Given this sequence of events, a reasonable question is whether the decline in the liquidity of debt markets (the credit crunch) or the decline in the liquidity of equity markets (the stock market deterioration) caused the recent economic crisis and subsequent recession. For this discussion we focus on the latter, highlighting recent work by Næs, Skjeltorp, and Ødegaard<sup>1</sup> that shows that changes in the liquidity of the U.S. stock market have been coinciding with changes in the real economy at least since the Second World War. In other words, stock market liquidity is a very good leading indicator of the real economy.

There are, however, many different measures of liquidity. The one these authors focus on is one that measures how much stock prices move in response to each volume unit of trades. A high estimate indicates high liquidity (low price impact of trades) and a low estimate indicates low liquidity (high price impact of trades). Their preferred measure is constructed by averaging across the common shares of stocks listed at the New York Stock Exchange.

The chart combines a time-series plot of their preferred measure of stock market liquidity with the NBER recession periods (gray bars), illustrating the temporal relationship between stock market liquidity and the business cycle. Liquidity tends to fall before the recession and rise as the recession ends.

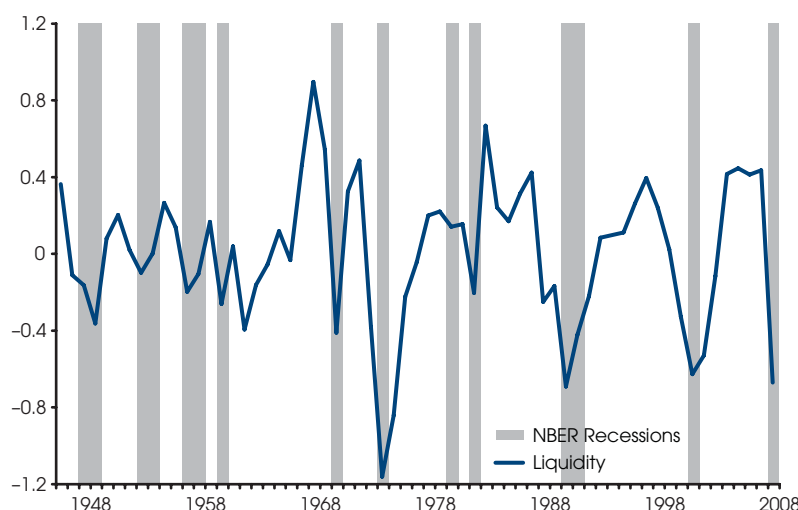
Of course, preceding a recession and actually *causing* a recession are two very different things. Stock market liquidity did not dry up without cause. It did so only after U.S. housing prices began to fall and the mortgages associated with residential loans started to become suspect. As this problem became well known, market participants began to rebalance their portfolios in a “flight to quality” toward less-risky assets (such as bonds) and away from riskier assets (such as stocks). The decline in liquidity itself did not cause the recession; it was simply a signal of something fundamental happening in the economy.

That said, it is often very difficult to determine whether fundamental shifts are taking place in an economy. In contrast, measures of stock market liquidity are readily available on a daily basis. So, while financial market liquidity may not cause recessions, keeping track of liquidity as an indicator of the state of the business cycle certainly seems like a good idea.

—Michael W. McCracken

<sup>1</sup> Næs, Randi; Skjeltorp, Johannes A. and Ødegaard, Bernt A. “Stock Market Liquidity and the Business Cycle.” Forthcoming in *Journal of Finance*; March 2010 version available at [www.afajof.org/afa/forthcoming/6765p.pdf](http://www.afajof.org/afa/forthcoming/6765p.pdf). These authors are gratefully acknowledged as the source of the data used in this essay.

Liquidity and the Business Cycle



Views expressed do not necessarily reflect official positions of the Federal Reserve System.

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## Conventions used in this publication:

1. Except where otherwise noted, solid shading indicates recessions, as determined by the National Bureau of Economic Research. The NBER has not yet determined the end of the recession that began in December 2007; however, the hatched shading shows that the recession ended in July 2009. We made this determination based on a statistical model for dating business cycle turning points developed by Marcelle Chauvet and Jeremy Piger (“A Comparison of the Real-Time Performance of Business Cycle Dating Methods,” *Journal of Business and Economic Statistics*, 2008, 26, 42-49). For more information, see [http://www.uoregon.edu/~jpiger/us\\_recession\\_probs.htm](http://www.uoregon.edu/~jpiger/us_recession_probs.htm).
2. *Percent change* refers to simple percent changes. *Percent change from year ago* refers to the percent change from the same month or quarter during the previous year. *Compounded annual rate of change* shows what the growth rate would be over an entire year if the same simple percent change continued for four quarters or twelve months. The compounded annual rate of change of  $x$  between the previous quarter  $t-1$  and the current quarter  $t$  is:  $[(x_t/x_{t-1})^4 - 1] \times 100$ . For monthly data replace 4 with 12.
3. All data with significant seasonal patterns are adjusted accordingly, unless labeled NSA.

We welcome your comments addressed to:

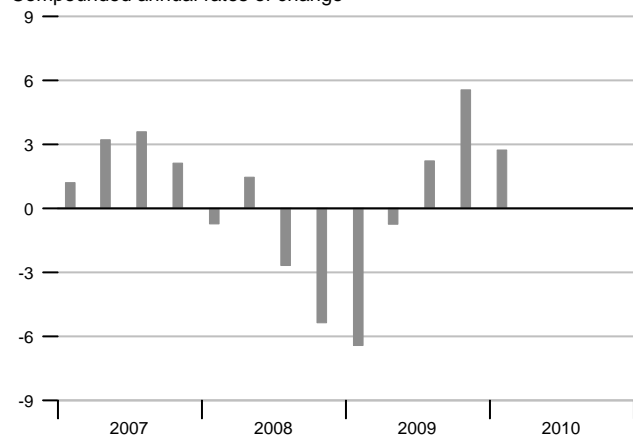
Editor, *National Economic Trends*  
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P.O. Box 442  
St. Louis, MO 63166-0442

or to:

[stlsFRED@stls.frb.org](mailto:stlsFRED@stls.frb.org)

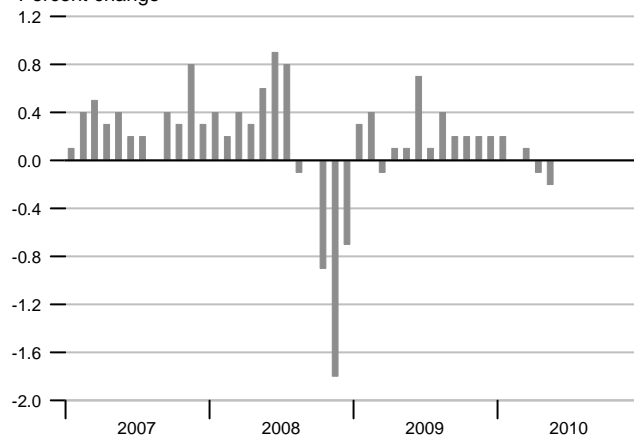
## Real GDP Growth

Compounded annual rates of change



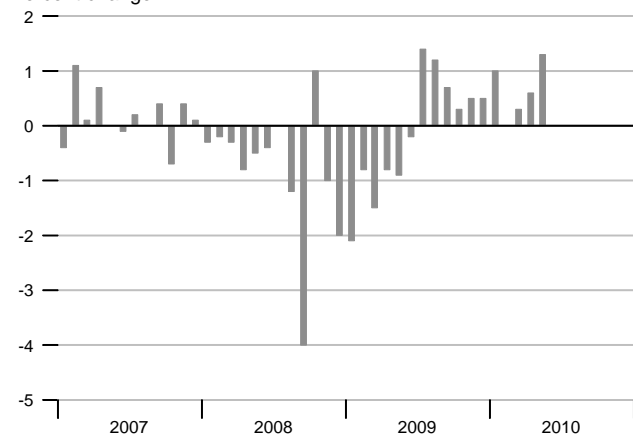
## Consumer Price Index

Percent change



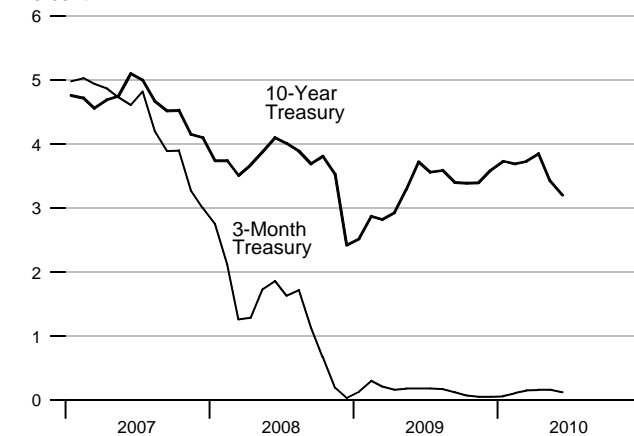
## Industrial Production

Percent change



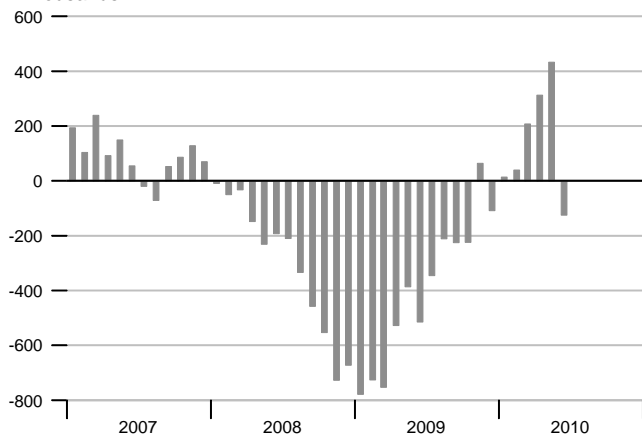
## Interest Rates

Percent



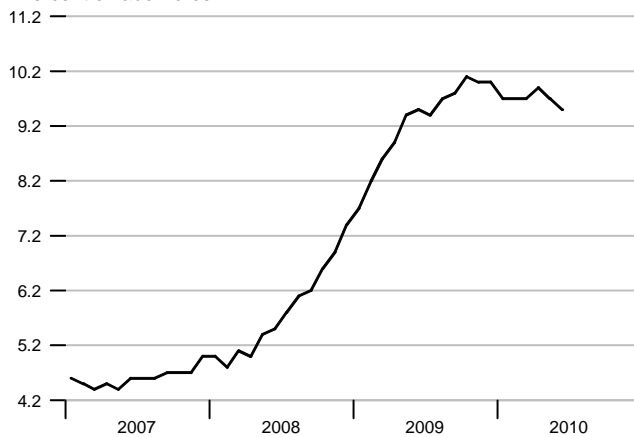
## Change in Nonfarm Payrolls

Thousands



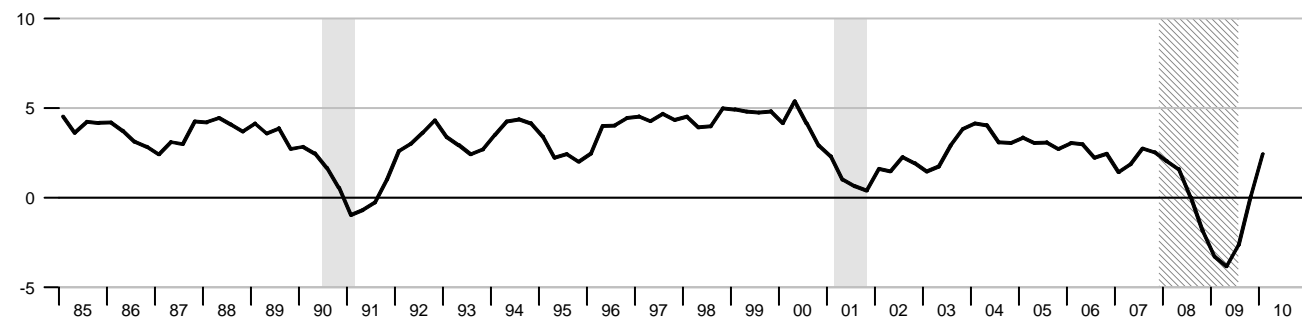
## Unemployment Rate

Percent of labor force



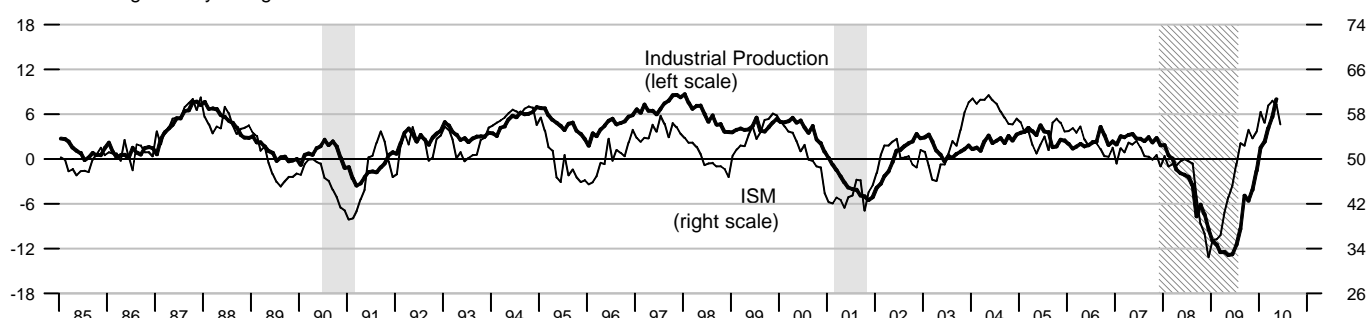
**Real Gross Domestic Product**

Percent change from year ago

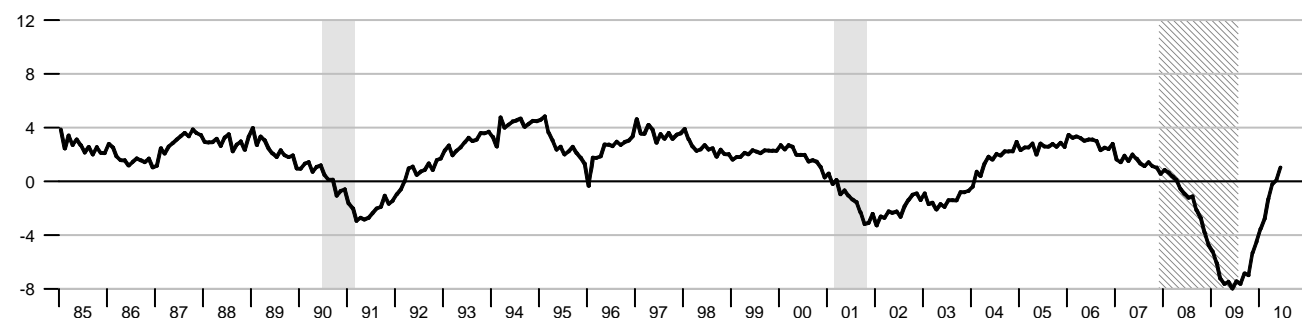
**Industrial Production and Institute for Supply Management (ISM) Indexes**

Percent change from year ago

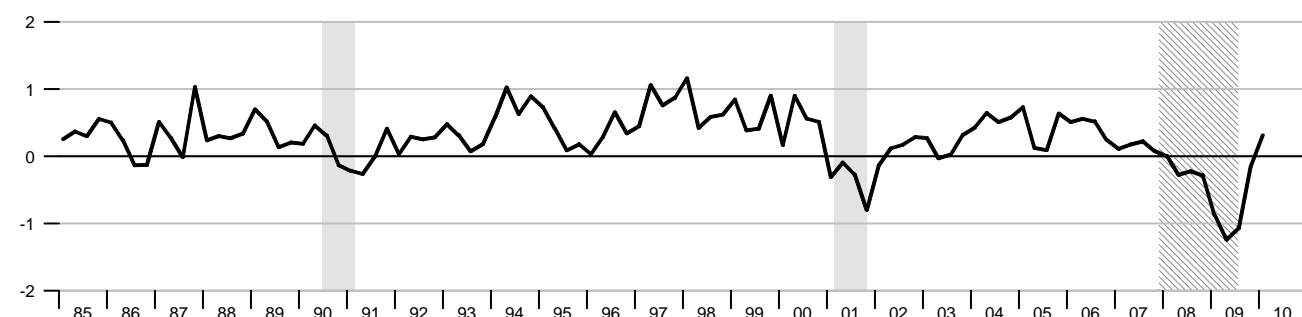
Index

**Aggregate Private Nonfarm Hours**

Percent change from year ago

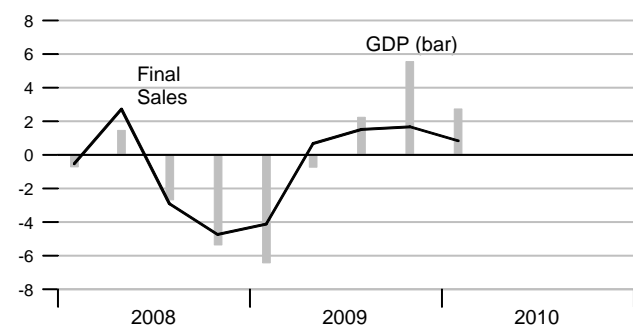
**Real Change in Private Inventories**

Percent of GDP



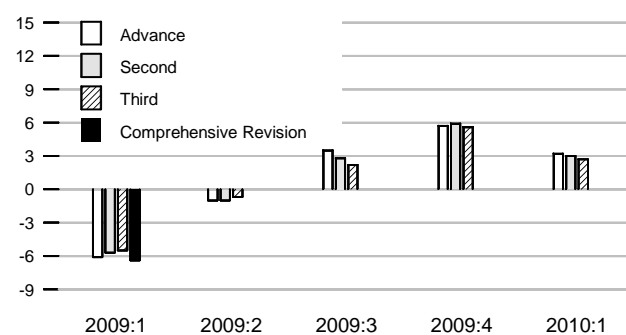
## Real Final Sales and GDP

Compounded annual rates of change



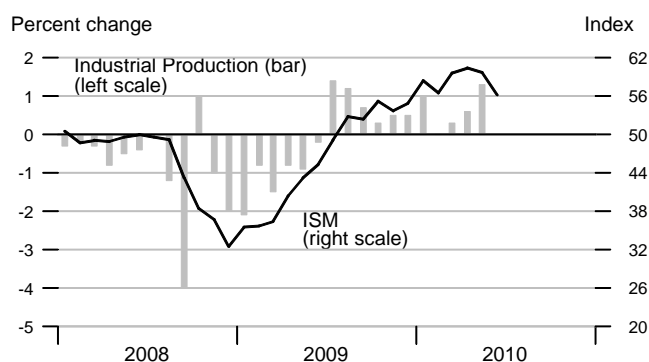
## Real GDP Revisions

Compounded annual rates of change



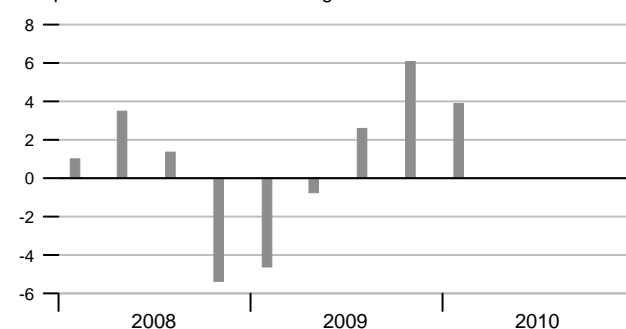
## Industrial Production and ISM Index

Percent change



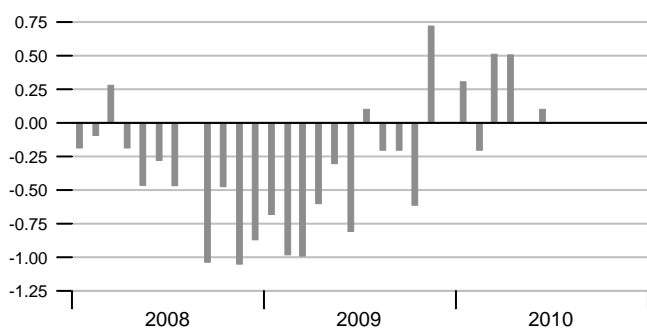
## Nominal Gross Domestic Product

Compounded annual rates of change



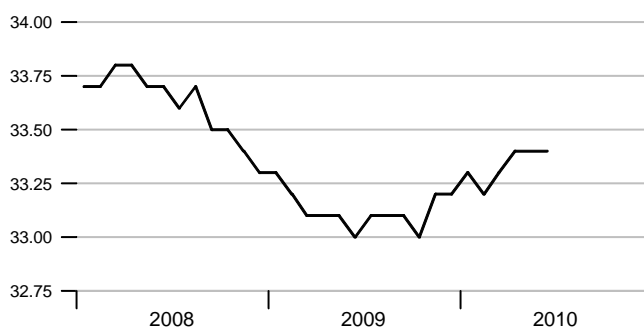
## Aggregate Private Nonfarm Hours

Percent change



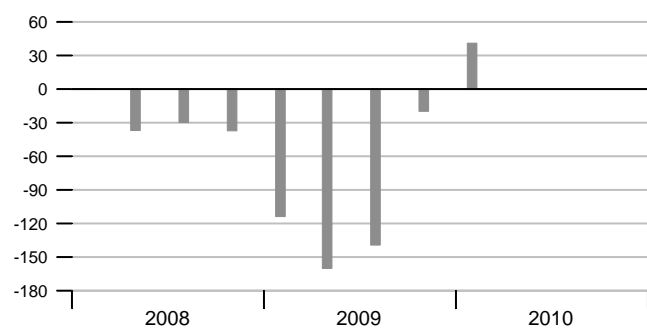
## Average Weekly Private Nonfarm Hours

Hours



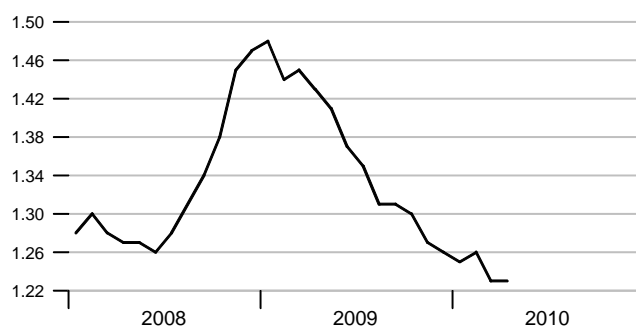
## Real Change in Private Inventories

Billions of 2005 dollars



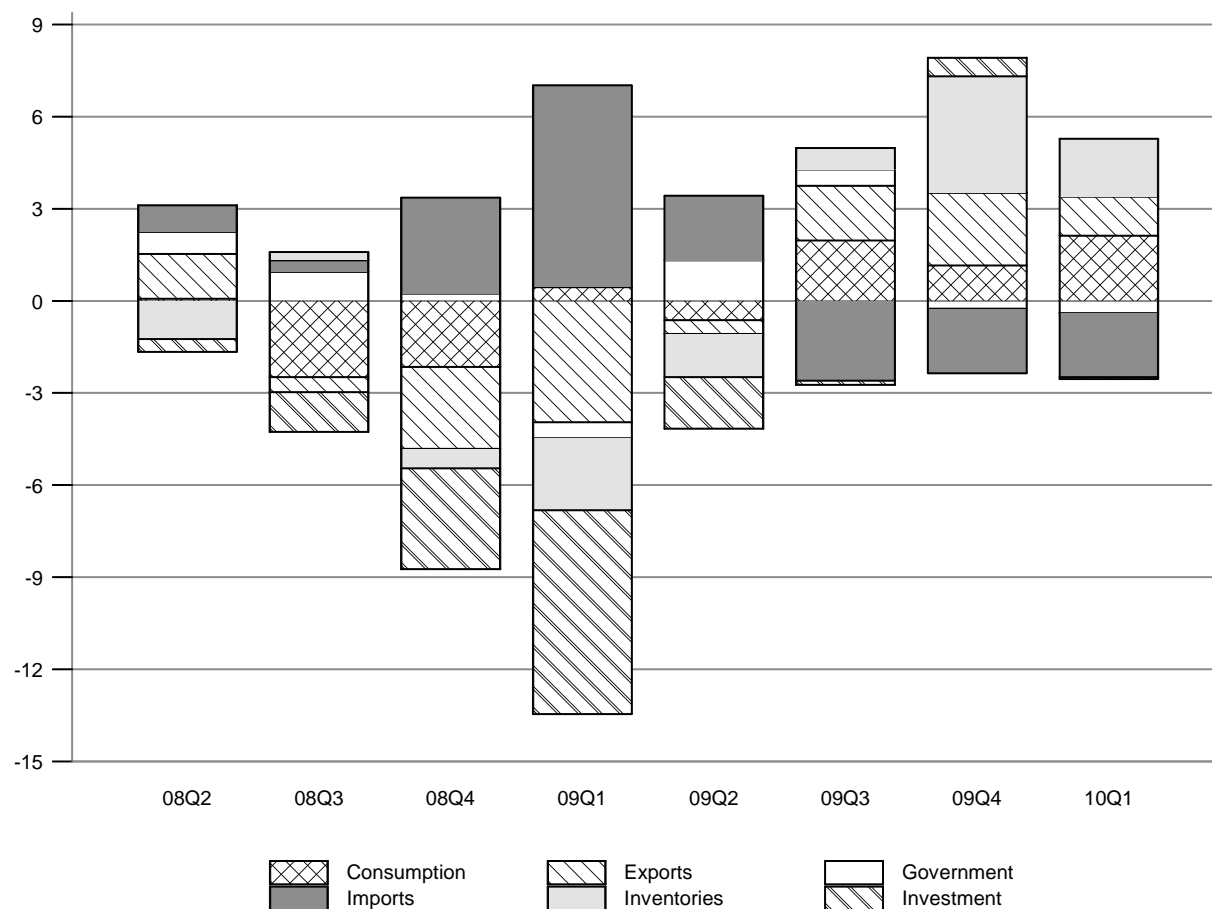
## Inventory-Sales Ratio

Manufacturing and trade



## Contribution of Components to Real GDP Growth

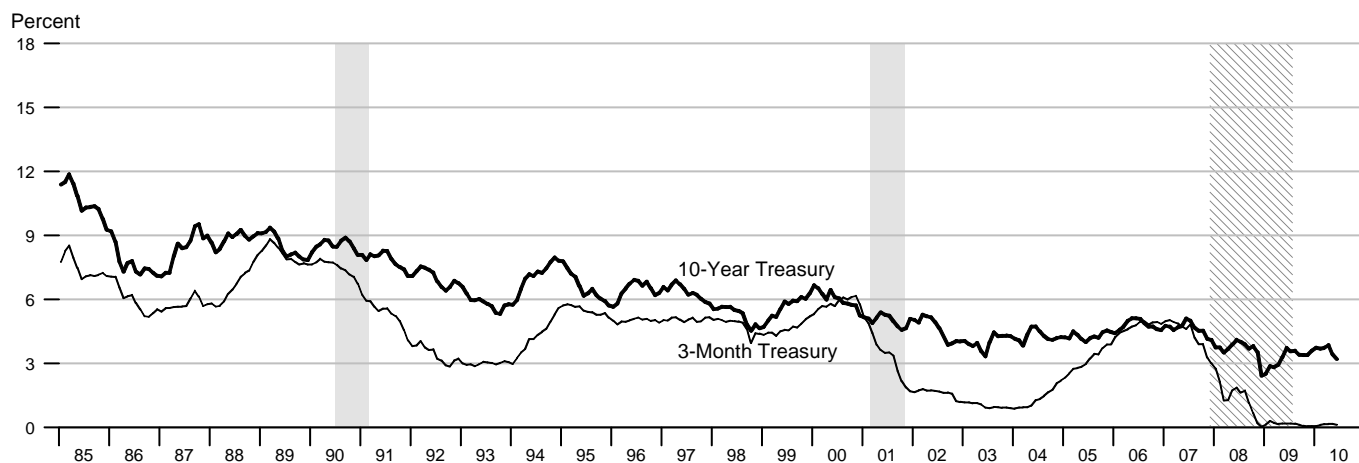
Percentage points at compounded annual rates



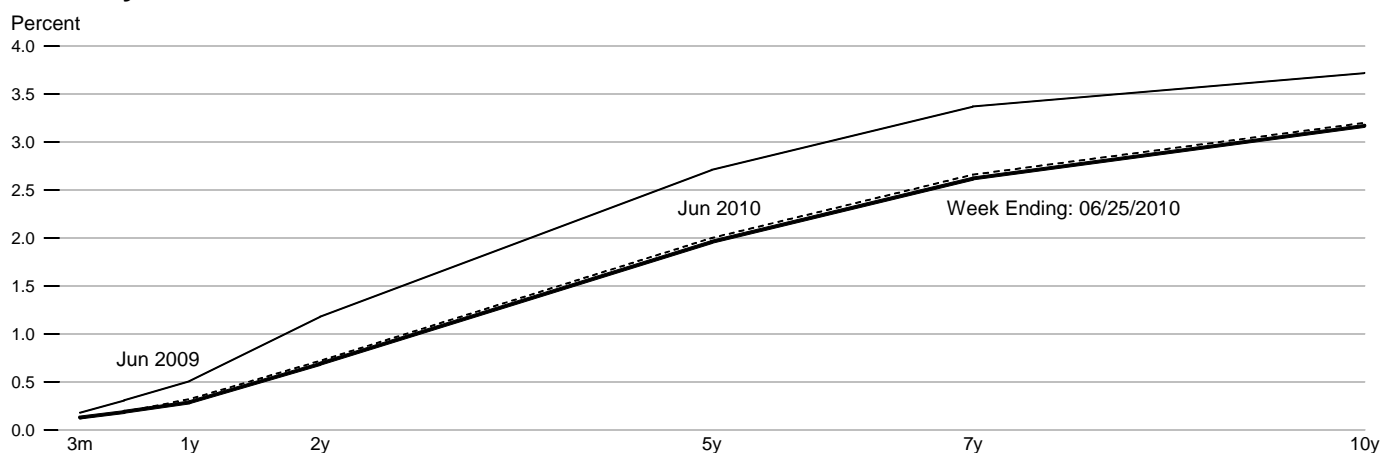
## Contributions to Real GDP Growth Rate

	2008			2009				2010
	2nd	3rd	4th	1st	2nd	3rd	4th	1st
<b>Final Sales</b>	2.71	-2.94	-4.73	-4.07	0.68	1.55	1.76	0.86
<b>Consumption</b>	0.06	-2.49	-2.15	0.44	-0.62	1.96	1.16	2.13
<b>Fixed Investment</b>	-0.41	-1.30	-3.28	-6.62	-1.68	-0.15	0.61	-0.06
Nonresidential	0.19	-0.73	-2.47	-5.29	-1.01	-0.59	0.51	0.21
Residential	-0.60	-0.57	-0.81	-1.33	-0.67	0.43	0.10	-0.27
<b>Government</b>	0.71	0.95	0.24	-0.52	1.33	0.55	-0.26	-0.39
Federal	0.55	0.93	0.49	-0.33	0.85	0.62	0.01	0.10
State and Local	0.15	0.01	-0.25	-0.19	0.48	-0.08	-0.27	-0.48
<b>Net Exports</b>	2.35	-0.10	0.45	2.64	1.65	-0.81	0.27	-0.82
Exports	1.47	-0.48	-2.67	-3.95	-0.45	1.78	2.36	1.27
Imports	0.88	0.38	3.12	6.58	2.09	-2.59	-2.09	-2.09
<b>Change in Inventory</b>	-1.25	0.26	-0.64	-2.36	-1.42	0.69	3.79	1.88
<b>Residual</b>	0.06	0.07	-0.22	0.02	0.02	0.03	-0.02	-0.06
<b>Real GDP Growth</b>	1.46	-2.68	-5.37	-6.43	-0.74	2.24	5.55	2.74

## Interest Rates



## Treasury Yield Curve

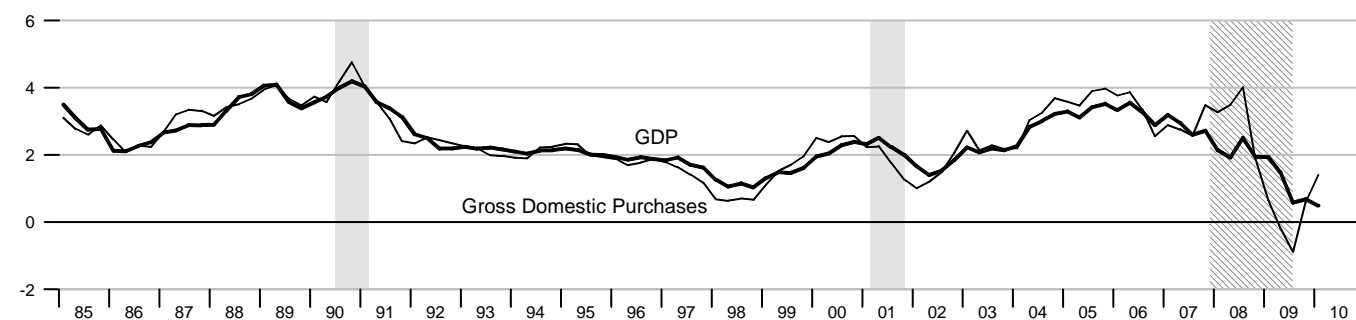


## Standard and Poor's 500 Index with Reinvested Dividends



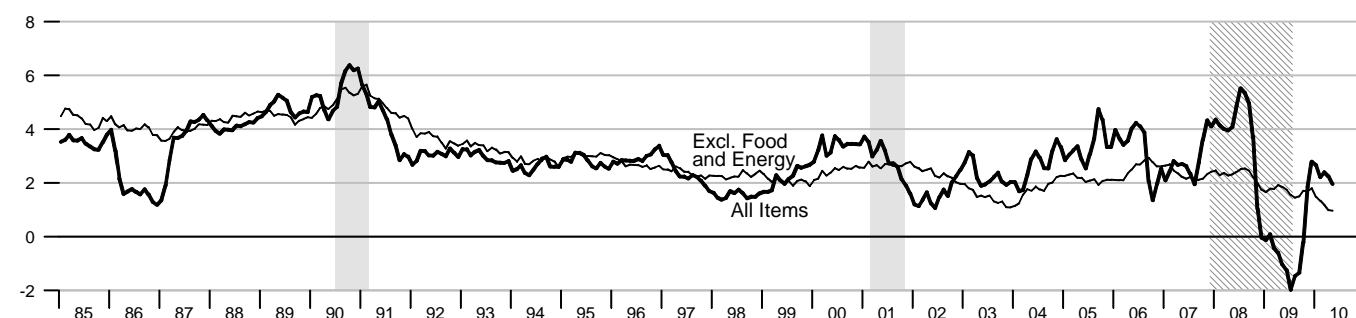
## NIPA Chain Price Indexes

Percent change from year ago



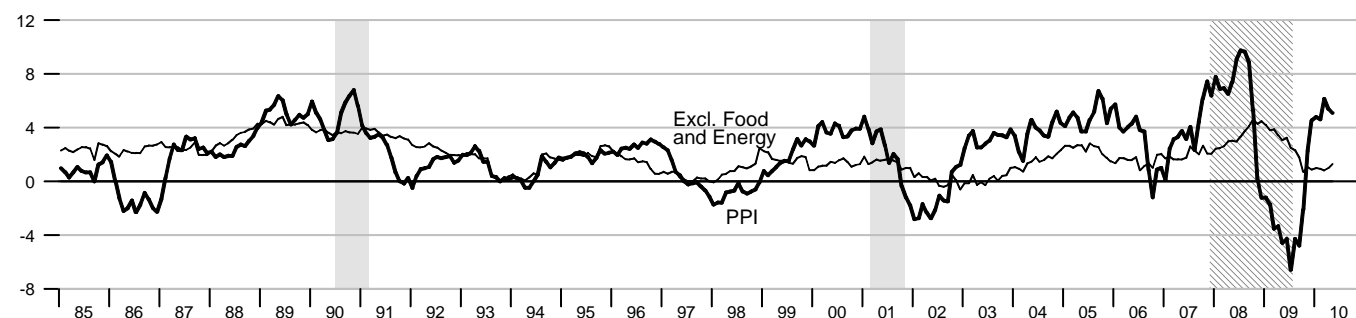
## Consumer Price Index

Percent change from year ago



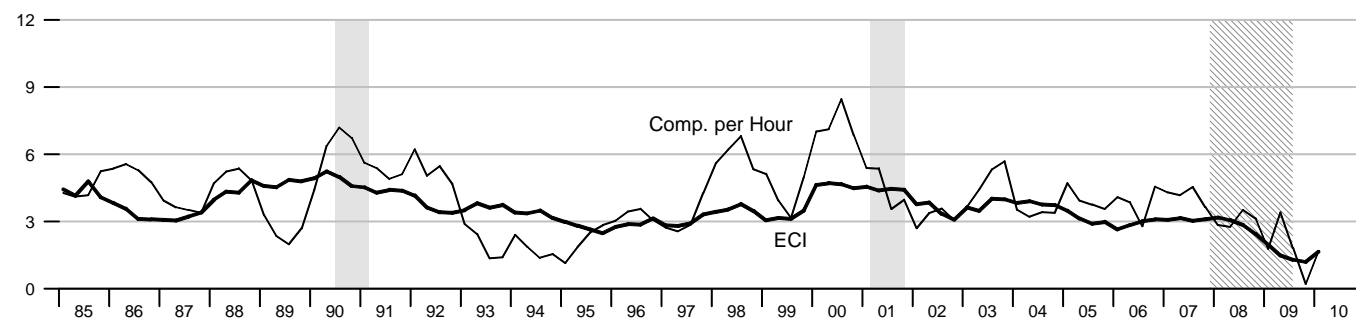
## Producer Price Index, Finished Goods

Percent change from year ago



## Employment Cost Index and Compensation per Hour

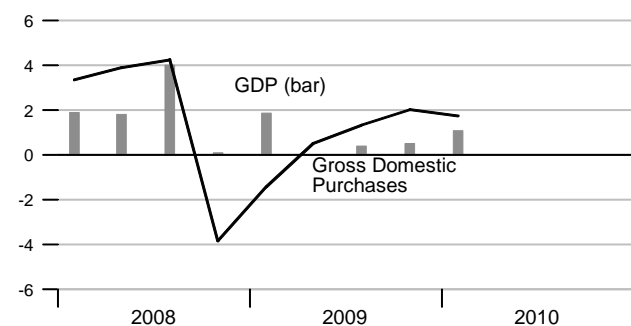
Percent change from year ago





## NIPA Chain Price Indexes

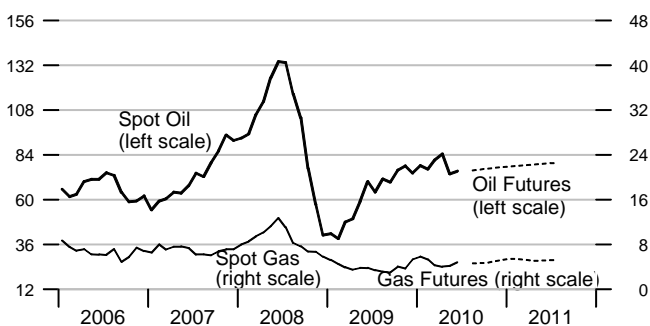
Compounded annual rates of change



## Oil & Natural Gas Prices: Spot & Futures

Dollars per barrel

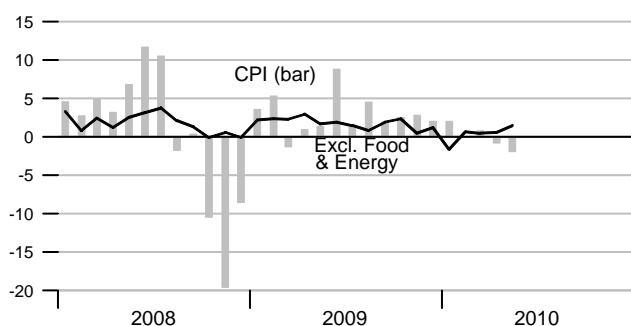
Dollars per million btu



Note: Futures prices as of 6/30/2010.

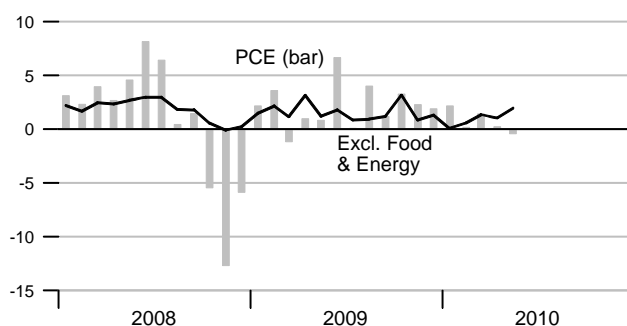
## Consumer Price Index

Compounded annual rates of change



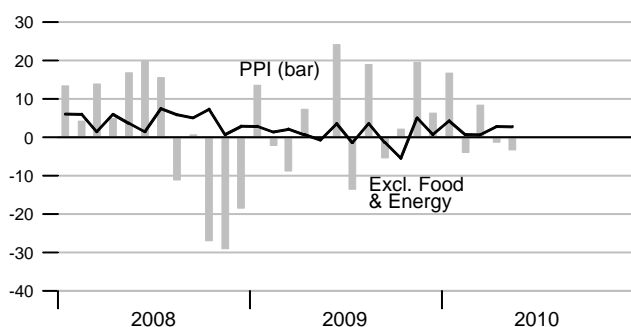
## Consumption Chain Price Index

Compounded annual rates of change



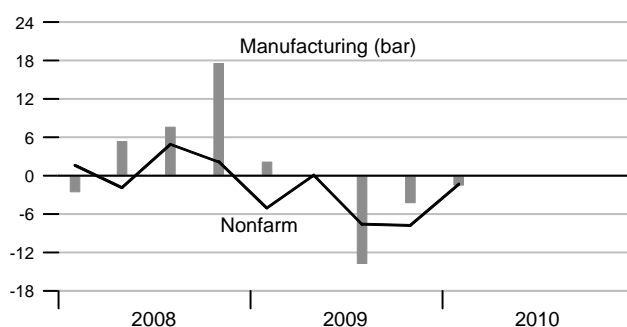
## Producer Price Index, Finished Goods

Compounded annual rates of change



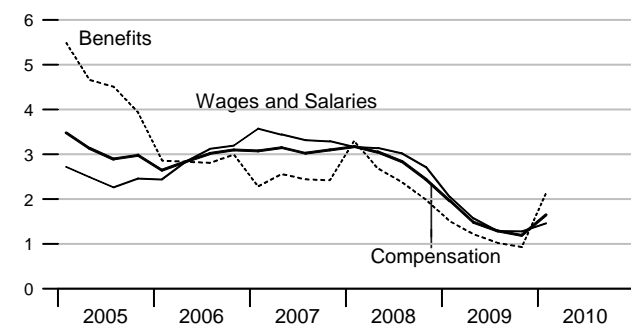
## Unit Labor Cost

Compounded annual rates of change



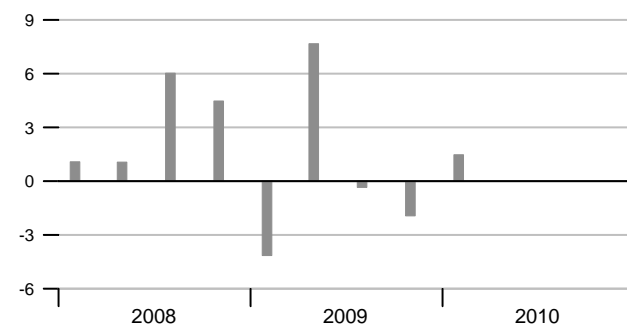
## Employment Cost Index

Percent change from year ago



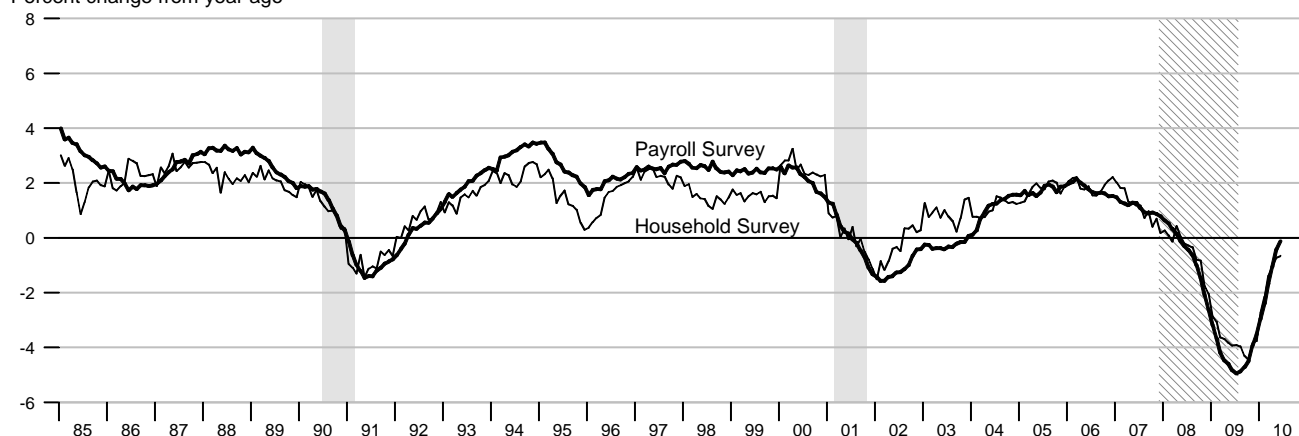
## Compensation per Hour

Compounded annual rates of change



## Employment

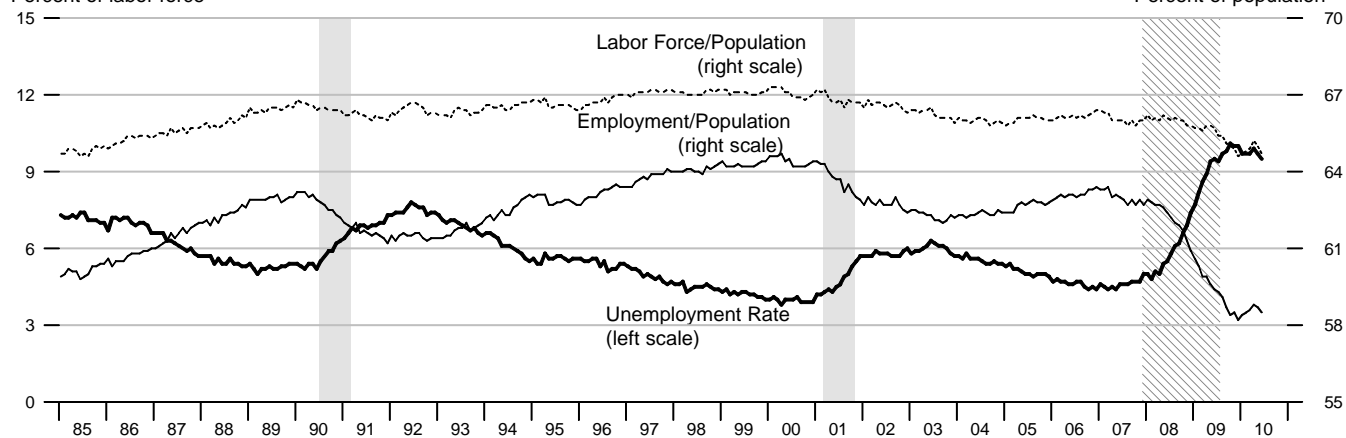
Percent change from year ago



## Unemployment, Labor Force Participation, and Employment Rates

Percent of labor force

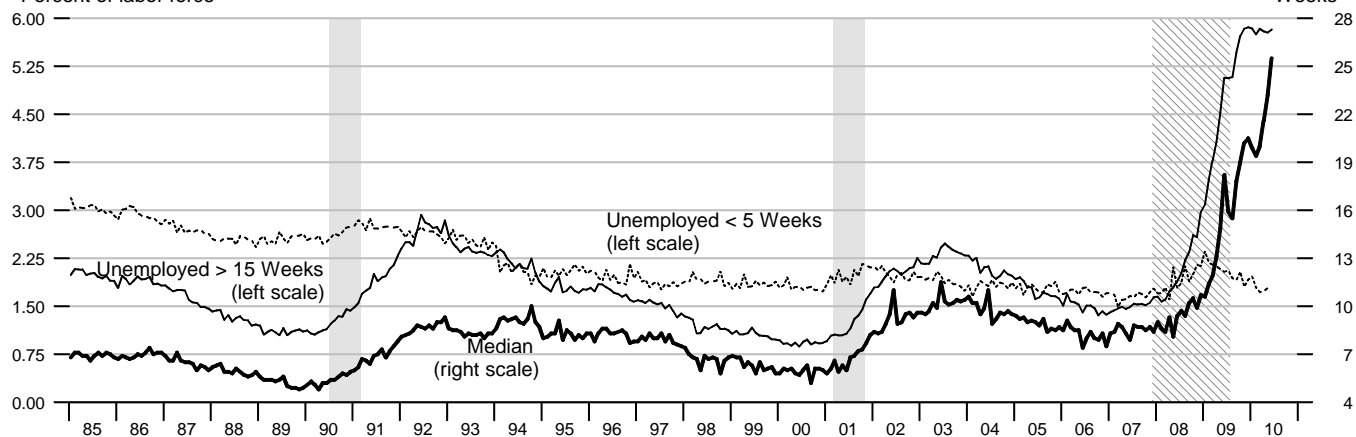
Percent of population



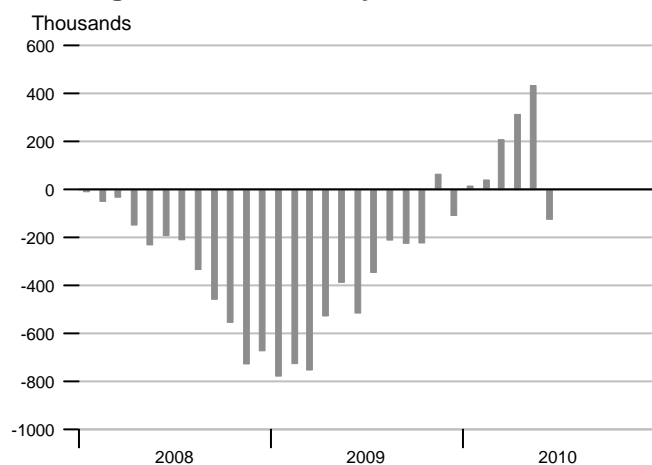
## Duration of Unemployment

Percent of labor force

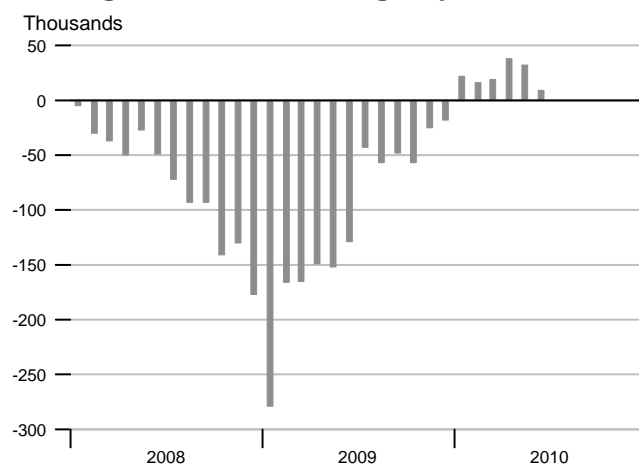
Weeks



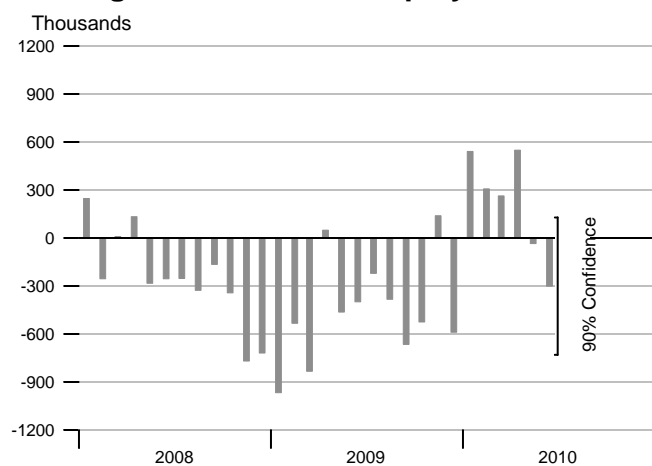
### Change in Nonfarm Payrolls



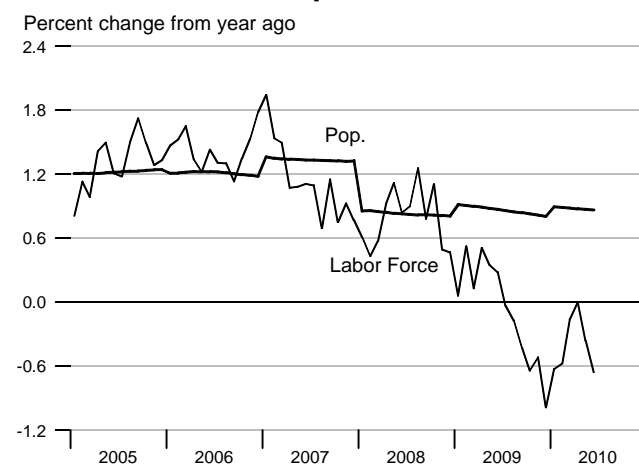
### Change in Manufacturing Payrolls



### Change in Household Employment



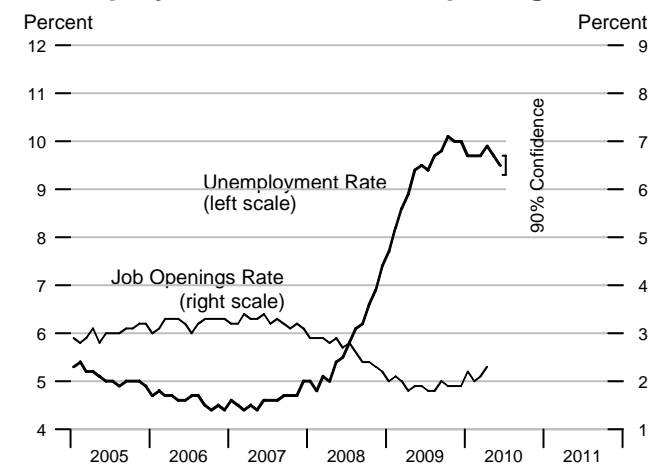
### Labor Force and Population



### Available Labor Supply and Components

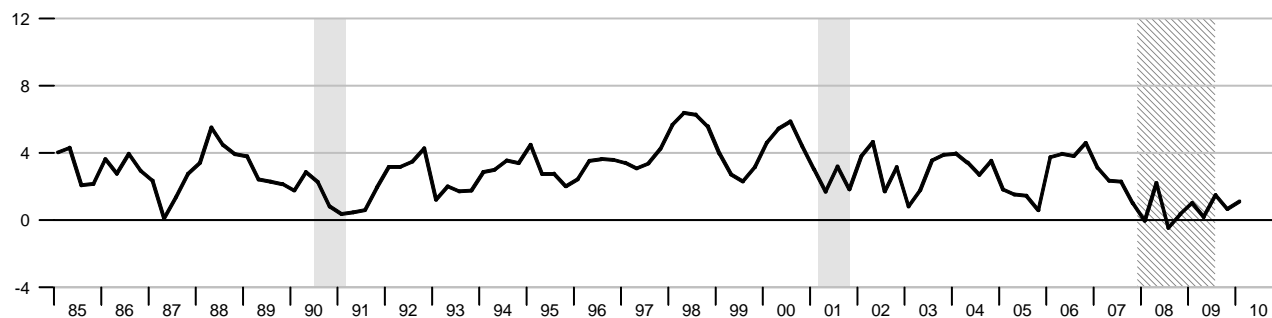


### Unemployment Rate & Job Openings Rate



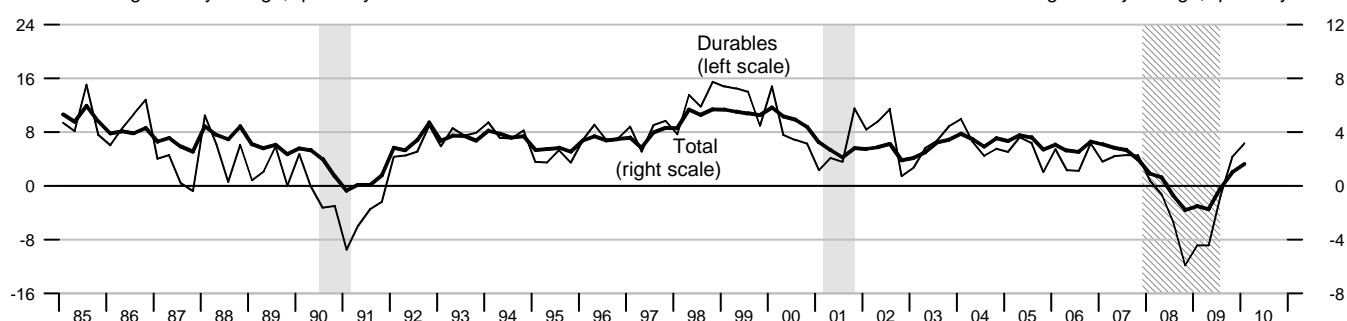
**Real Disposable Personal Income**

Percent change from year ago, quarterly data

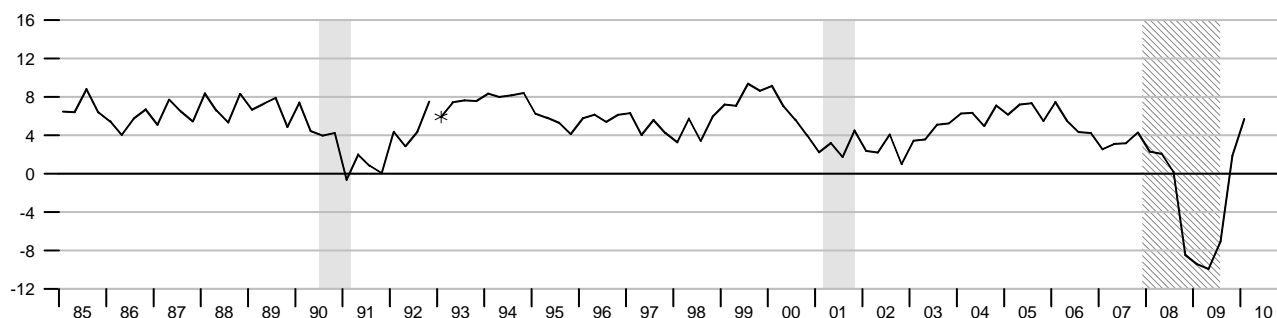
**Real Consumption**

Percent change from year ago, quarterly data

Percent change from year ago, quarterly data

**Retail and Food Services Sales**

Percent change from year ago, quarterly average

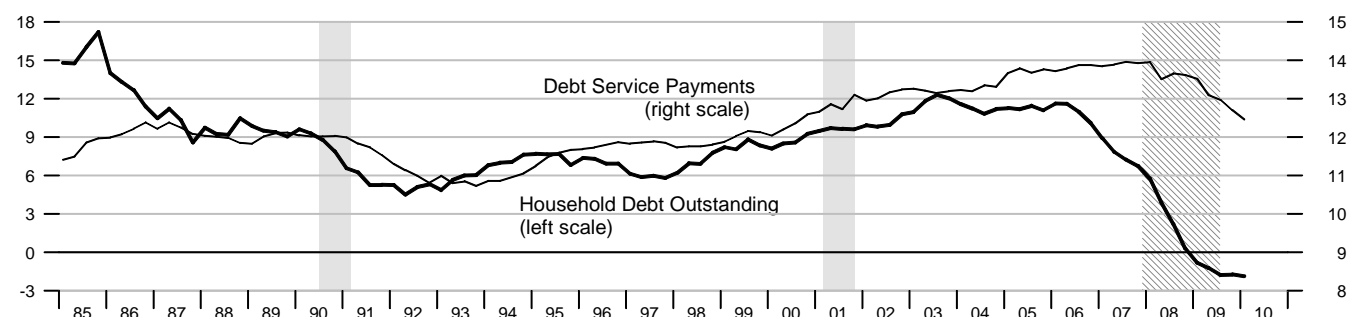


\*Data from Jan. 1992 to the present are on a NAICS basis; data prior to Jan. 1992 are on an SIC basis and are not strictly comparable (see End Note).

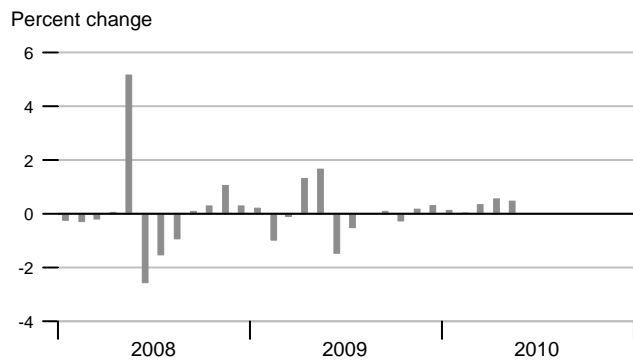
**Debt Service Payments and Household Debt Outstanding**

Percent change from year ago, quarterly data

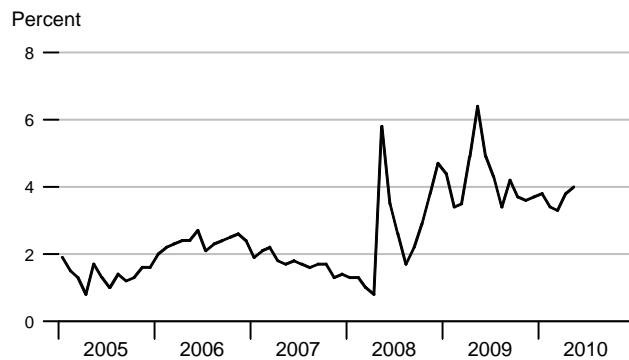
Percent of disposable personal income



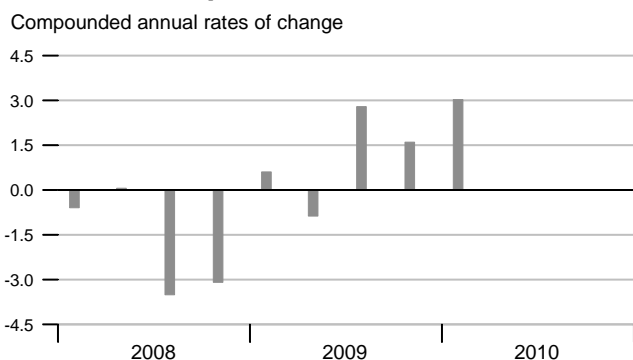
### Real Disposable Personal Income



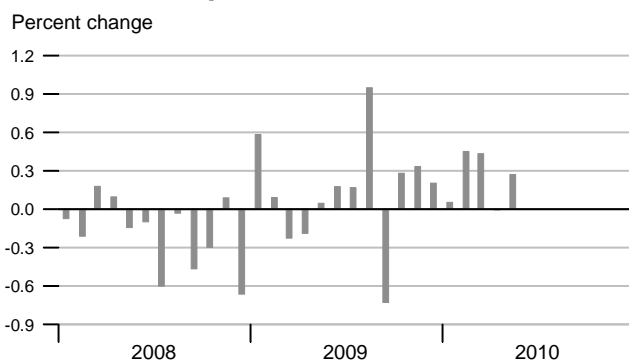
### Personal Saving Rate



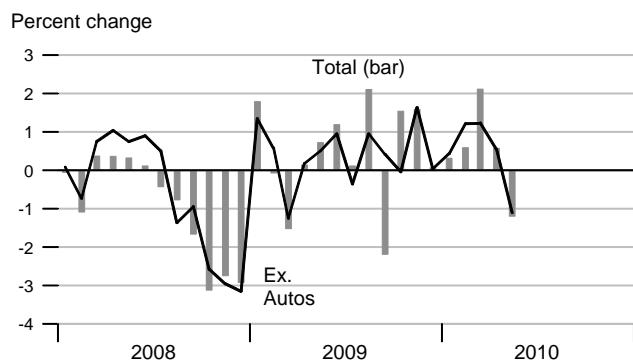
### Real Consumption



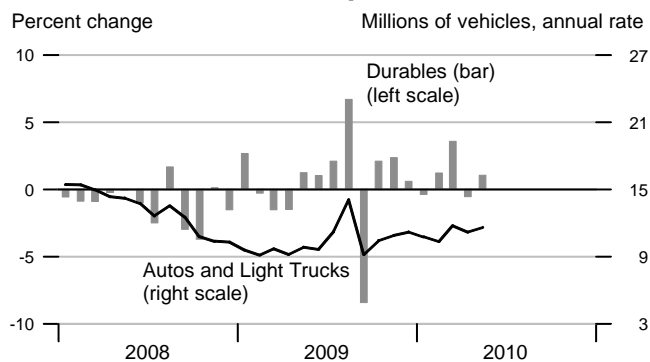
### Real Consumption



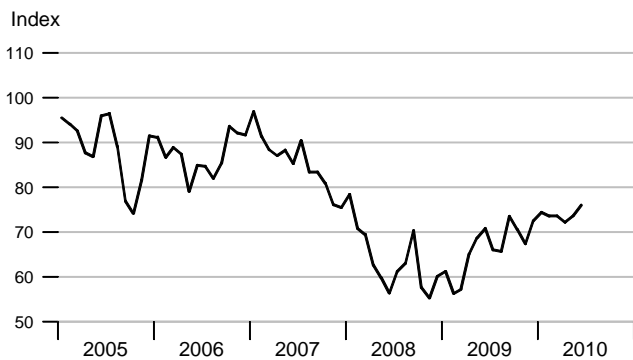
### Retail & Food Services



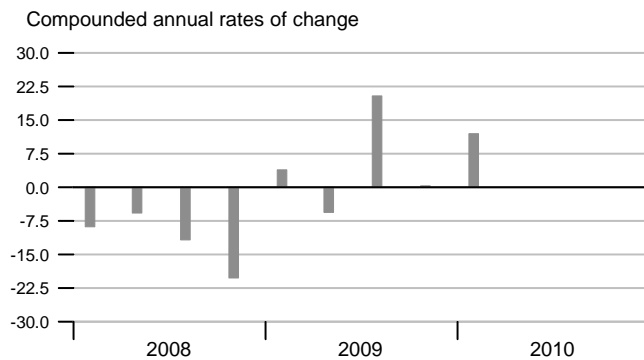
### Real Durables Consumption & Vehicle Sales



### Consumer Sentiment (U. of Michigan)

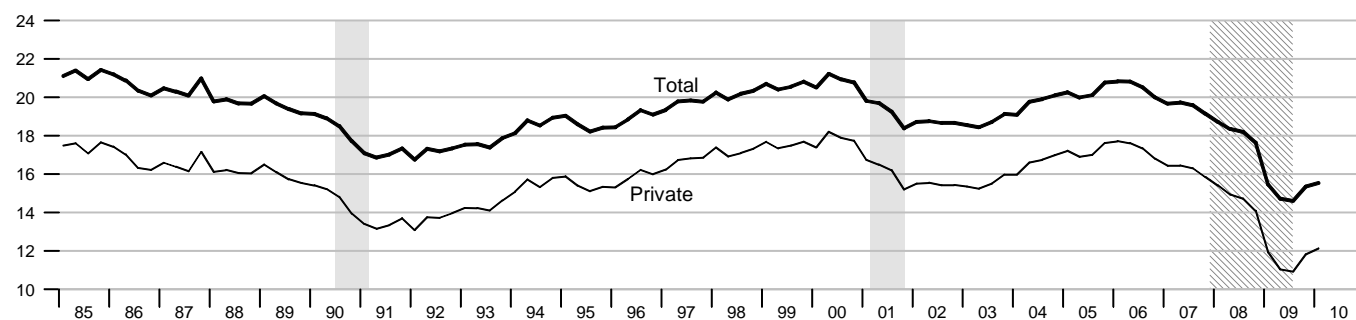


### Real Durables Consumption



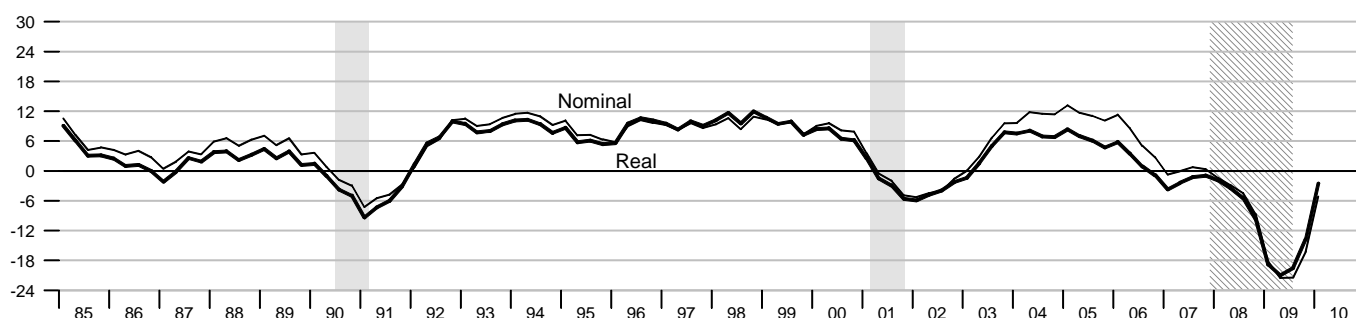
## Investment

Percent of nominal GDP



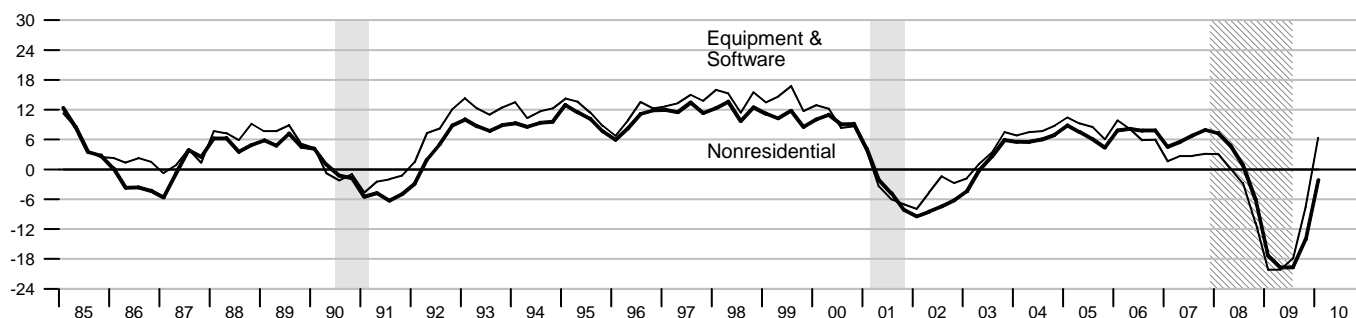
## Private Fixed Investment

Percent change from year ago



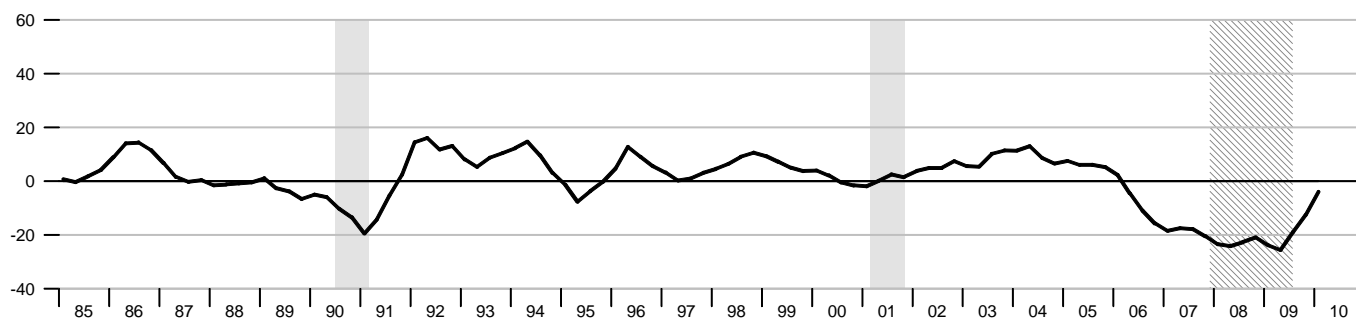
## Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago



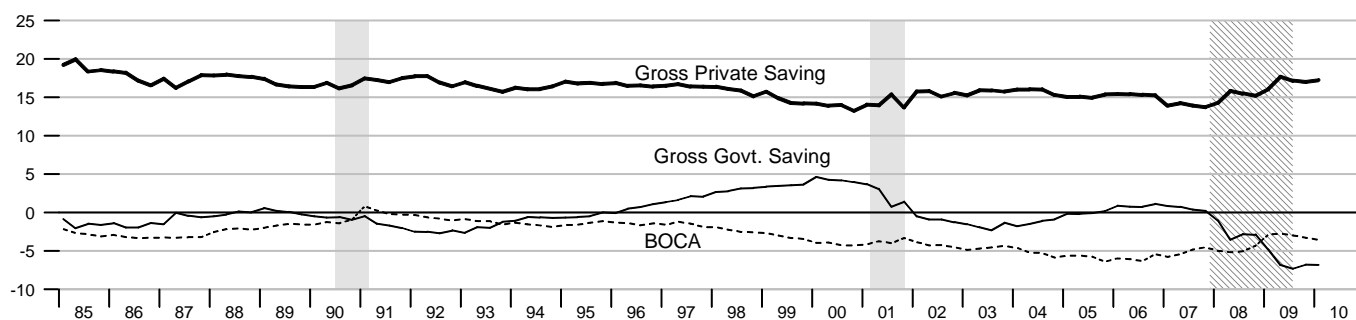
## Real Residential Fixed Investment

Percent change from year ago



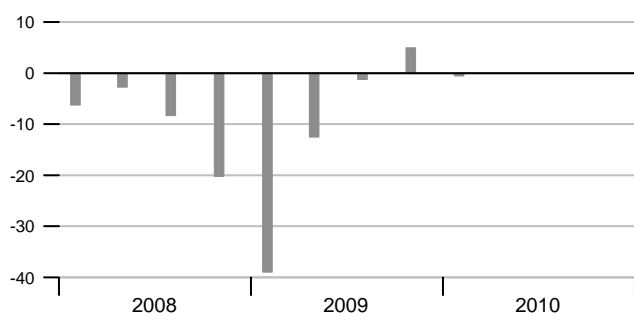
## Gross Saving Rates and Balance on Current Account (NIPA)

Percent of GDP



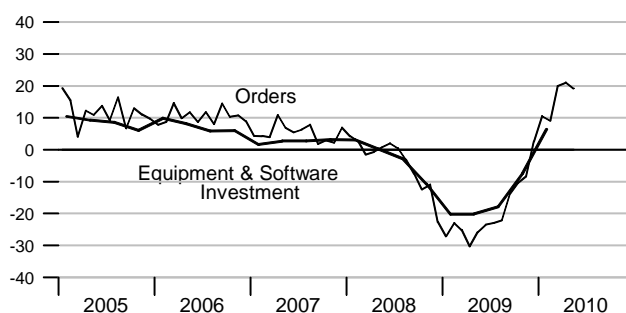
## Real Private Fixed Investment

Compounded annual rates of change



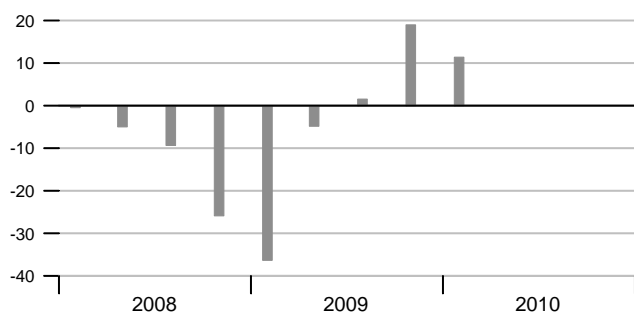
## Nondefense Capital Goods Orders

Percent change from year ago, excluding aircraft



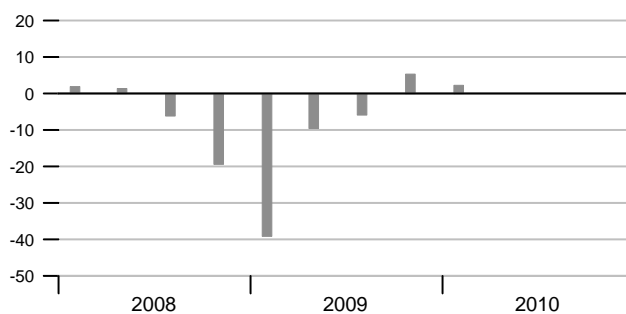
## Real Equipment & Software Investment

Compounded annual rates of change



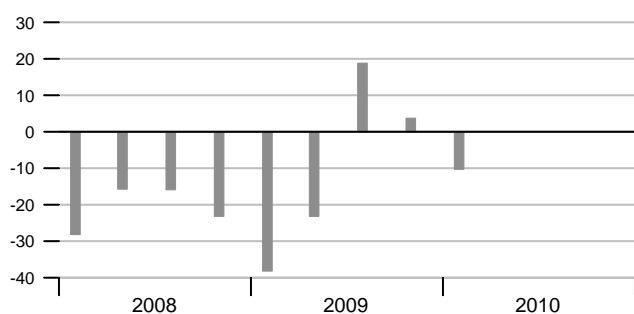
## Real Nonresidential Fixed Investment

Compounded annual rates of change



## Real Residential Fixed Investment

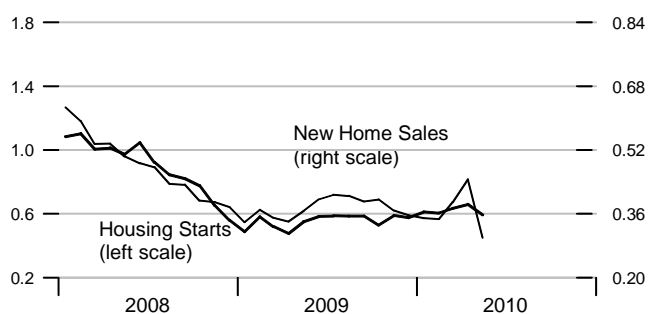
Compounded annual rates of change



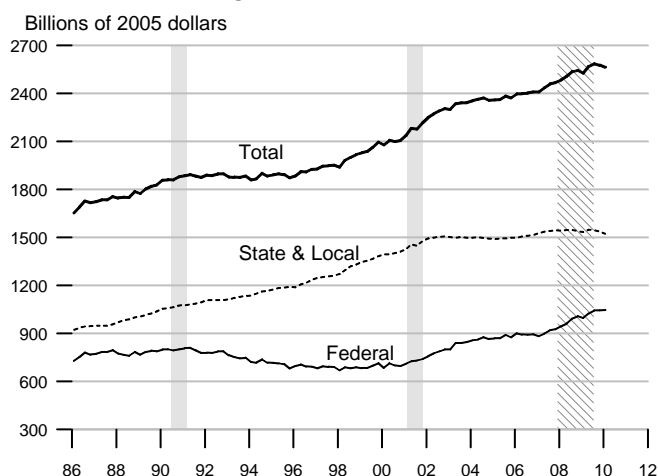
## Housing Starts and New Home Sales

Millions, annual rate

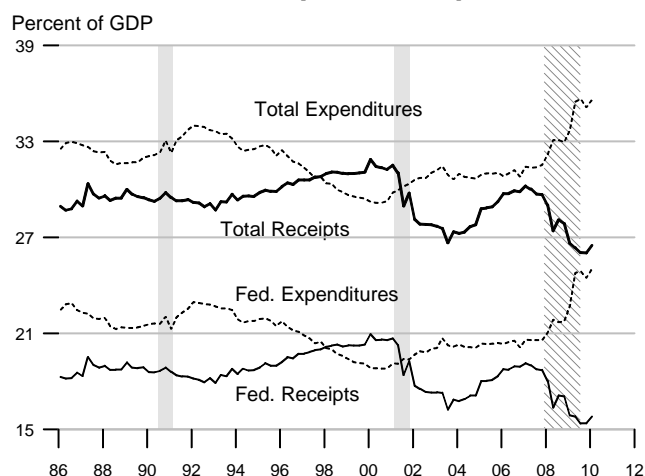
Millions, annual rate



## Govt. Consumption and Investment



## Govt. Current Receipts and Expenditures



## Government Budgets

Billions of dollars

### National Income Accounts

Calendar Years

### Unified Budget

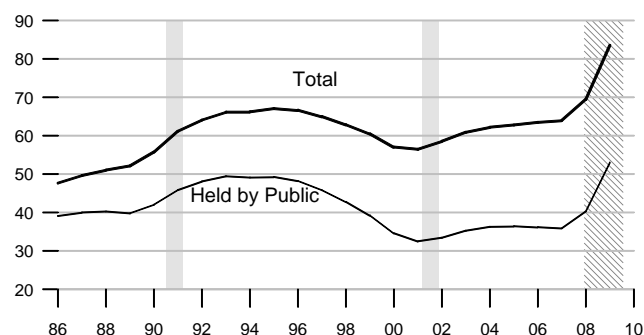
Fiscal Years

	State and Local			Federal			Federal		
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1996	1045.1	1022.1	23.0	1526.4	1674.7	-148.3	1453.1	1560.5	-107.4
1997	1099.5	1063.2	36.3	1656.2	1716.3	-60.1	1579.2	1601.1	-21.9
1998	1164.5	1117.6	46.9	1777.9	1744.3	33.6	1721.7	1652.5	69.3
1999	1240.4	1198.6	41.8	1895.0	1796.2	98.8	1827.5	1701.8	125.6
2000	1322.6	1281.3	41.3	2057.1	1871.9	185.2	2025.2	1789.0	236.2
2001	1374.0	1389.9	-15.9	2020.3	1979.8	40.5	1991.1	1862.9	128.2
2002	1412.7	1466.8	-54.1	1859.3	2112.1	-252.8	1853.1	2010.9	-157.8
2003	1496.3	1535.1	-38.8	1885.1	2261.5	-376.4	1782.3	2159.9	-377.6
2004	1601.0	1609.3	-8.3	2013.9	2393.4	-379.5	1880.1	2292.9	-412.7
2005	1730.4	1704.5	25.9	2290.1	2573.1	-283.0	2153.6	2472.0	-318.3
2006	1829.7	1778.6	51.1	2524.5	2728.3	-203.8	2406.9	2655.1	-248.2
2007	1927.3	1905.6	21.7	2660.8	2897.2	-236.4	2568.0	2728.7	-160.7
2008	1974.2	2014.4	-40.2	2475.0	3117.6	-642.6	2524.0	2982.6	-458.6
2009	1995.5	2014.6	-19.1	2224.9	3451.3	-1226	2105.0	3517.7	-1413
2008Q2	1994.2	2019.8	-25.6	2372.1	3169.0	-796.9	787.9	761.0	26.9
2008Q3	1987.5	2046.5	-59.0	2489.5	3155.2	-665.7	590.0	758.9	-169.0
2008Q4	1951.4	2007.5	-56.1	2447.8	3121.9	-674.1	547.4	879.9	-332.5
2009Q1	1961.4	1998.0	-36.6	2251.3	3220.3	-969.0	442.3	891.2	-448.9
2009Q2	1989.3	2013.9	-24.6	2237.0	3505.9	-1269	598.8	903.7	-304.9
2009Q3	2003.6	2018.6	-15.0	2188.5	3542.1	-1354	515.9	845.3	-329.4
2009Q4	2027.5	2028.0	-0.5	2222.7	3537.0	-1314	487.8	875.8	-388.1
2010Q1	2064.5	2046.9	17.6	2305.1	3652.0	-1347	466.1	795.0	-328.9



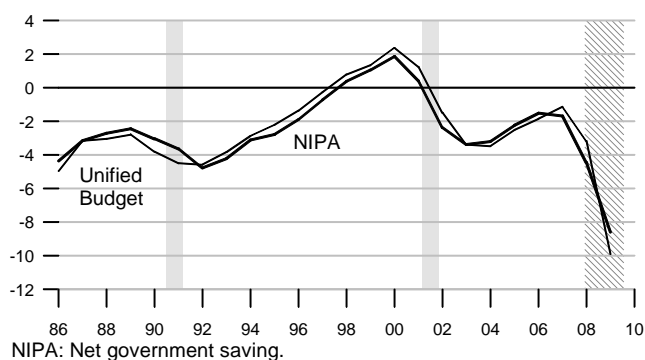
## Federal Debt

Percent of GDP



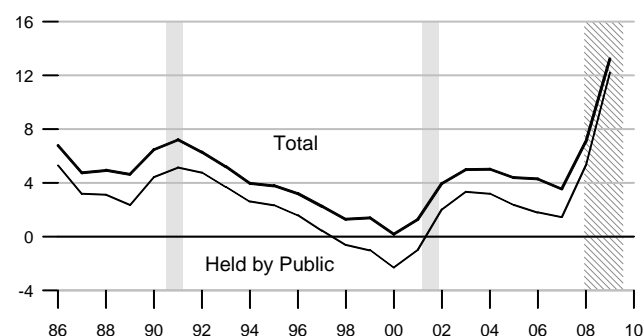
## Federal Surplus (+) / Deficit (-)

Percent of GDP



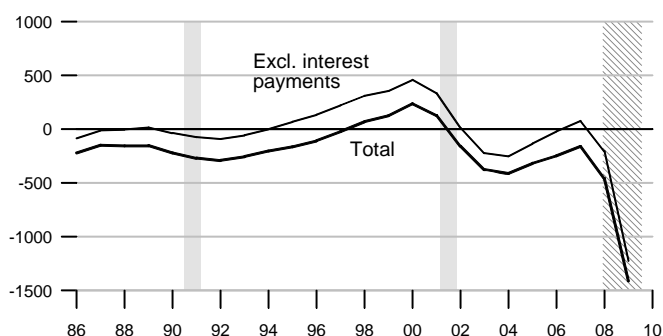
## Change in Federal Debt

Percent of GDP



## Federal Surplus (+) / Deficit (-), Unified Basis

Billions of dollars, fiscal years

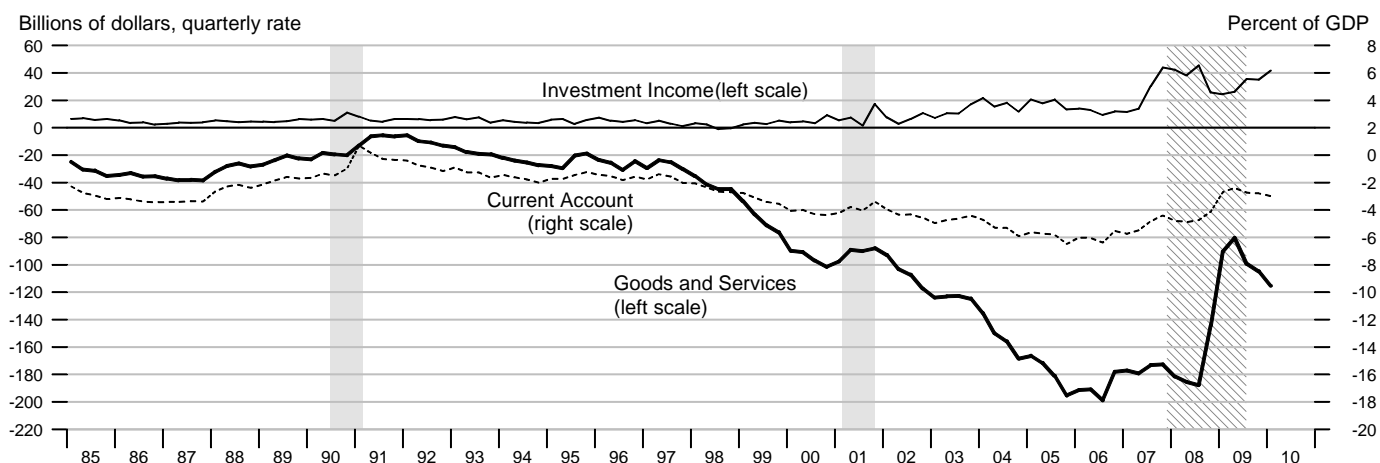


## Federal Government Debt

Billions of dollars, end of month or fiscal year  
Excludes Agency-issued debt

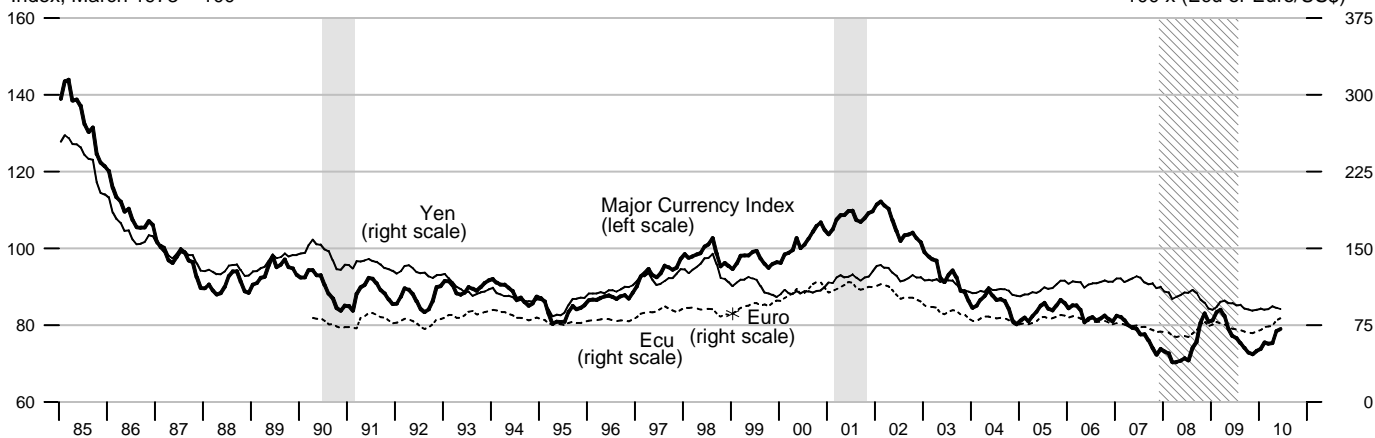
			Held by Public		Held by Private Investors			
Total Public Debt			Held by Agencies and Trusts	Total	Federal Reserve Banks	Total	Foreign and International	
2007			9007.7	3958.4	5049.2	779.6	4269.7	2235.3
2008			10024.7	4210.5	5814.2	476.6	5332.0	2799.5
2009			11909.8	4355.3	7554.5	769.2	6782.7	3575.3
2007	March	8849.7	3795.4	5054.3	780.9	4273.1	2194.8	
	June	8867.7	3924.7	4943.0	790.5	4152.6	2192.0	
	September	9007.7	3958.4	5049.2	779.6	4269.7	2235.3	
	December	9229.2	4092.9	5136.3	740.6	4395.7	2353.2	
2008	March	9437.6	4103.6	5334.0	591.2	4742.9	2505.8	
	June	9492.0	4207.0	5285.0	478.8	4806.2	2587.2	
	September	10024.7	4210.5	5814.2	476.6	5332.0	2799.5	
	December	10699.8	4327.2	6372.7	475.9	5893.4	3075.9	
2009	March	11126.9	4290.6	6836.3	492.3	6341.7	3264.6	
	June	11545.3	4368.8	7176.5	656.5	6518.5	3460.3	
	September	11909.8	4355.3	7554.5	769.2	6782.7	3575.3	
	December	12311.4	4497.0	7814.4	776.6	7034.5	3691.5	
2010	March	12773.1	4478.9	8294.3	776.7	7513.3	3884.0	

## Current Account, Trade and Investment Income Balances

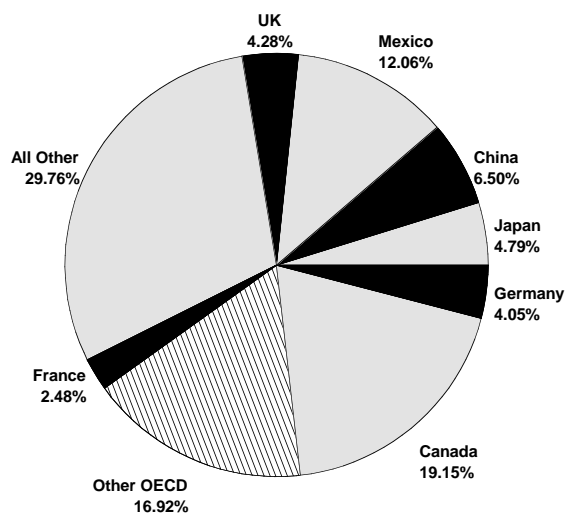


## Exchange Rates

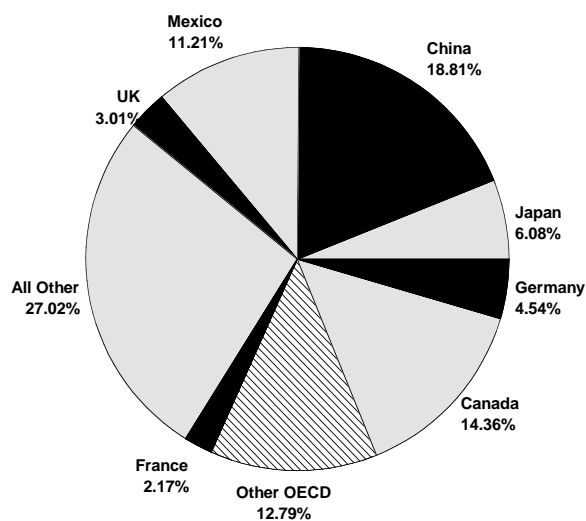
Index, March 1973 = 100

Yen/US\$  
100 x (Ecu or Euro/US\$)

## Goods Export Shares, 2009

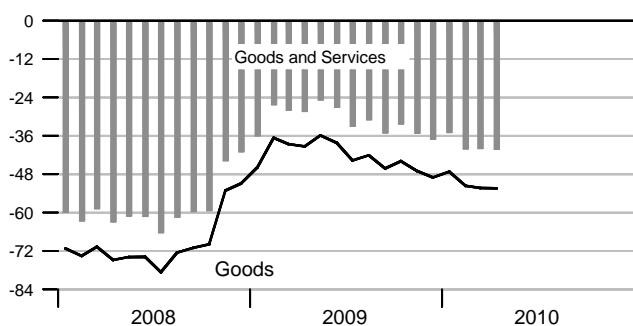


## Goods Import Shares, 2009



## Trade Balance

Billions of dollars



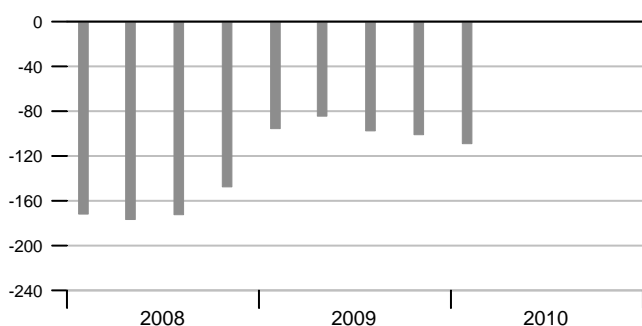
## Goods Trade

Percent change from year ago



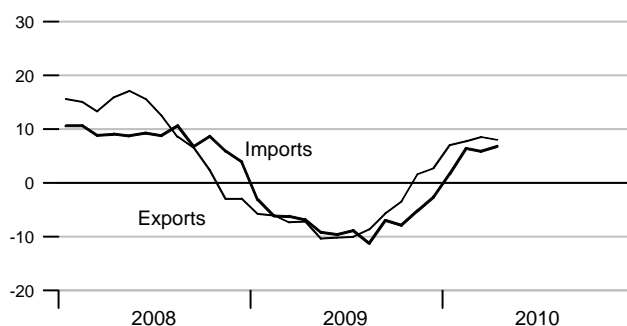
## Current Account Balance

Billions of dollars



## Services Trade

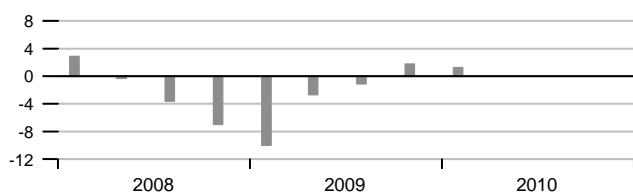
Percent change from year ago



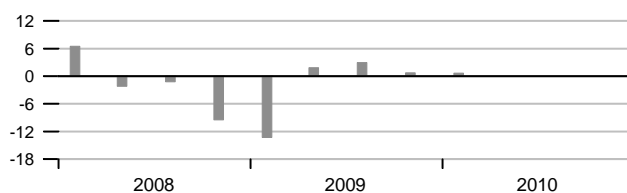
## Real GDP Growth of Major Trading Partners

Compounded annual rates of change

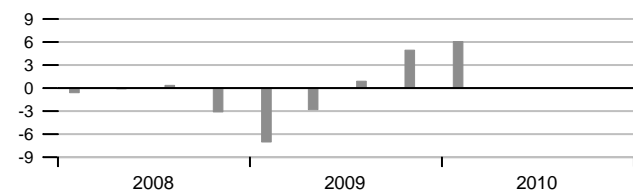
### United Kingdom



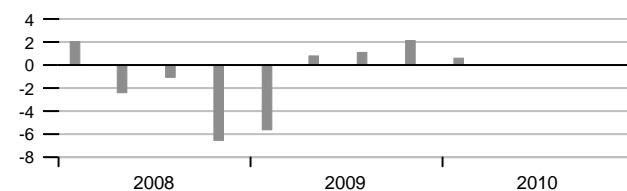
### Germany



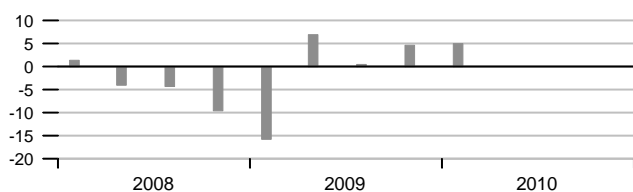
### Canada



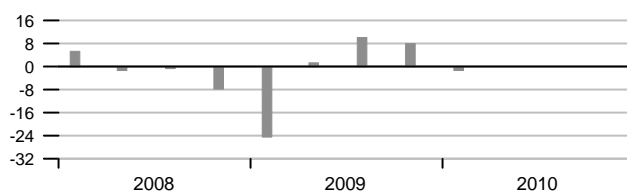
### France

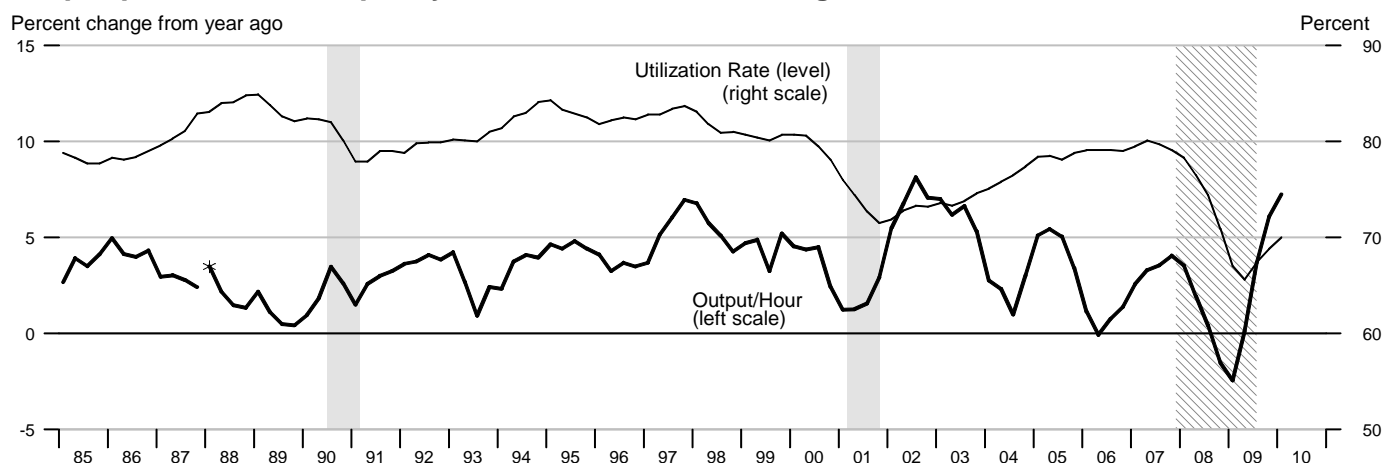


### Japan

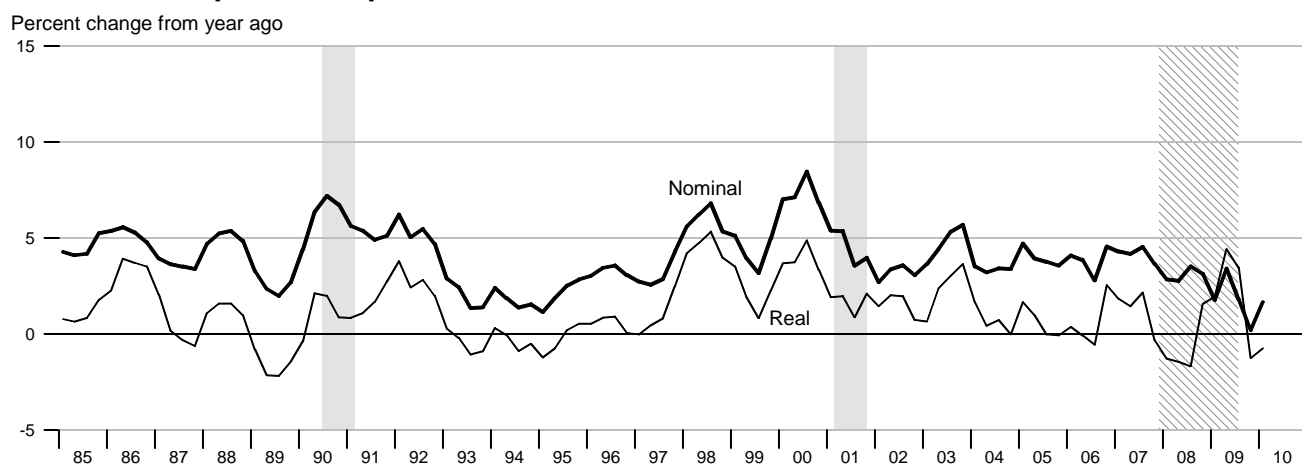
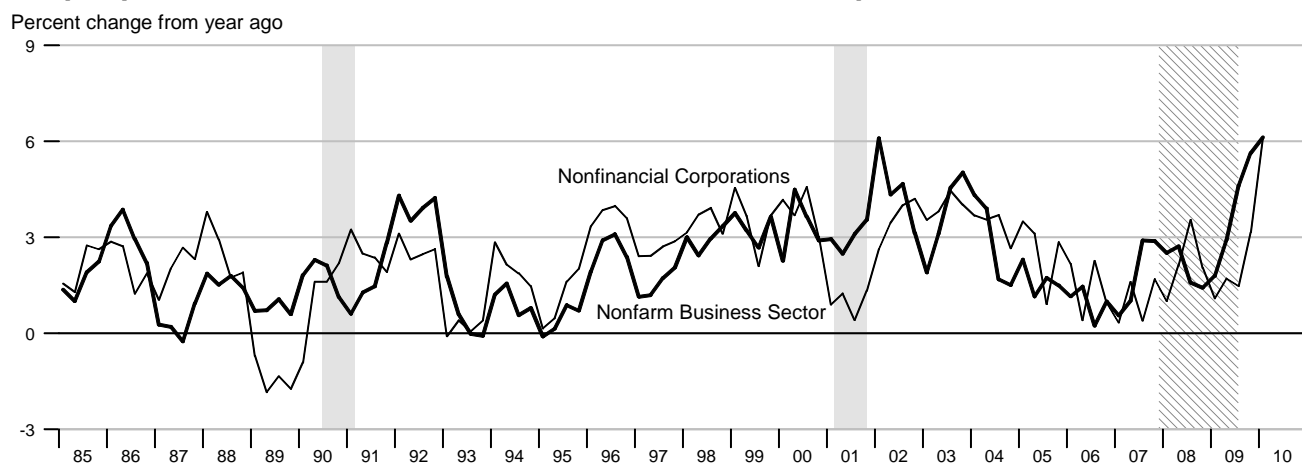


### Mexico



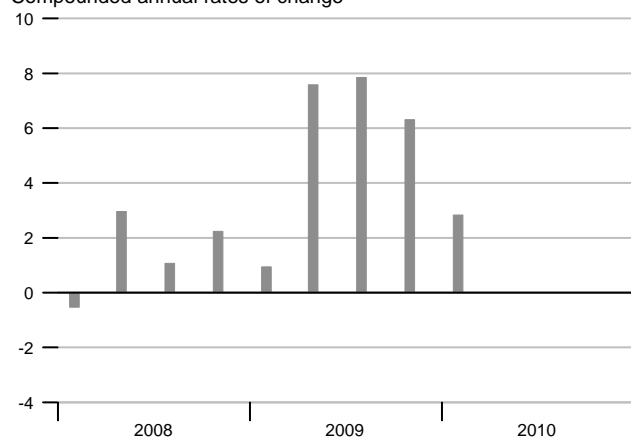
**Output per Hour and Capacity Utilization, Manufacturing**

\*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

**Nonfarm Compensation per Hour****Output per Hour, Nonfarm Business and Nonfinancial Corporations**

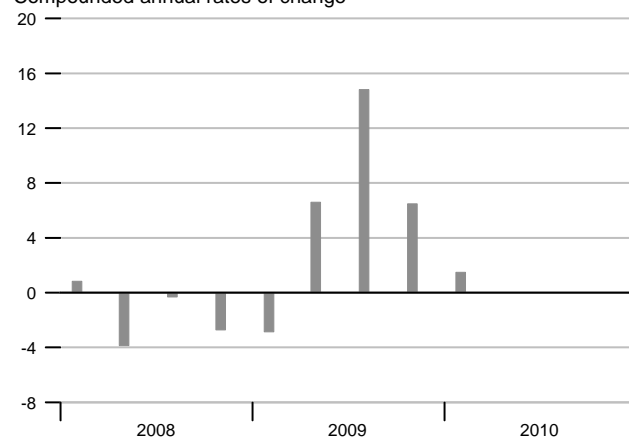
## Nonfarm Output per Hour

Compounded annual rates of change

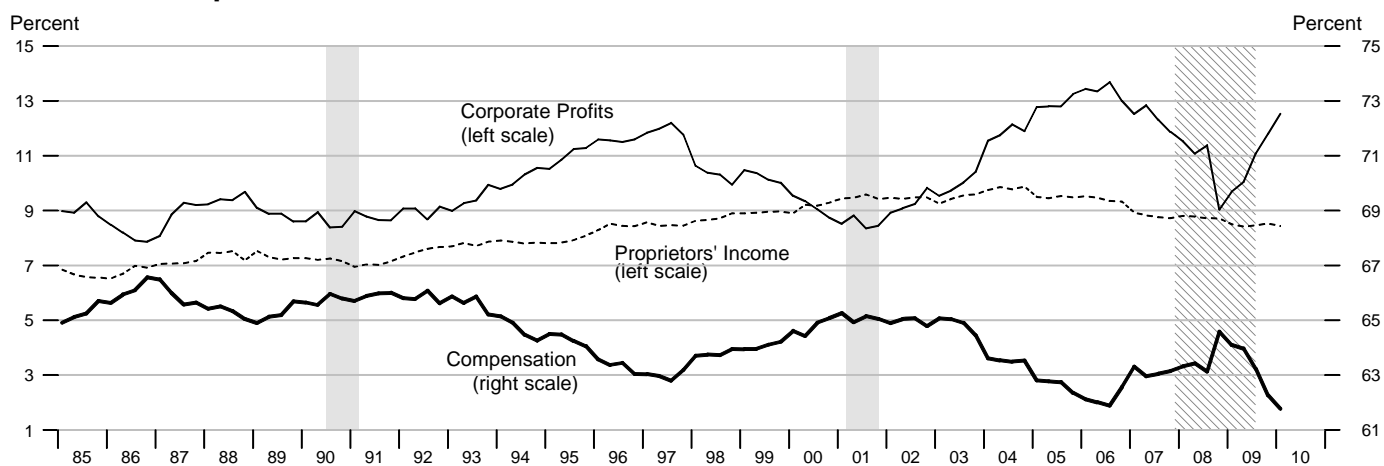


## Manufacturing Output per Hour

Compounded annual rates of change

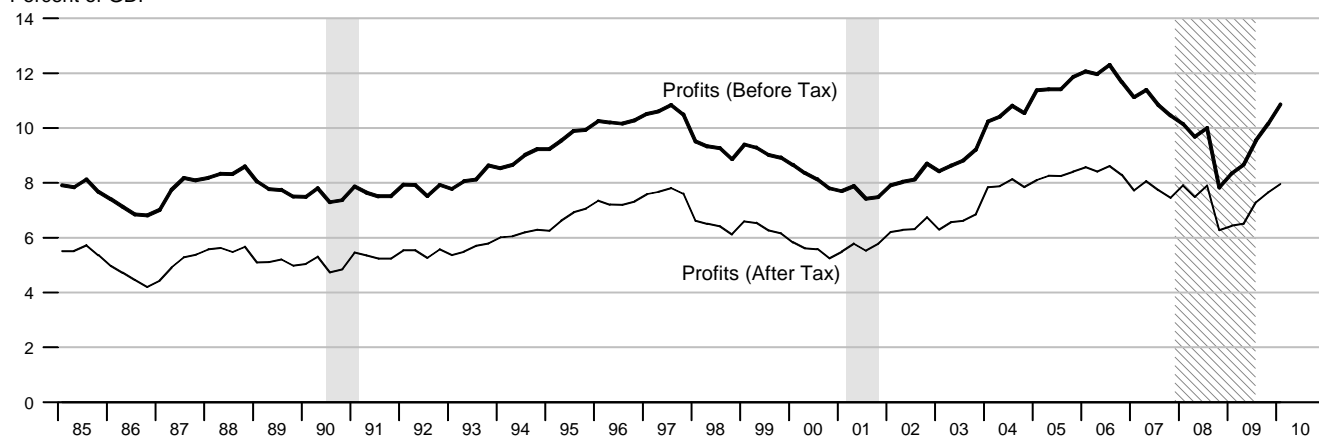


## Selected Component Shares of National Income



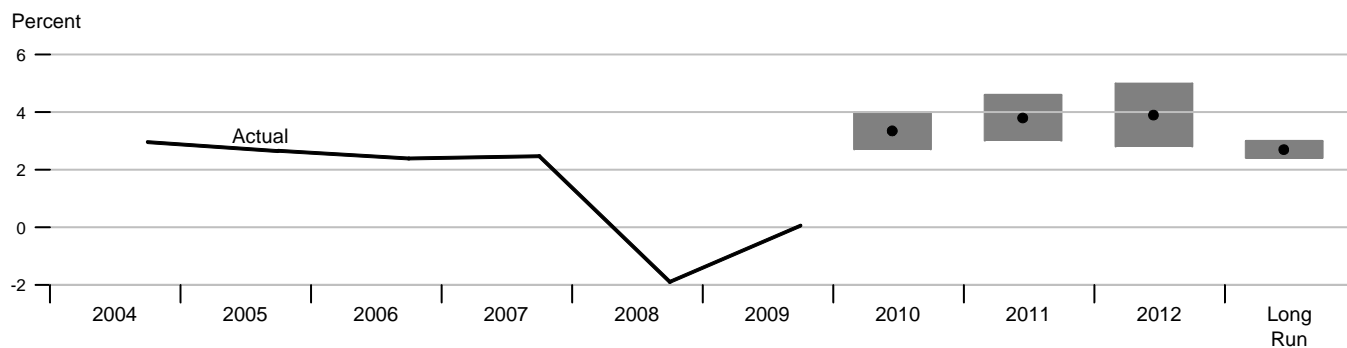
## Corporate Profits

Percent of GDP

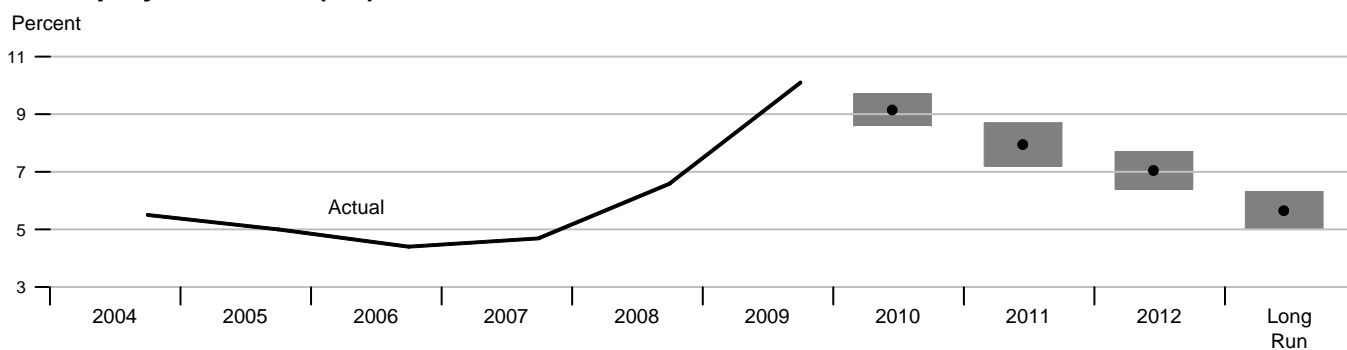


## April 2010 FOMC Projections

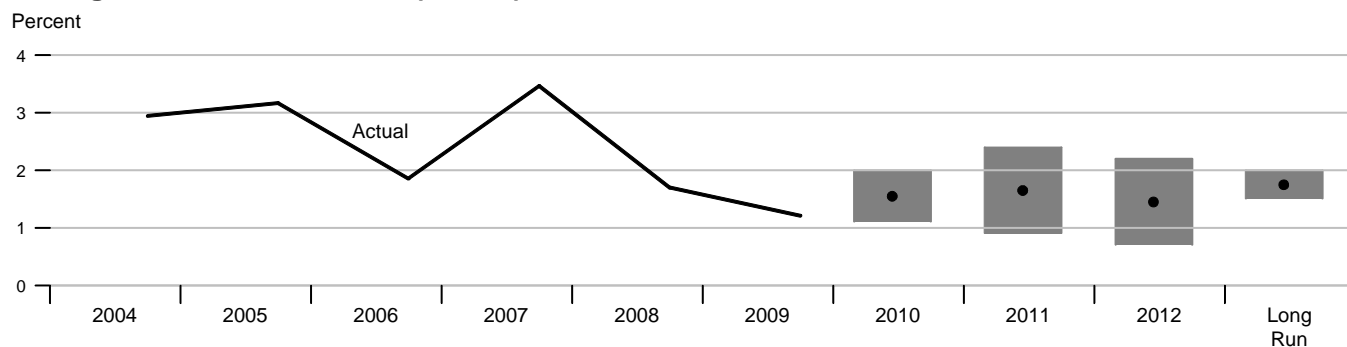
## Change in Real GDP (Q4/Q4)



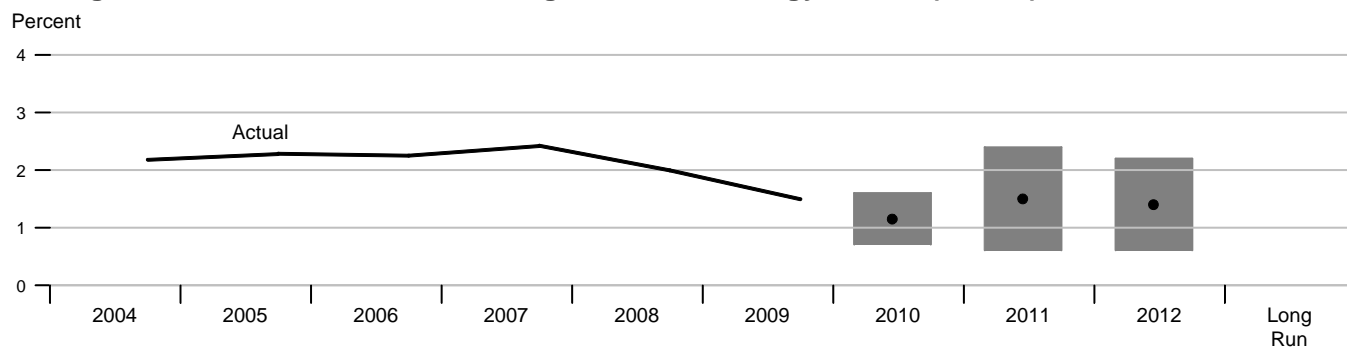
## Unemployment Rate (Q4)



## Change in PCE Price Index (Q4/Q4)

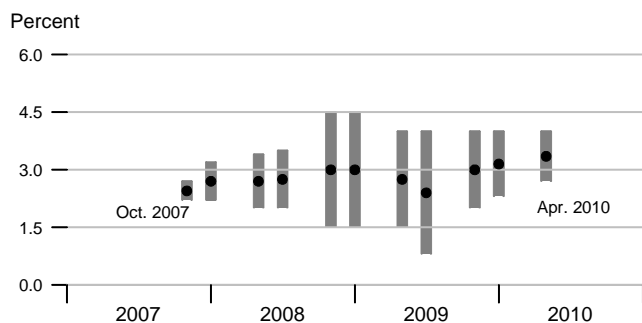


## Change in PCE Price Index Excluding Food and Energy Prices (Q4/Q4)

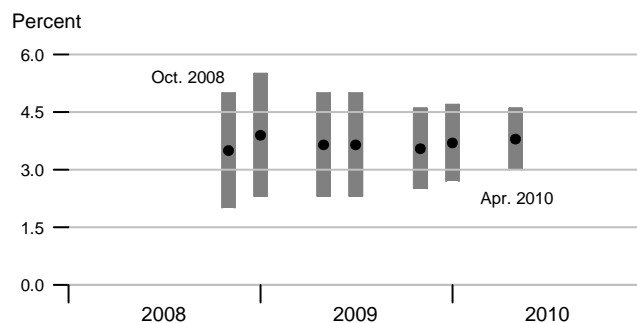


## FOMC Quarterly Projections for 2010 and 2011: A Timeline

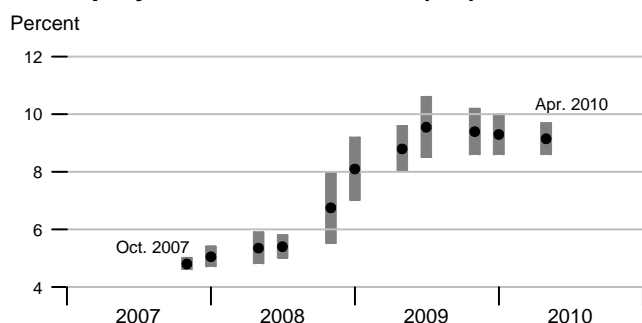
### Change in Real GDP for 2010



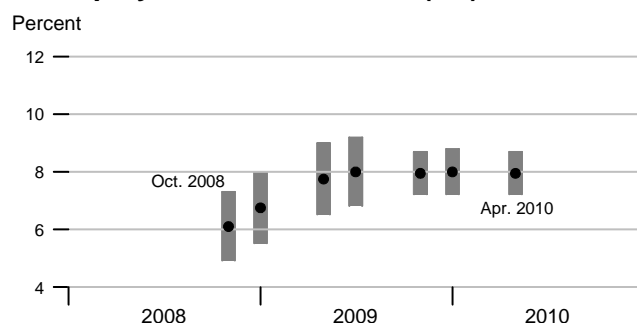
### Change in Real GDP for 2011



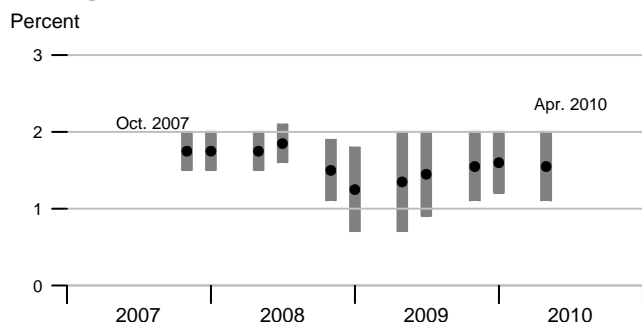
### Unemployment Rate for 2010 (Q4)



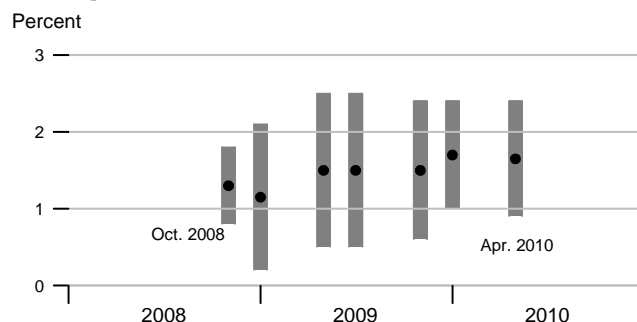
### Unemployment Rate for 2011 (Q4)



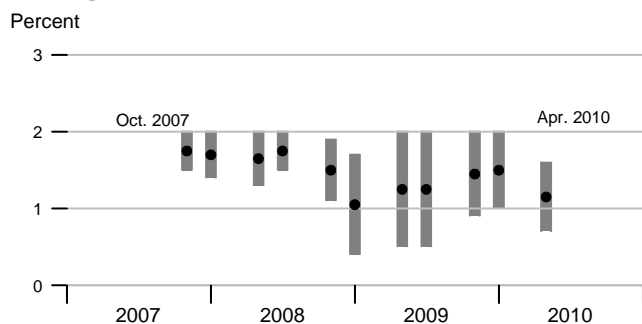
### Change in PCE Price Index for 2010



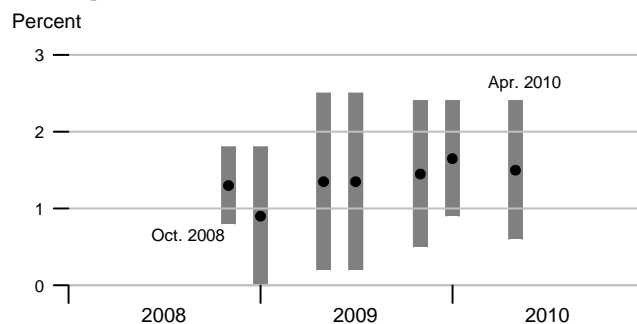
### Change in PCE Price Index for 2011



### Change in PCE Core Price Index for 2010



### Change in PCE Core Price Index for 2011



	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories		
	Billions of \$	Percent change		Billions of 2005 \$	Percent change		Billions of 2005 \$	Percent change		Billions of 2005 \$		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago	
2006	13398.9		6.0	12975.526		2.7	12917.090		2.6		59.423	
2007	14077.6		5.1	13253.150		2.1	13234.305		2.5		19.469	
2008	14441.4		2.6	13312.391		0.4	13341.229		0.8		-25.889	
2009	14256.3		-1.3	12990.361		-2.4	13111.298		-1.7		-108.238	
2007 1	13795.6	5.5	4.6	13097.844	1.2	1.4	13085.696	1.8	1.8	14.463	46.586	
2	13997.2	6.0	4.9	13201.688	3.2	1.9	13178.792	2.9	2.2	23.297	34.274	
3	14179.9	5.3	5.4	13319.435	3.6	2.7	13289.651	3.4	3.0	29.797	24.846	
4	14337.9	4.5	5.3	13390.861	2.1	2.5	13380.673	2.8	2.7	10.321	19.470	
2008 1	14373.9	1.0	4.2	13361.461	-0.7	2.0	13363.401	-0.5	2.1	0.619	16.009	
2	14497.8	3.5	3.6	13416.277	1.5	1.6	13453.704	2.7	2.1	-37.091	0.912	
3	14546.7	1.4	2.6	13329.706	-2.7	0.1	13354.764	-2.9	0.5	-29.706	-13.964	
4	14347.3	-5.4	0.1	13144.001	-5.4	-1.8	13194.065	-4.7	-1.4	-37.380	-25.890	
2009 1	14178.0	-4.6	-1.4	12928.897	-6.4	-3.2	13056.354	-4.1	-2.3	-113.893	-54.518	
2	14151.2	-0.8	-2.4	12905.044	-0.7	-3.8	13078.373	0.7	-2.8	-160.215	-85.299	
3	14242.1	2.6	-2.1	12975.352	2.2	-2.7	13127.779	1.5	-1.7	-139.169	-112.664	
4	14453.8	6.1	0.7	13151.531	5.6	0.1	13182.456	1.7	-0.1	-19.673	-108.238	
2010 1	14592.4	3.9	2.9	13241.945	2.7	2.4	13210.024	0.8	1.2	41.223	-69.459	
	Consumption			Durables Consumption			Private Fixed Investment			Nonresidential Fixed Investment		
	Billions of 2005 \$	Percent change		Billions of 2005 \$	Percent change		Billions of 2005 \$	Percent change		Billions of 2005 \$	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
2006	9073.504		2.9	1150.420		4.1	2171.271		2.3	1453.948		7.9
2007	9313.983		2.7	1199.929		4.3	2126.275		-2.1	1544.269		6.2
2008	9290.861		-0.2	1146.314		-4.5	2018.396		-5.1	1569.664		1.6
2009	9235.607		-0.6	1100.980		-4.0	1648.650		-18.3	1291.613		-17.7
2007 1	9264.709	3.7	3.1	1183.812	5.5	3.6	2118.908	-2.6	-3.7	1489.392	4.2	4.5
2	9291.089	1.1	2.8	1189.999	2.1	4.4	2137.659	3.6	-2.4	1530.080	11.4	5.5
3	9335.226	1.9	2.7	1205.071	5.2	4.6	2135.530	-0.4	-1.2	1565.720	9.6	6.8
4	9363.318	1.2	2.0	1221.161	5.4	4.6	2113.071	-4.1	-0.9	1591.342	6.7	7.9
2008 1	9349.546	-0.6	0.9	1193.037	-8.9	0.8	2079.364	-6.2	-1.9	1599.156	2.0	7.4
2	9351.144	0.1	0.6	1175.505	-5.7	-1.2	2065.063	-2.7	-3.4	1604.823	1.4	4.9
3	9267.970	-3.5	-0.7	1139.309	-11.8	-5.5	2020.728	-8.3	-5.4	1579.695	-6.1	0.9
4	9195.548	-3.1	-1.8	1076.476	-20.3	-11.8	1909.645	-20.2	-9.6	1496.586	-19.4	-6.0
2009 1	9209.539	0.6	-1.5	1086.916	3.9	-8.9	1687.822	-39.0	-18.8	1321.649	-39.2	-17.4
2	9189.377	-0.9	-1.7	1071.462	-5.6	-8.9	1632.238	-12.5	-21.0	1288.793	-9.6	-19.7
3	9252.919	2.8	-0.2	1122.446	20.4	-1.5	1626.967	-1.3	-19.5	1269.379	-5.9	-19.6
4	9289.757	1.6	1.0	1123.446	0.4	4.4	1646.890	5.0	-13.8	1285.930	5.3	-14.1
2010 1	9369.023	3.5	1.7	1156.253	12.2	6.4	1644.729	-0.5	-2.6	1293.032	2.2	-2.2



	GDP Chain Price Index			Employment Cost Index			ECI: Wages			ECI: Benefits		
	Index	Percent change		Index	Percent change		Index	Percent change		Index	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
2006	103.263		3.3	102.1		2.9	102.0		2.9	102.1		2.9
2007	106.221		2.9	105.2		3.1	105.5		3.4	104.5		2.4
2008	108.481		2.1	108.2		2.9	108.7		3.0	107.2		2.6
2009	109.745		1.2	109.8		1.5	110.4		1.5	108.5		1.2
2007 1	105.327	4.2	3.2	103.9	2.3	3.1	104.3	3.9	3.6	103.1	-0.8	2.3
2	106.026	2.7	3.0	104.8	3.5	3.1	105.1	3.1	3.4	104.2	4.3	2.6
3	106.460	1.6	2.6	105.6	3.1	3.0	105.9	3.1	3.3	105.0	3.1	2.4
4	107.072	2.3	2.7	106.5	3.5	3.1	106.7	3.1	3.3	105.8	3.1	2.4
2008 1	107.577	1.9	2.1	107.2	2.7	3.2	107.6	3.4	3.2	106.5	2.7	3.3
2	108.061	1.8	1.9	108.0	3.0	3.1	108.4	3.0	3.1	107.0	1.9	2.7
3	109.130	4.0	2.5	108.6	2.2	2.8	109.1	2.6	3.0	107.5	1.9	2.4
4	109.155	0.1	1.9	109.1	1.9	2.4	109.6	1.8	2.7	107.9	1.5	2.0
2009 1	109.661	1.9	1.9	109.3	0.7	2.0	109.8	0.7	2.0	108.1	0.7	1.5
2	109.656	-0.0	1.5	109.6	1.1	1.5	110.1	1.1	1.6	108.3	0.7	1.2
3	109.763	0.4	0.6	110.0	1.5	1.3	110.5	1.5	1.3	108.6	1.1	1.0
4	109.902	0.5	0.7	110.4	1.5	1.2	111.0	1.8	1.3	108.9	1.1	0.9
2010 1	110.198	1.1	0.5	111.1	2.6	1.6	111.4	1.4	1.5	110.4	5.6	2.1
	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
	Billions of 2005 \$	Percent change		Billions of 2005 \$	Percent change		Index	Percent change		Index	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
2006	1422.015		9.0	2151.201		6.1	137.549		1.0	169.027		3.8
2007	1546.122		8.7	2193.832		2.0	140.071		1.8	176.052		4.2
2008	1629.257		5.4	2123.530		-3.2	142.933		2.0	181.418		3.0
2009	1472.220		-9.6	1827.952		-13.9	148.272		3.7	184.687		1.8
2007 1	1485.356	3.5	7.0	2191.065	4.3	3.3	138.307	0.9	0.6	174.315	4.3	4.3
2	1504.106	5.1	6.5	2188.323	-0.5	2.0	139.046	2.2	1.0	174.904	1.4	4.2
3	1569.136	18.4	11.0	2208.357	3.7	1.7	140.972	5.7	2.9	176.201	3.0	4.5
4	1623.147	14.5	10.2	2187.703	-3.7	0.9	141.971	2.9	2.9	178.792	6.0	3.6
2008 1	1622.602	-0.1	9.2	2173.474	-2.6	-0.8	141.782	-0.5	2.5	179.273	1.1	2.8
2	1669.592	12.1	11.0	2145.262	-5.1	-2.0	142.821	3.0	2.7	179.746	1.1	2.8
3	1654.346	-3.6	5.4	2132.953	-2.3	-3.4	143.200	1.1	1.6	182.393	6.0	3.5
4	1567.217	-19.5	-3.4	2037.386	-16.8	-6.9	143.994	2.2	1.4	184.401	4.5	3.1
2009 1	1433.837	-29.9	-11.6	1819.698	-36.4	-16.3	144.333	0.9	1.8	182.457	-4.2	1.8
2	1418.744	-4.1	-15.0	1748.538	-14.7	-18.5	146.994	7.6	2.9	185.862	7.7	3.4
3	1478.085	17.8	-10.7	1834.893	21.3	-14.0	149.796	7.8	4.6	185.696	-0.4	1.8
4	1555.994	22.8	-0.7	1903.348	15.8	-6.6	152.104	6.3	5.6	184.790	-1.9	0.2
2010 1	1598.051	11.3	11.5	1970.364	14.8	8.3	153.169	2.8	6.1	185.465	1.5	1.6

		Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
		Thousands		Percent change		Thousands		Percent change		Index		Percent change	
				Annual rate	Year ago			Annual rate	Year ago			Monthly rate	Annual rate
		Thousands	Change	Annual rate	Year ago	Thousands	Change	Annual rate	Year ago	Index	Monthly rate	Annual rate	Year ago
2005		141710	2470		1.8	133694	2275		1.7	102.8			2.6
2006		144414	2704		1.9	136086	2392		1.8	105.8			3.0
2007		146042	1629		1.1	137588	1503		1.1	107.3			1.4
2008		145363	-680		-0.5	136777	-812		-0.6	105.9			-1.3
2009		139881	-5482		-3.8	130911	-5866		-4.3	98.8			-6.7
2008	1	146253	73	0.2	0.1	137897	35	0.1	0.5	107.4	-0.1	-0.2	0.6
	2	146032	-221	-0.6	0.1	137491	-406	-1.2	-0.1	107.0	-0.4	-1.7	-0.5
	3	145241	-791	-2.2	-0.5	136700	-791	-2.3	-0.7	105.7	-1.2	-4.5	-1.5
	4	143924	-1317	-3.6	-1.5	135019	-1680	-4.8	-2.1	103.5	-2.1	-8.3	-3.8
2009	1	141587	-2337	-6.3	-3.2	132814	-2205	-6.4	-3.7	100.8	-2.6	-9.9	-6.2
	2	140459	-1128	-3.1	-3.8	131112	-1702	-5.0	-4.6	98.7	-2.1	-8.0	-7.7
	3	139339	-1120	-3.2	-4.1	130078	-1035	-3.1	-4.8	98.0	-0.7	-2.9	-7.3
	4	138138	-1201	-3.4	-4.0	129639	-438	-1.3	-4.0	97.7	-0.3	-1.4	-5.6
2010	1	138626	488	1.4	-2.1	129697	58	0.2	-2.3	98.2	0.6	2.3	-2.5
	2	139331	705	2.0	-0.8	130409	712	2.2	-0.5	99.0	0.8	3.3	0.3
2008	Jun	145768	-255	-2.1	-0.2	137285	-193	-1.7	-0.3	106.6	-0.3	-3.3	-0.9
	Jul	145515	-253	-2.1	-0.3	137075	-210	-1.8	-0.4	106.1	-0.5	-5.5	-1.2
	Aug	145187	-328	-2.7	-0.3	136741	-334	-2.9	-0.6	106.1	0.0	0.0	-1.1
	Sep	145021	-166	-1.4	-0.8	136283	-458	-3.9	-1.0	105.0	-1.0	-11.8	-2.1
	Oct	144677	-344	-2.8	-0.8	135729	-554	-4.8	-1.5	104.5	-0.5	-5.6	-2.7
	Nov	143907	-770	-6.2	-1.8	135001	-728	-6.2	-2.1	103.4	-1.1	-11.9	-3.8
	Dec	143188	-719	-5.8	-2.0	134328	-673	-5.8	-2.6	102.5	-0.9	-10.0	-4.7
2009	Jan	142221	-967	-7.8	-2.9	133549	-779	-6.7	-3.2	101.8	-0.7	-7.9	-5.2
	Feb	141687	-534	-4.4	-3.1	132823	-726	-6.3	-3.7	100.8	-1.0	-11.2	-6.1
	Mar	140854	-833	-6.8	-3.6	132070	-753	-6.6	-4.2	99.8	-1.0	-11.3	-7.2
	Apr	140902	48	0.4	-3.7	131542	-528	-4.7	-4.5	99.2	-0.6	-7.0	-7.6
	May	140438	-464	-3.9	-3.8	131155	-387	-3.5	-4.6	98.9	-0.3	-3.6	-7.5
	Jun	140038	-400	-3.4	-3.9	130640	-515	-4.6	-4.8	98.1	-0.8	-9.3	-8.0
	Jul	139817	-221	-1.9	-3.9	130294	-346	-3.1	-4.9	98.2	0.1	1.2	-7.4
	Aug	139433	-384	-3.2	-4.0	130082	-212	-1.9	-4.9	98.0	-0.2	-2.4	-7.6
	Sep	138768	-665	-5.6	-4.3	129857	-225	-2.1	-4.7	97.8	-0.2	-2.4	-6.9
	Oct	138242	-526	-4.5	-4.4	129633	-224	-2.1	-4.5	97.2	-0.6	-7.1	-7.0
	Nov	138381	139	1.2	-3.8	129697	64	0.6	-3.9	97.9	0.7	9.0	-5.3
	Dec	137792	-589	-5.0	-3.8	129588	-109	-1.0	-3.5	97.9	0.0	0.0	-4.5
2010	Jan	138333	541	4.8	-2.7	129602	14	0.1	-3.0	98.2	0.3	3.7	-3.5
	Feb	138641	308	2.7	-2.1	129641	39	0.4	-2.4	98.0	-0.2	-2.4	-2.8
	Mar	138905	264	2.3	-1.4	129849	208	1.9	-1.7	98.5	0.5	6.3	-1.3
	Apr	139455	550	4.9	-1.0	130162	313	2.9	-1.0	99.0	0.5	6.3	-0.2
	May	139420	-35	-0.3	-0.7	130595	433	4.1	-0.4	99.0	0.0	0.0	0.1
	Jun	139119	-301	-2.6	-0.7	130470	-125	-1.1	-0.1	99.1	0.1	1.2	1.0

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields	
			Billions of dollars	Percent change		Year ago	Index	Percent change		Year ago	(Percent)	
				Monthly/ quarterly	Annual rate			Monthly/ quarterly	Annual rate		3-mo	10-yr
2005		5.1	4092.650			6.5	95.2558			3.2	3.15	4.29
2006		4.6	4312.711			5.4	97.3910			2.2	4.73	4.79
2007		4.6	4454.282			3.3	100.0000			2.7	4.35	4.63
2008		5.8	4409.379			-1.0	96.6917			-3.3	1.37	3.67
2009		9.3	4131.630			-6.3	87.7159			-9.3	0.15	3.26
2008	1	5.0	1125.390	-0.7	-2.6	2.3	99.8781	-0.4	-1.6	0.8	2.04	3.66
	2	5.3	1131.023	0.5	2.0	2.1	98.3712	-1.5	-5.9	-1.8	1.63	3.89
	3	6.0	1116.164	-1.3	-5.2	0.2	95.9030	-2.5	-9.7	-4.5	1.49	3.86
	4	7.0	1036.802	-7.1	-25.5	-8.5	92.6147	-3.4	-13.0	-7.6	0.30	3.25
2009	1	8.2	1019.214	-1.7	-6.6	-9.4	88.2492	-4.7	-17.6	-11.6	0.21	2.74
	2	9.3	1018.867	-0.0	-0.1	-9.9	85.8926	-2.7	-10.3	-12.7	0.17	3.31
	3	9.6	1037.267	1.8	7.4	-7.1	87.6144	2.0	8.3	-8.6	0.16	3.52
	4	10.0	1056.282	1.8	7.5	1.9	89.1076	1.7	7.0	-3.8	0.06	3.46
2010	1	9.7	1077.305	2.0	8.2	5.7	90.5962	1.7	6.9	2.7	0.11	3.72
	2	9.7									0.15	3.49
2008	Jun	5.5	377.687	0.1	1.3	2.6	97.9880	-0.4	-4.2	-2.1	1.86	4.10
	Jul	5.8	376.056	-0.4	-5.1	1.6	97.9537	-0.0	-0.4	-2.4	1.63	4.01
	Aug	6.1	373.158	-0.8	-8.9	0.8	96.7919	-1.2	-13.3	-3.5	1.72	3.89
	Sep	6.2	366.950	-1.7	-18.2	-1.8	92.9633	-4.0	-38.4	-7.7	1.13	3.69
	Oct	6.6	355.484	-3.1	-31.7	-5.3	93.8781	1.0	12.5	-6.1	0.67	3.81
	Nov	6.9	345.704	-2.8	-28.4	-9.0	92.9318	-1.0	-11.4	-7.4	0.19	3.53
	Dec	7.4	335.614	-2.9	-29.9	-11.1	91.0342	-2.0	-21.9	-9.4	0.03	2.42
2009	Jan	7.7	341.617	1.8	23.7	-9.5	89.1316	-2.1	-22.4	-11.0	0.13	2.52
	Feb	8.2	341.390	-0.1	-0.8	-8.5	88.4567	-0.8	-8.7	-11.5	0.30	2.87
	Mar	8.6	336.207	-1.5	-16.8	-10.3	87.1592	-1.5	-16.2	-12.5	0.21	2.82
	Apr	8.9	336.671	0.1	1.7	-10.5	86.4726	-0.8	-9.1	-12.5	0.16	2.93
	May	9.4	339.088	0.7	9.0	-10.1	85.6975	-0.9	-10.2	-12.9	0.18	3.29
	Jun	9.5	343.108	1.2	15.2	-9.2	85.5076	-0.2	-2.6	-12.7	0.18	3.72
	Jul	9.4	343.490	0.1	1.3	-8.7	86.6896	1.4	17.9	-11.5	0.18	3.56
	Aug	9.7	350.727	2.1	28.4	-6.0	87.7569	1.2	15.8	-9.3	0.17	3.59
	Sep	9.8	343.050	-2.2	-23.3	-6.5	88.3967	0.7	9.1	-4.9	0.12	3.40
	Oct	10.1	348.321	1.5	20.1	-2.0	88.6350	0.3	3.3	-5.6	0.07	3.39
	Nov	10.0	353.863	1.6	20.9	2.4	89.1049	0.5	6.6	-4.1	0.05	3.40
	Dec	10.0	354.098	0.1	0.8	5.5	89.5830	0.5	6.6	-1.6	0.05	3.59
2010	Jan	9.7	355.197	0.3	3.8	4.0	90.4944	1.0	12.9	1.5	0.06	3.73
	Feb	9.7	357.272	0.6	7.2	4.7	90.5031	0.0	0.1	2.3	0.11	3.69
	Mar	9.7	364.836	2.1	28.6	8.5	90.7912	0.3	3.9	4.2	0.15	3.73
	Apr	9.9	366.915	0.6	7.1	9.0	91.3507	0.6	7.7	5.6	0.16	3.85
	May	9.7	362.517	-1.2	-13.5	6.9	92.5537	1.3	17.0	8.0	0.16	3.42
	Jun	9.5									0.12	3.20

		Consumer Price Index					Consumer Price Index less Food and Energy					Producer Price Index Finished Goods			
		Percent change					Percent change					Percent change			
		Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago
2005		195.267			3.4		200.867			2.1		155.8			4.9
2006		201.550			3.2		205.942			2.5		160.3			2.9
2007		207.335			2.9		210.729			2.3		166.6			3.9
2008		215.247			3.8		215.568			2.3		177.2			6.4
2009		214.549			-0.3		219.236			1.7		172.7			-2.5
2008	1	212.824	1.1	4.7	4.2	4.7	213.951	0.6	2.5	2.4	2.5	174.3	2.2	9.0	7.2
	2	215.557	1.3	5.2	4.3	4.9	214.985	0.5	1.9	2.3	2.2	178.9	2.6	11.0	7.7
	3	218.909	1.6	6.4	5.3	5.4	216.501	0.7	2.9	2.5	2.4	182.5	2.0	8.3	9.4
	4	213.698	-2.4	-9.2	1.6	1.6	216.834	0.2	0.6	2.0	2.0	173.0	-5.2	-19.3	1.4
2009	1	212.493	-0.6	-2.2	-0.2	-2.2	217.670	0.4	1.6	1.7	1.6	170.6	-1.4	-5.5	-2.2
	2	213.473	0.5	1.9	-1.0	-0.2	218.934	0.6	2.3	1.8	1.9	171.6	0.6	2.5	-4.1
	3	215.417	0.9	3.7	-1.6	1.1	219.752	0.4	1.5	1.5	1.8	173.0	0.8	3.2	-5.2
	4	216.813	0.6	2.6	1.5	1.5	220.590	0.4	1.5	1.7	1.7	175.6	1.5	6.2	1.5
2010	1	217.636	0.4	1.5	2.4	1.5	220.569	-0.0	-0.0	1.3	-0.0	179.4	2.1	8.9	5.2
2008	May	215.287	0.6	6.8	4.1	4.4	214.948	0.2	2.5	2.3	2.1	178.8	1.3	16.8	7.4
	Jun	217.279	0.9	11.7	4.9	5.6	215.506	0.3	3.2	2.4	2.2	181.5	1.5	19.7	9.1
	Jul	219.102	0.8	10.5	5.5	6.3	216.173	0.3	3.8	2.5	2.5	183.7	1.2	15.6	9.7
	Aug	218.779	-0.1	-1.8	5.3	5.3	216.548	0.2	2.1	2.5	2.4	181.9	-1.0	-11.1	9.6
	Sep	218.846	0.0	0.4	5.0	4.7	216.783	0.1	1.3	2.5	2.3	182.0	0.1	0.7	8.9
	Oct	216.832	-0.9	-10.5	3.7	3.1	216.768	-0.0	-0.1	2.2	2.0	177.3	-2.6	-26.9	5.3
	Nov	212.923	-1.8	-19.6	1.0	0.8	216.873	0.0	0.6	2.0	1.9	172.3	-2.8	-29.1	0.2
	Dec	211.339	-0.7	-8.6	-0.0	-0.0	216.860	-0.0	-0.1	1.7	1.7	169.4	-1.7	-18.4	-1.2
2009	Jan	211.959	0.3	3.6	-0.1	3.6	217.249	0.2	2.2	1.7	2.2	171.2	1.1	13.5	-1.2
	Feb	212.877	0.4	5.3	0.1	4.4	217.674	0.2	2.4	1.8	2.3	170.9	-0.2	-2.1	-1.7
	Mar	212.643	-0.1	-1.3	-0.4	2.5	218.086	0.2	2.3	1.8	2.3	169.6	-0.8	-8.8	-3.5
	Apr	212.810	0.1	0.9	-0.6	2.1	218.617	0.2	3.0	1.9	2.5	170.6	0.6	7.3	-3.3
	May	213.050	0.1	1.4	-1.0	2.0	218.920	0.1	1.7	1.8	2.3	170.6	0.0	0.0	-4.6
	Jun	214.558	0.7	8.8	-1.3	3.1	219.265	0.2	1.9	1.7	2.2	173.7	1.8	24.1	-4.3
	Jul	214.774	0.1	1.2	-2.0	2.8	219.533	0.1	1.5	1.6	2.1	171.6	-1.2	-13.6	-6.6
	Aug	215.566	0.4	4.5	-1.5	3.0	219.687	0.1	0.8	1.4	2.0	174.1	1.5	19.0	-4.3
	Sep	215.911	0.2	1.9	-1.3	2.9	220.035	0.2	1.9	1.5	2.0	173.3	-0.5	-5.4	-4.8
	Oct	216.357	0.2	2.5	-0.2	2.9	220.459	0.2	2.3	1.7	2.0	173.6	0.2	2.1	-2.1
	Nov	216.859	0.2	2.8	1.8	2.9	220.546	0.0	0.5	1.7	1.9	176.2	1.5	19.5	2.3
	Dec	217.224	0.2	2.0	2.8	2.8	220.764	0.1	1.2	1.8	1.8	177.1	0.5	6.3	4.5
2010	Jan	217.587	0.2	2.0	2.7	2.0	220.463	-0.1	-1.6	1.5	-1.6	179.4	1.3	16.7	4.8
	Feb	217.591	0.0	0.0	2.2	1.0	220.579	0.1	0.6	1.3	-0.5	178.8	-0.3	-3.9	4.6
	Mar	217.729	0.1	0.8	2.4	0.9	220.664	0.0	0.5	1.2	-0.2	180.0	0.7	8.4	6.1
	Apr	217.579	-0.1	-0.8	2.2	0.5	220.768	0.0	0.6	1.0	0.0	179.8	-0.1	-1.3	5.4
	May	217.224	-0.2	-1.9	2.0	0.0	221.037	0.1	1.5	1.0	0.3	179.3	-0.3	-3.3	5.1

## Notes

**Pages 4, 5: Final Sales** is gross domestic product (GDP) minus change in private inventories. **Advance, Second, and Third GDP Growth Rates** are released during the first, second, and third months of the following quarter. Changes result from incorporation of more complete information. Real GDP is measured in 2005 dollars. The **ISM** (formerly Purchasing Managers') **Index** is a weighted average of diffusion indexes for new orders, production, supplier deliveries, inventories, and employment. **Aggregate and Average Weekly Hours** are paid hours of production and nonsupervisory employees. The **Inventory-Sales Ratio** uses nominal (current-dollar) inventory and sales data.

**Page 6:** For information on how to calculate the **Contribution** of a component to the overall GDP growth rate, see the October 1999 issue of the Survey of Current Business, p. 16. The sign is changed for **Imports**.

**Page 7:** Ten-year **Treasury Yields** are adjusted to constant maturity; three-month yields are secondary market averages. All rates used in the yield curves are adjusted to constant maturity. **Standard and Poor's 500 Index with Reinvested Dividends** shows the total return: capital gains plus dividends.

**Pages 8, 9: Oil** (West Texas intermediate) and **Natural Gas** (Henry Hub) spot and futures **prices** are listed in the *Wall Street Journal*. Spot prices are monthly averages of daily prices; futures prices are usually taken from the last trading day of the month. **Consumer Price Index** is for all urban consumers. The **Consumption Chain Price Index** is the index associated with the personal consumption expenditures component of GDP. The **Employment Cost Index (ECI)** covers private nonfarm employers. **ECI Compensation** refers to a fixed sample of jobs, while **Compensation per Hour** covers all workers in the nonfarm business sector in a given quarter. In both cases, compensation is wages and salaries plus benefits.

**Pages 10, 11:** Effective with the January 2008 **Employment Situation**, the establishment survey data for employment, hours, and earnings have been converted from the 2002 NAICS system to the 2007 NAICS system. For more information see <http://www.bls.gov/ces/>. **Nonfarm Payroll Employment** is counted in a survey of about 400,000 establishments (Current Employment Statistics). It excludes self-employed individuals and workers in private households, but double-counts individuals with more than one job. The **Household Survey** (Current Population Survey) of about 60,000 households provides estimates of civilian employment, unemployment rate, labor force participation rate, and employment-population ratio. **Population** is civilian, noninstitutional, 16 years and over. The 90 percent confidence intervals for the unemployment rate ( $\pm 0.2$  percentage points) and change in household survey employment ( $\pm 430,000$ ) measure uncertainty due to sample size. Because the household survey was changed in January 1994, data prior to this date are not strictly comparable. The Bureau of Labor Statistics announced several revisions to the Household Survey on Feb. 7, 2003, with the release of the January 2003 data. For more information, see [www.bls.gov/cps/](http://www.bls.gov/cps/). The **Job Openings rate** is the number of job openings on the last business day of the month as a percent of total employment plus job openings.

**Page 13:** The **Michigan Consumer Sentiment Index** shows changes in a summary measure of consumers' answers to five questions about their current and expected financial situation, expectations about future economic conditions, and attitudes about making large purchases. The survey is based on a representative sample of U.S. households.

**Page 15:** **Gross Private Saving** is the sum of personal saving, undistributed corporate profits with IVA and CCAAdj (see notes for pp. 18-19), and private wage accruals less disbursements. **Gross Government Saving** is net government saving (surplus/deficit) plus consumption of fixed capital. **Balance on Current Account (NIPA)** is net capital transfer payments to the rest of the world plus net lending or net borrowing (international trade and income flows).

**Pages 16, 17:** **Government Consumption and Investment** is current expenditures on goods and services, including capital consumption (depreciation) and gross investment, as reported in the NIPAs. The **Unified Federal Budget Surplus/Deficit** differs from **NIPA Basis** in four main ways: (1) NIPA excludes transactions involving existing assets; (2) NIPA outlays exclude government

investment and include consumption of government capital, while unified budget outlays do the reverse; (3) NIPA accounts exclude Puerto Rico and U.S. territories; and (4) various timing issues are handled differently. **Outlays and Receipts** are from the NIPAs, except as noted. Since 1977, the federal **Fiscal Year** starts on October 1. Excluded agency debt was 0.6 percent of federal debt at the end of fiscal 1997. **Federal Debt Held by the Public** includes holdings of the Federal Reserve System and excludes holdings of the social security and other federal trust funds. Federal grants in aid to state and local governments appear in both state and local receipts and federal outlays.

**Pages 18, 19:** The **Trade Balance** (shown on a balance of payments basis) is the difference between exports and imports of goods (merchandise) and services. It is nearly identical in concept to the **Net Exports** component of GDP, but differs slightly in accounting details. The **Investment Income Balance** equals income received from U.S.-owned assets in other countries minus income paid on foreign-owned assets in the U.S. The investment income balance is nearly identical in concept to the difference between gross national product and gross domestic product, but differs in accounting details. The **Current Account Balance** is the trade balance plus the balance on investment income plus net unilateral transfers to the U.S. from other countries.

**Pages 20, 21:** **Output per Hour (Y/H)**, **Unit Labor Cost (C/Y)**, and **Compensation per Hour (C/H)** are indexes which approximately obey the following relationship:  $\%(Y/H) + \%(C/Y) = \%(C/H)$  with  $\%( )$  meaning percent changes. Unit labor cost is shown on page 9. **Real Compensation per Hour** uses the CPI to adjust for the effects of inflation. Nonfarm business accounted for about 77 percent of the value of GDP in 2000, while nonfinancial corporations accounted for about 54 percent. **Inventory Valuation Adjustments (IVA)** remove the effect of changes in the value of existing inventories from corporate profits and proprietors' income. (This change in value does not correspond to current production and therefore is not part of GDP). **Capital Consumption Adjustments (CCAAdj)** increase profits and proprietors' income by the difference between estimates of economic depreciation and depreciation allowed by the tax code. Components of national income not shown are rental income of persons and net interest.

**Pages 22, 23:** The economic projections of the **Federal Open Market Committee (FOMC)** are published four times a year. Except for the unemployment rate, the projections for the current and following years are on a Q4/Q4 horizon. The shaded area represents the range of the economic projections of the FOMC members, and the dot signifies the mid-point of the ranges. The projections of the changes in the total PCE price index and the core PCE price index (excluding food and energy prices) are presumed to converge over time.

## Sources

*Bureau of Economic Analysis (BEA), U.S. Dept. of Commerce*

National income and product accounts, international trade and investment data (except by country), auto and light truck sales.

*Census Bureau, U.S. Dept. of Commerce*

Inventory-sales ratios, retail sales, capital goods orders, housing starts, exports and imports by country.

*Bureau of Labor Statistics (BLS), U.S. Dept. of Labor*

All employment-related data, employment cost index, consumer and producer price indexes, unit labor cost, output per hour, compensation per hour, multifactor productivity.

*United States Department of Treasury*

Unified budget receipts, outlays, deficit, debt.

*Federal Reserve Board*

Index of industrial production, treasury yields, exchange rates, capacity utilization, household debt.

*The Survey Research Center, The University of Michigan*

Consumer sentiment index.

*Organization for Economic Cooperation and Development (OECD)*

GDP for major trading partners (not available on FRED).