

Should Food Be Excluded from Core CPI?

The consumer price index (CPI) measures the prices urban consumers pay for a representative basket of goods and services. The CPI is one of the most important measures of inflation. The prices of many products and services are directly linked to changes in the CPI. For instance, when the CPI increases, Social Security benefits and wages stated in labor contracts may rise as well.

Forecasting future inflation rates is important because of these links, but which measure to use as a predictor of future inflation is widely debated. Some argue for headline CPI, which includes all items in the representative basket, and others for core CPI, which excludes food and energy prices. Proponents of the latter argue that core CPI inflation is a better predictor of future headline CPI inflation than headline CPI inflation itself because food and energy prices are both volatile and therefore contain little predictive information.

I revisit the issue of whether food and energy should be removed when forecasting headline CPI. Instead of focusing on volatility, we use the signal-to-noise ratio (SNR) as a measure of the relevant predictive significance of each component of CPI for 12-month-ahead year-over-year headline CPI. Taking this approach implies a tradeoff between a component's (i) degree of volatility and (ii) degree of correlation with future headline CPI. The greater a component's SNR, the more useful the component should be in forecasting headline CPI.

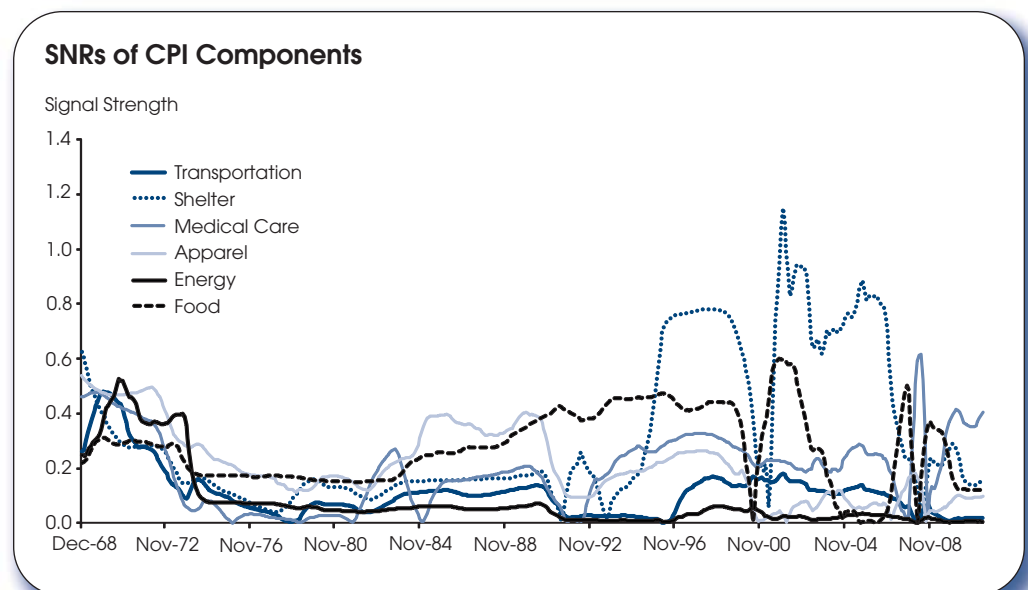
The chart shows estimates of the SNRs of some of the major components of headline CPI from December 1968 to May 2010 estimated over a 10-year rolling window. The solid black line shows the SNR of energy prices and the dashed black line the SNR of food prices. In the late 1960s, the SNRs of food prices

and energy prices were almost identical to those of other components. After the oil crisis of the mid-1970s, the SNR of energy prices dramatically declined and remained low across the entire sample. This low signal strength suggests energy prices will have little predictive content for future headline CPI inflation.

In contrast, the SNR of food prices was low throughout the early 1980s then trended upward before moderating in more recent years. Although this ratio initially had one of the two lowest values, it gradually surpassed the ratios of many other CPI components and in the late 1990s had the second-highest value of all components. Throughout the 2000s the SNR of food prices varied widely but often remained higher than the SNRs of many other components, including transportation and apparel.

The chart indicates that overall the energy component of headline CPI may not be useful for predicting future headline CPI inflation. It is not clear, however, whether food prices are a useful predictor and should be excluded or not.

—Michael W. McCracken



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

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Conventions used in this publication:

1. Shaded areas indicate recessions, as determined by the National Bureau of Economic Research.
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:

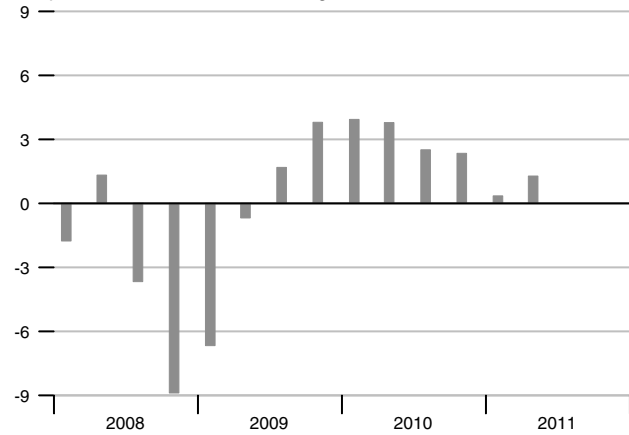
Editor, *National Economic Trends*
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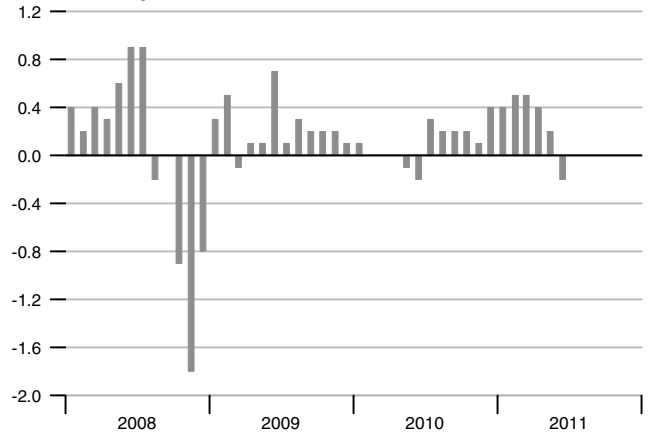
Real GDP Growth

Compounded annual rates of change



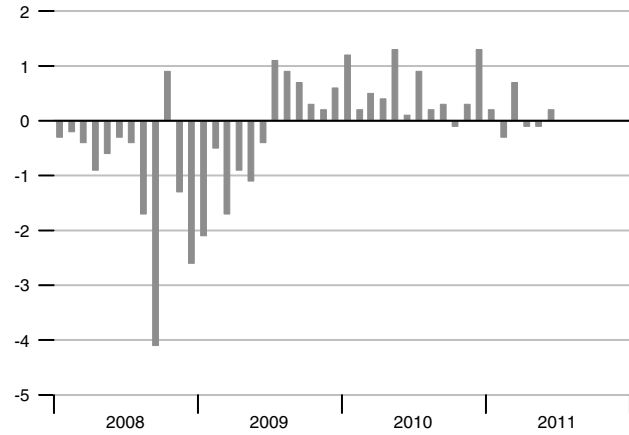
Consumer Price Index

Percent change



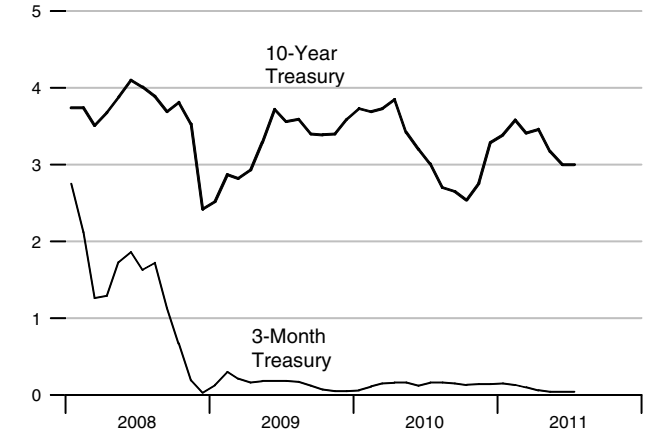
Industrial Production

Percent change



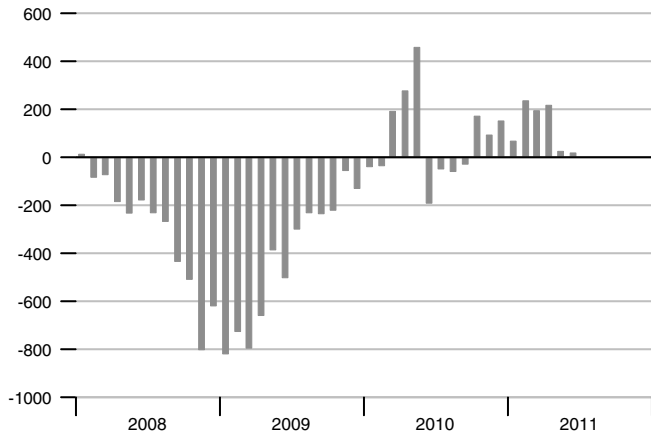
Interest Rates

Percent



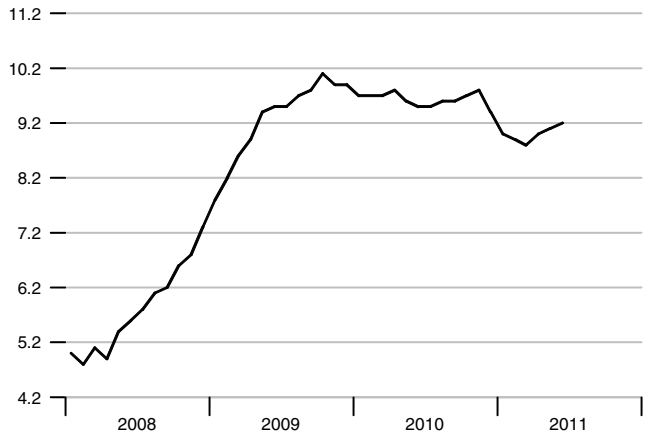
Change in Nonfarm Payrolls

Thousands



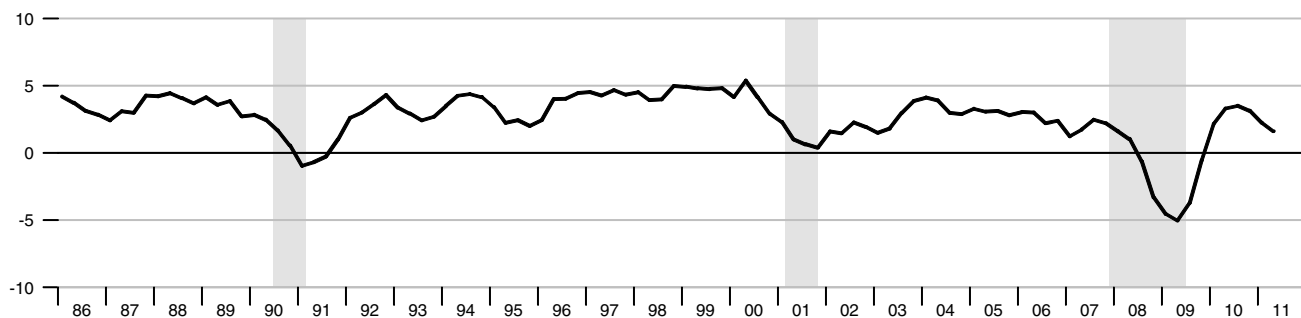
Unemployment Rate

Percent of labor force



Real Gross Domestic Product

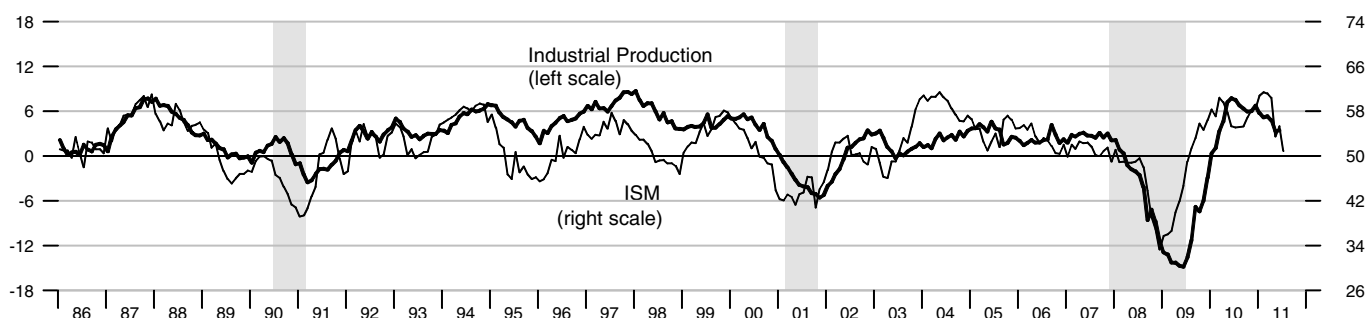
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

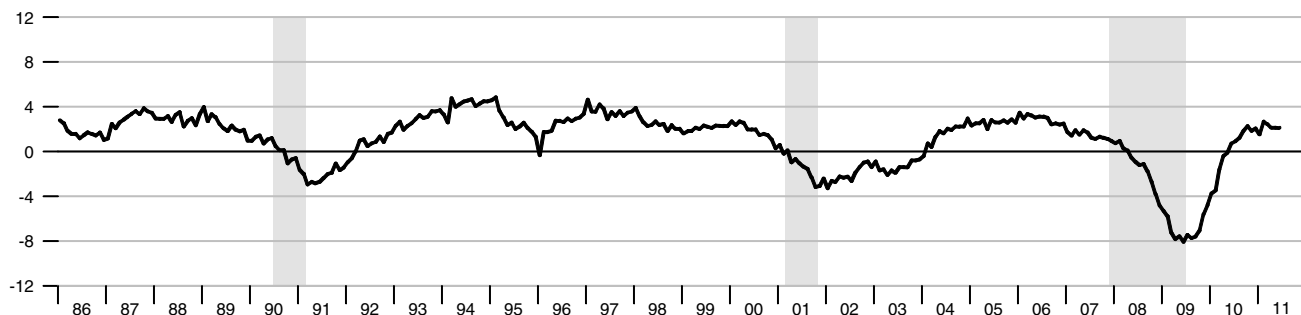
Percent change from year ago

Index



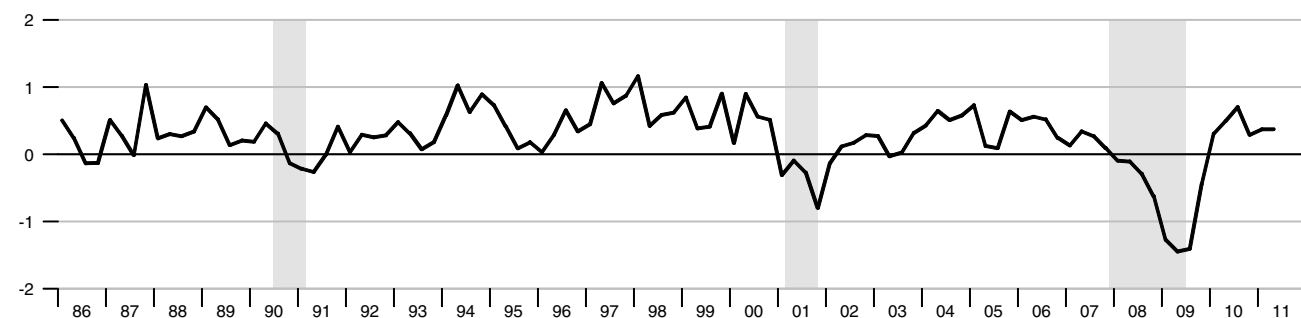
Aggregate Private Nonfarm Hours

Percent change from year ago



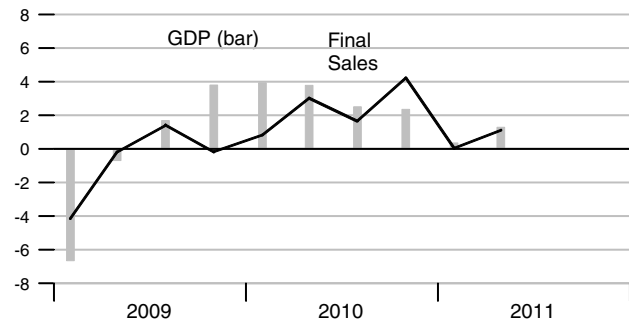
Real Change in Private Inventories

Percent of GDP



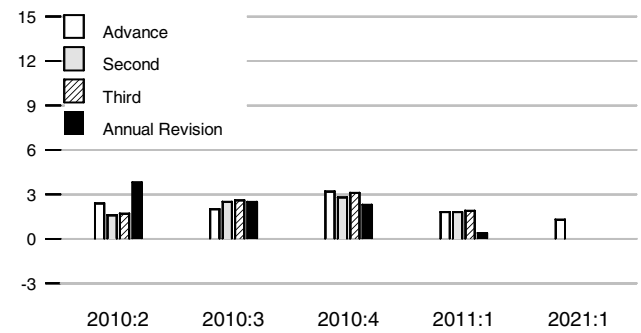
Real Final Sales and GDP

Compounded annual rates of change



Real GDP Revisions

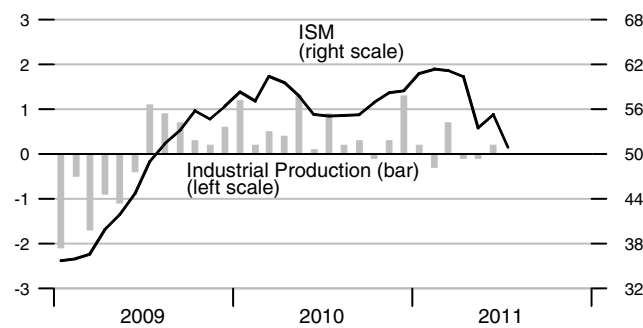
Compounded annual rates of change



Industrial Production and ISM Index

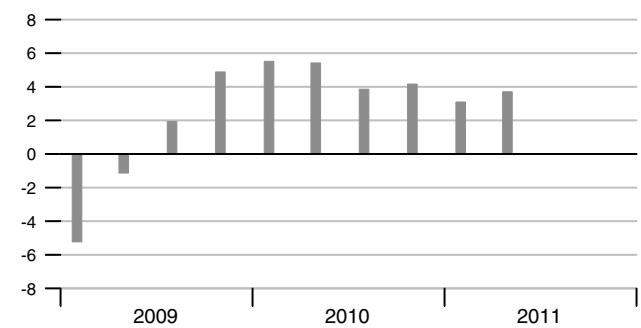
Percent change

Index



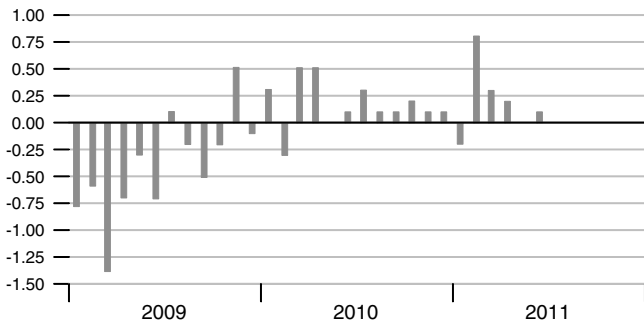
Nominal Gross Domestic Product

Compounded annual rates of change



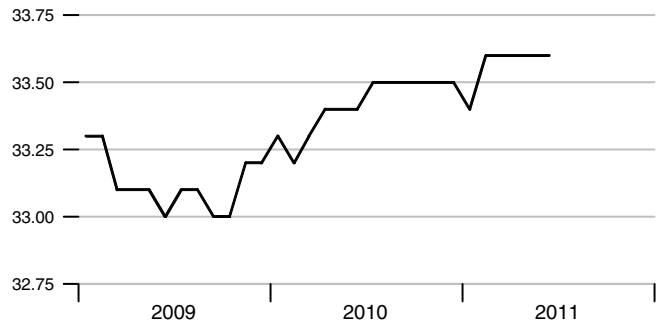
Aggregate Private Nonfarm Hours

Percent change



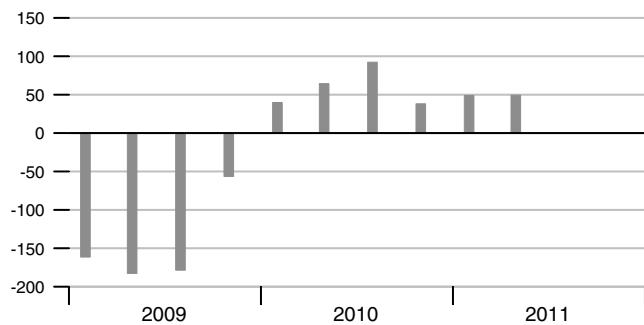
Average Weekly Private Nonfarm Hours

Hours



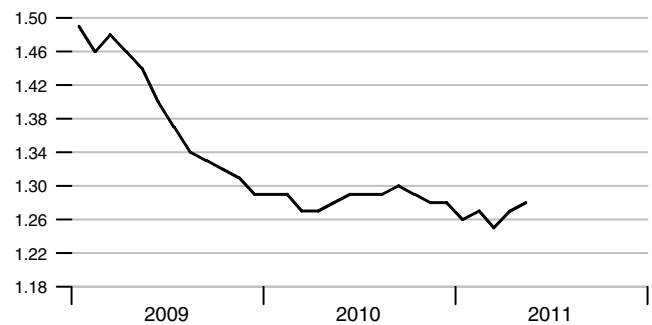
Real Change in Private Inventories

Billions of 2005 dollars



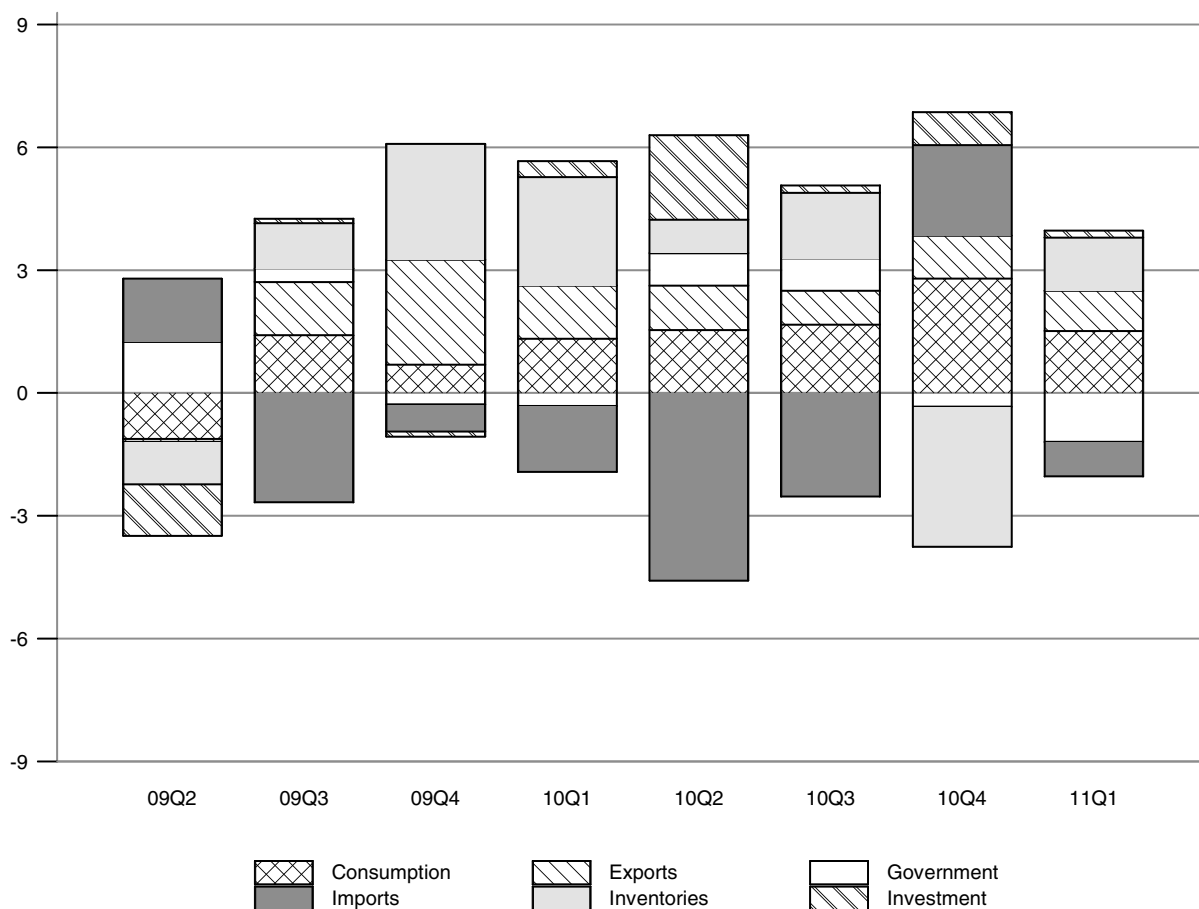
Inventory-Sales Ratio

Manufacturing and trade



Contribution of Components to Real GDP Growth

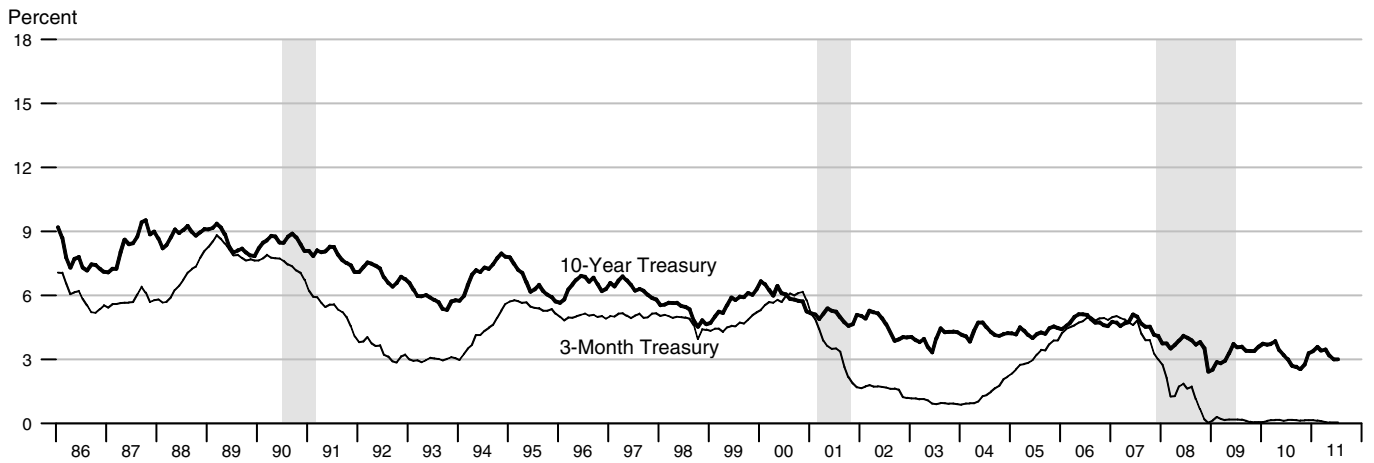
Percentage points at compounded annual rates



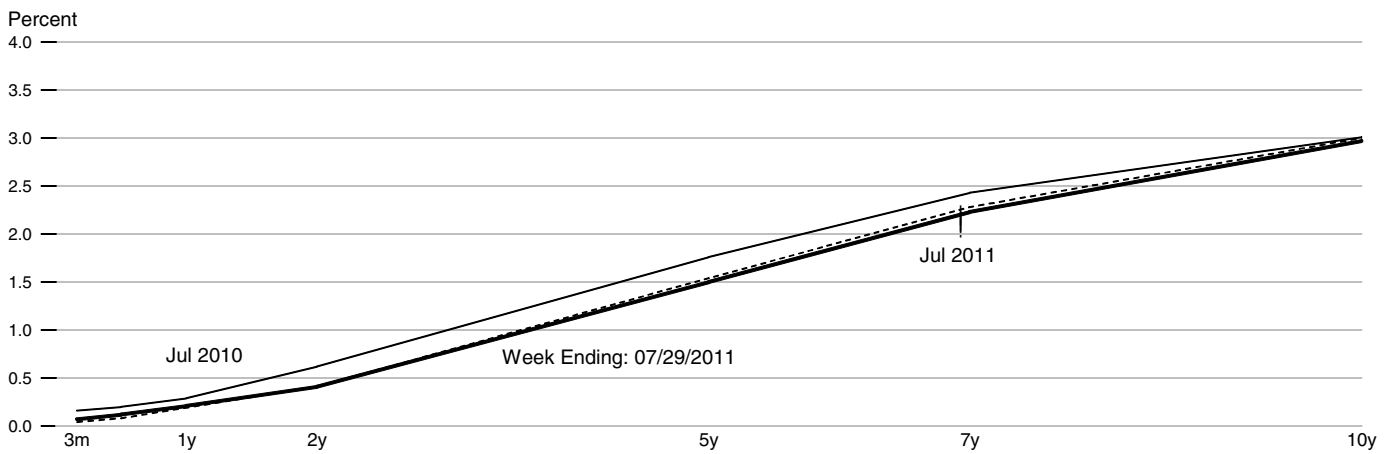
Contributions to Real GDP Growth Rate

	2009			2010				2011
	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Final Sales	0.33	0.50	2.18	1.09	0.90	0.95	6.53	0.60
Consumption	-1.12	1.41	0.69	1.33	1.54	1.67	2.79	1.52
Fixed Investment	-1.26	0.12	-0.12	0.39	2.06	0.18	0.80	0.16
Nonresidential	-0.72	-0.13	-0.10	0.71	1.51	0.93	0.73	0.20
Residential	-0.54	0.25	-0.02	-0.32	0.55	-0.75	0.07	-0.05
Government	1.24	0.33	-0.28	-0.32	0.80	0.79	-0.34	-1.20
Federal	1.11	0.45	0.01	0.15	0.72	0.71	-0.02	-0.69
State and Local	0.13	-0.12	-0.29	-0.48	0.08	0.09	-0.31	-0.51
Net Exports	1.47	-1.37	1.90	-0.31	-3.50	-1.70	3.27	0.14
Exports	-0.08	1.30	2.56	1.30	1.08	0.82	1.06	0.97
Imports	1.55	-2.67	-0.66	-1.61	-4.58	-2.53	2.21	-0.84
Change in Inventory	-1.03	1.10	2.83	2.64	0.82	1.61	-3.42	1.31
Residual	0.27	0.24	-0.04	0.03	-0.18	0.02	-0.30	0.04
Real GDP Growth	-0.70	1.60	5.01	3.73	1.72	2.56	3.11	1.91

Interest Rates



Treasury Yield Curve

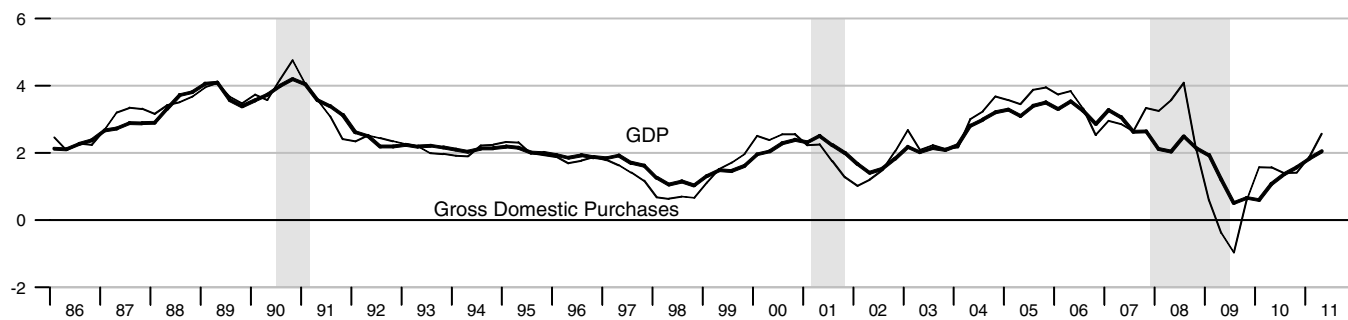


Standard and Poor's 500 Index with Reinvested Dividends



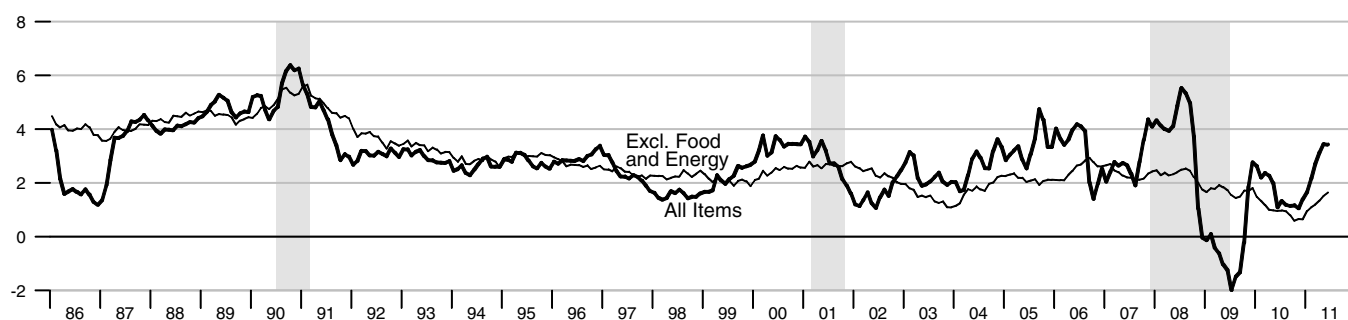
NIPA Chain Price Indexes

Percent change from year ago



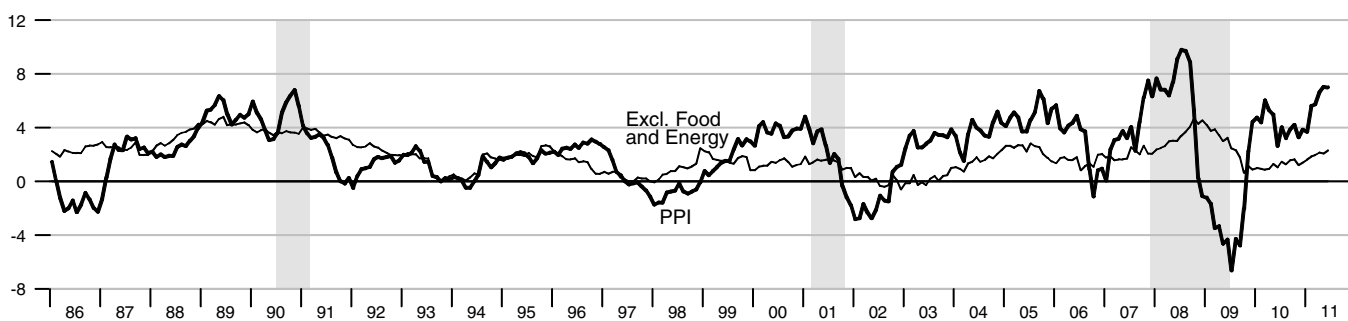
Consumer Price Index

Percent change from year ago



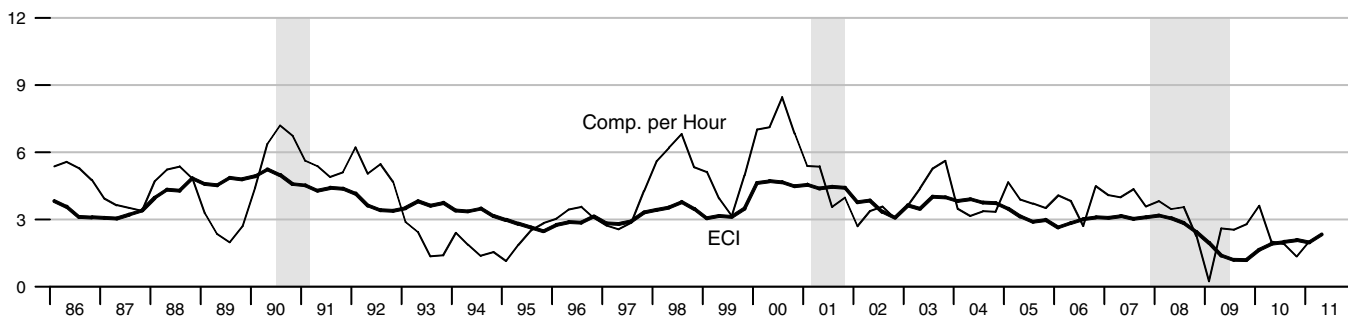
Producer Price Index, Finished Goods

Percent change from year ago

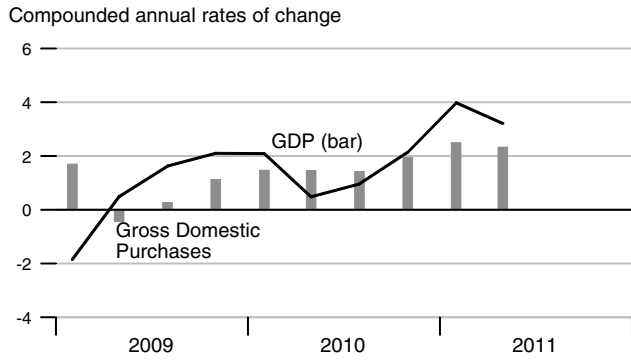


Employment Cost Index and Compensation per Hour

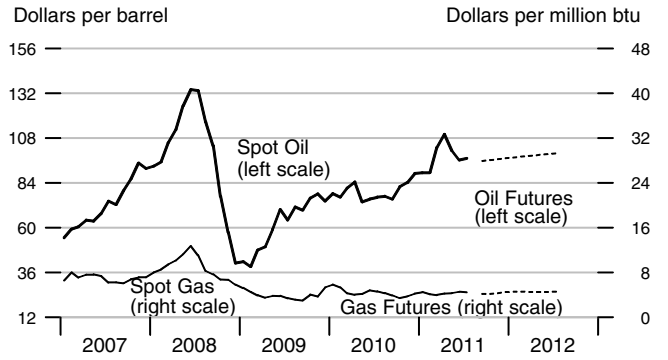
Percent change from year ago



NIPA Chain Price Indexes

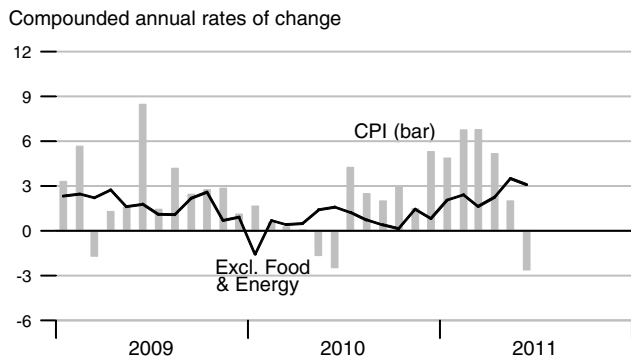


Oil & Natural Gas Prices: Spot & Futures

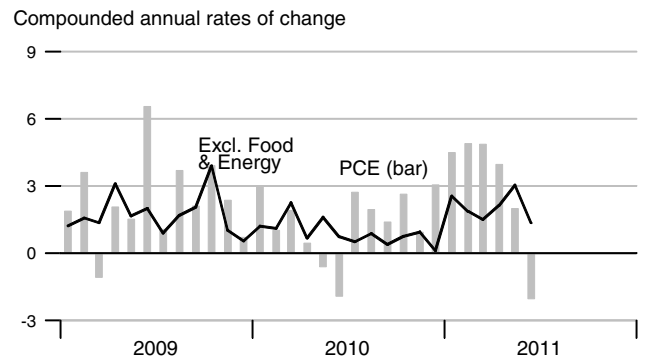


Note: Futures prices as of 7/29/2011.

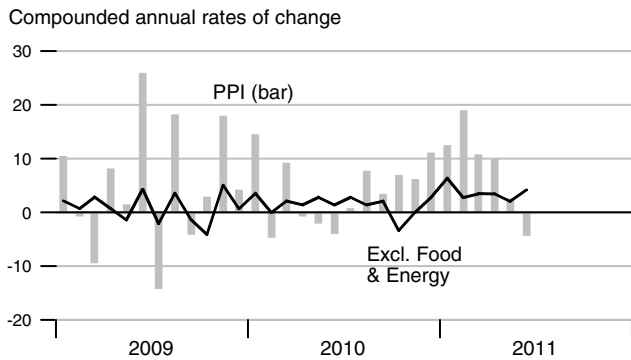
Consumer Price Index



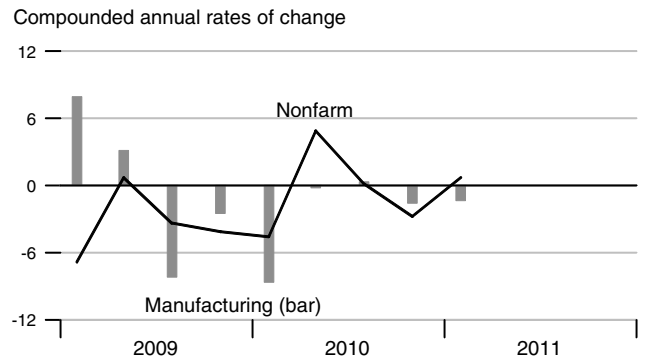
Consumption Chain Price Index



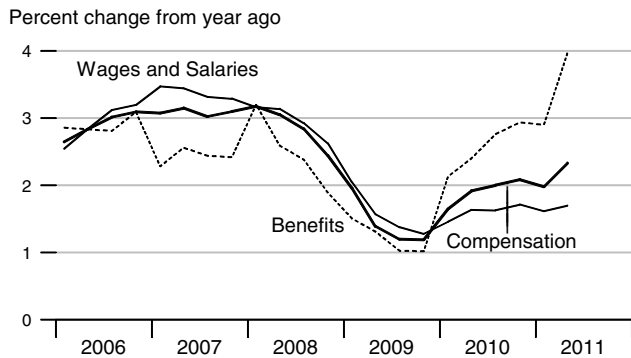
Producer Price Index, Finished Goods



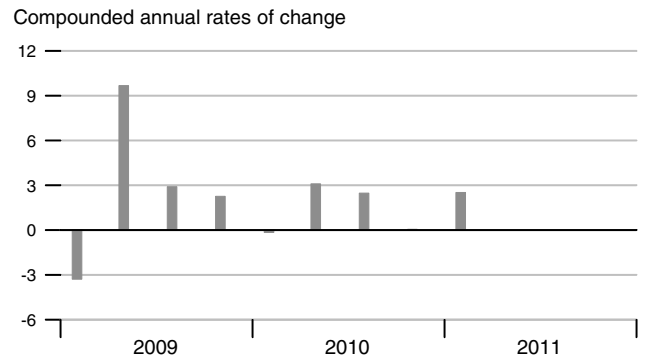
Unit Labor Cost



Employment Cost Index

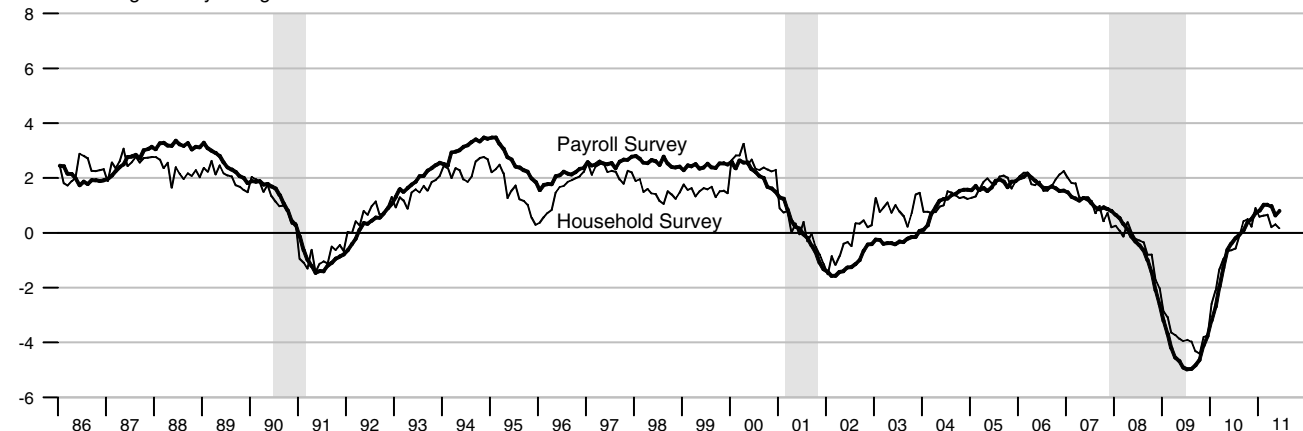


Compensation per Hour



Employment

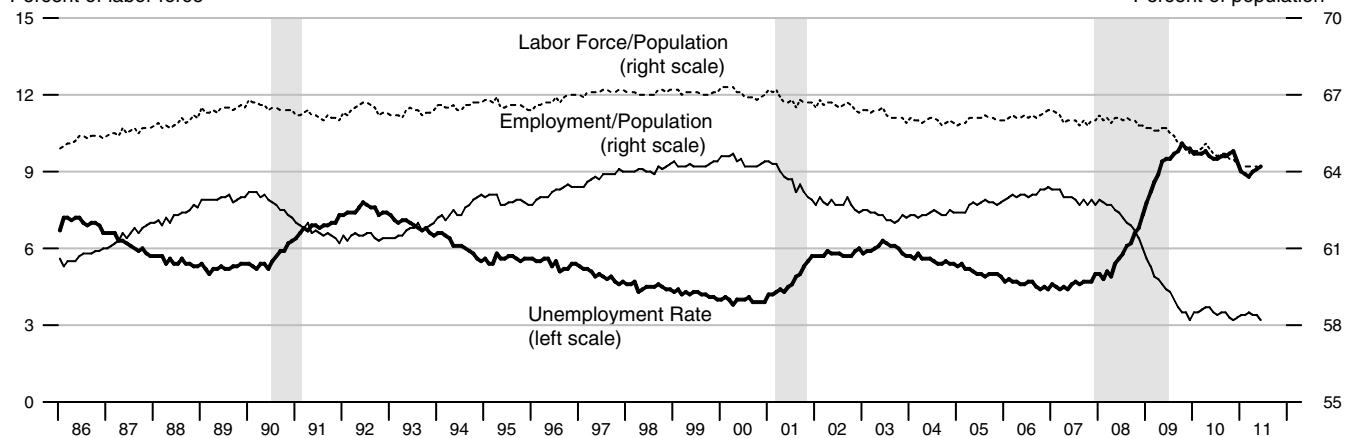
Percent change from year ago



Unemployment, Labor Force Participation, and Employment Rates

Percent of labor force

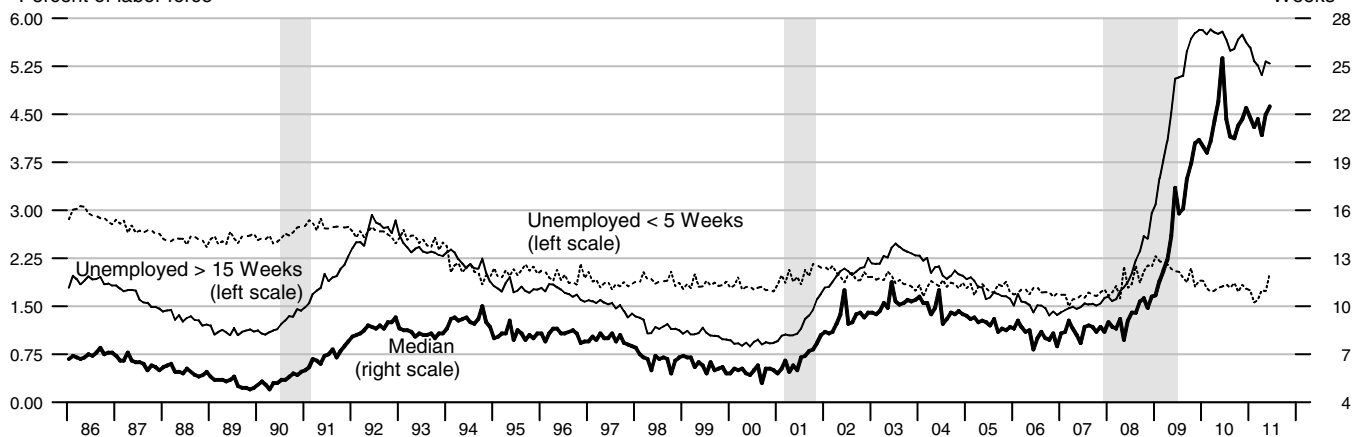
Percent of population



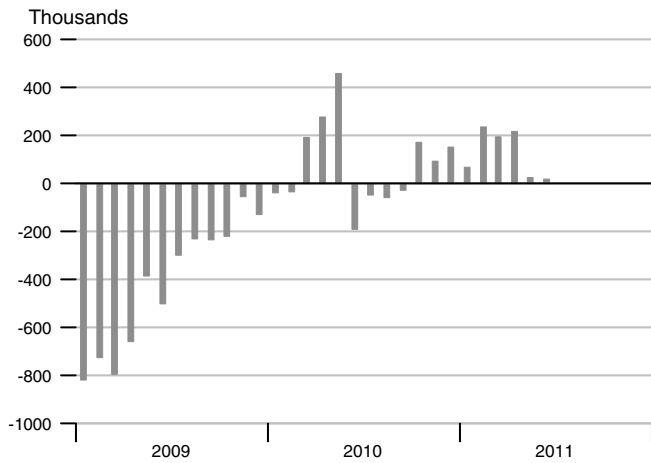
Duration of Unemployment

Percent of labor force

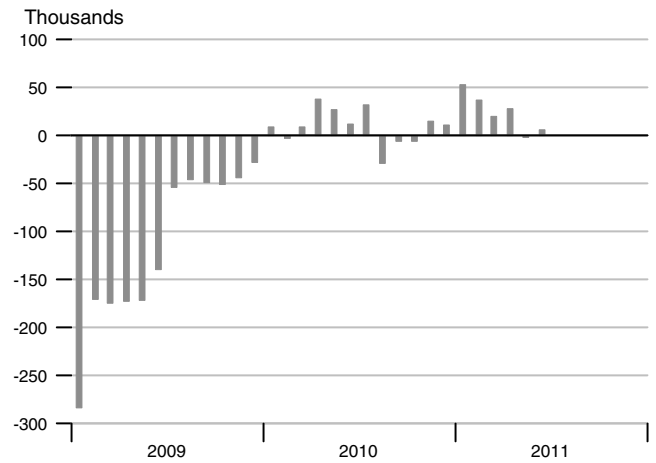
Weeks



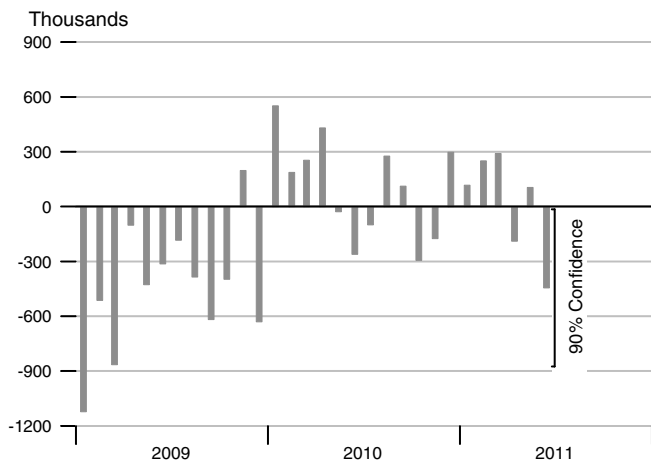
Change in Nonfarm Payrolls



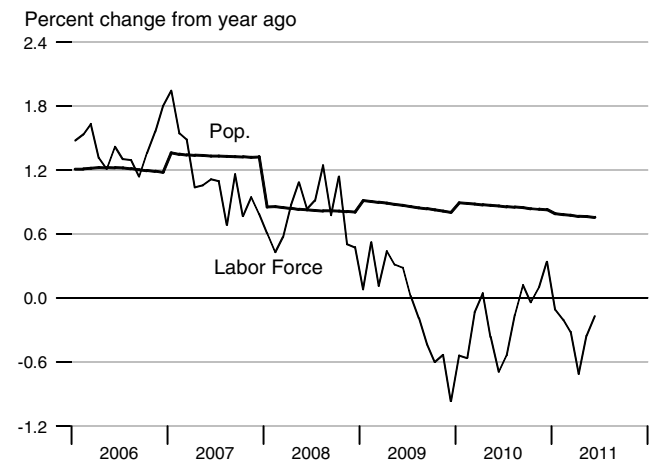
Change in Manufacturing Payrolls



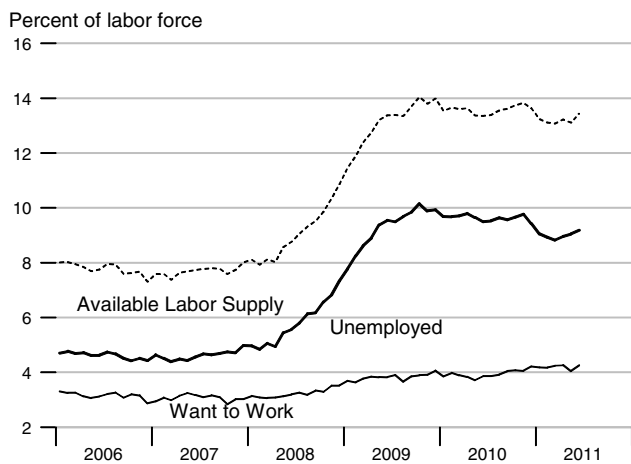
Change in Household Employment



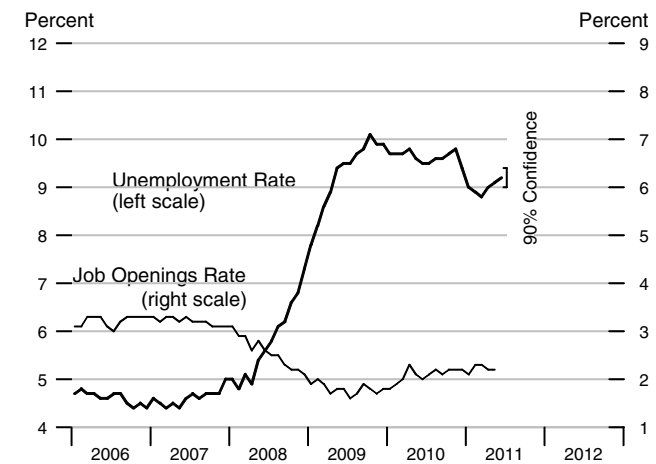
Labor Force and Population



Available Labor Supply and Components

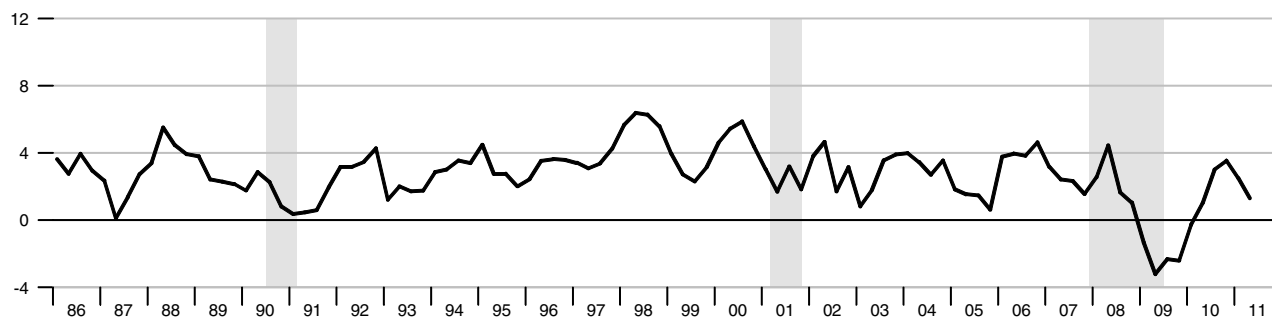


Unemployment Rate & Job Openings Rate



Real Disposable Personal Income

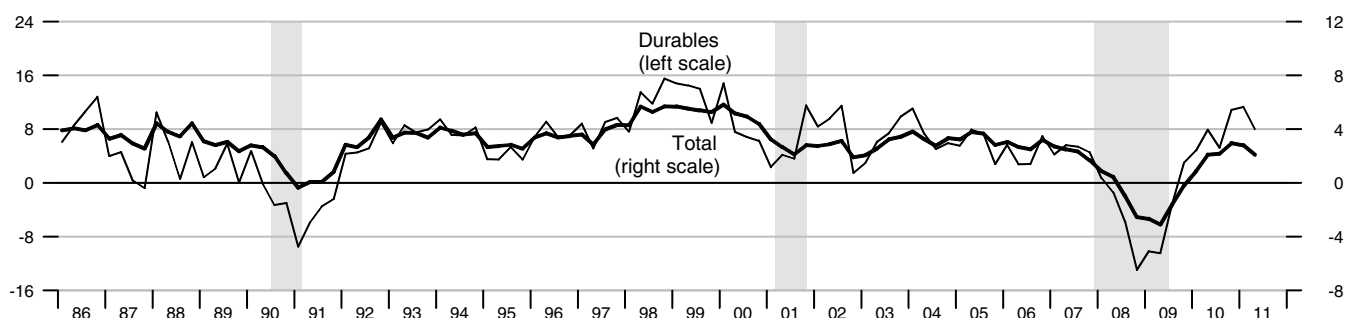
Percent change from year ago, quarterly data



Real Consumption

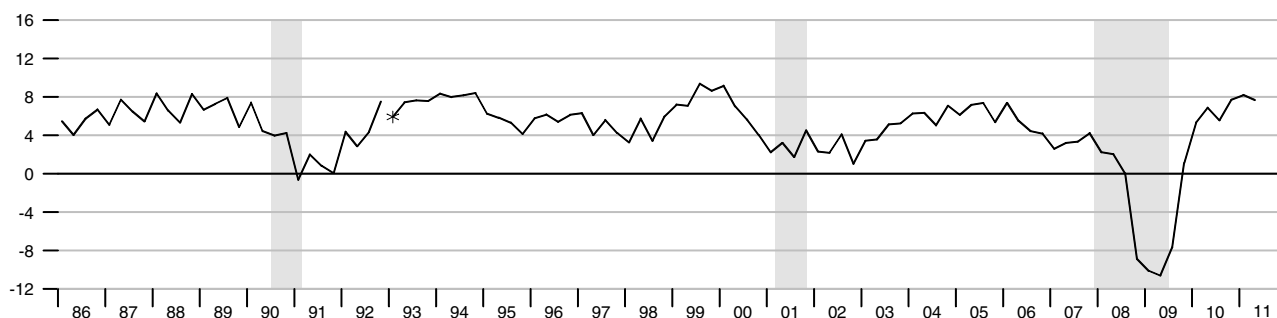
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



Retail and Food Services Sales

Percent change from year ago, quarterly average

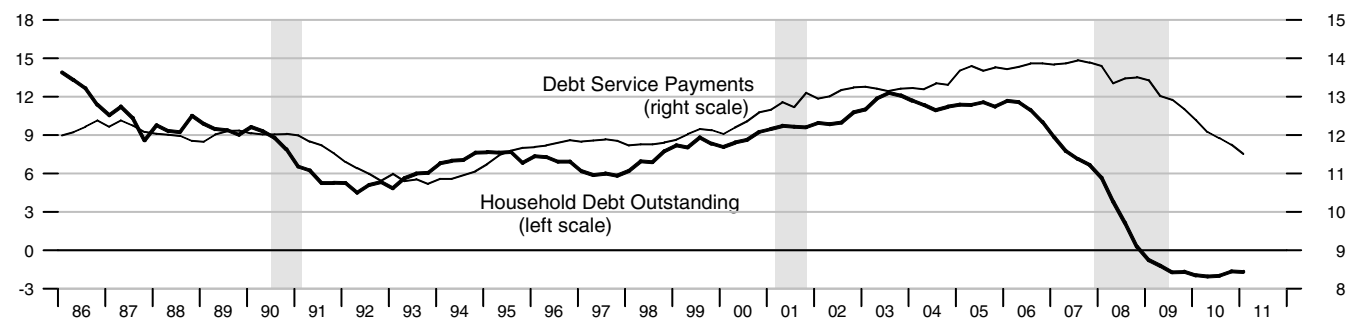


*Data from Jan. 1992 to the present are on a NAICS basis; data prior to Jan. 1992 are on an SIC basis and are not strictly comparable (see End Note).

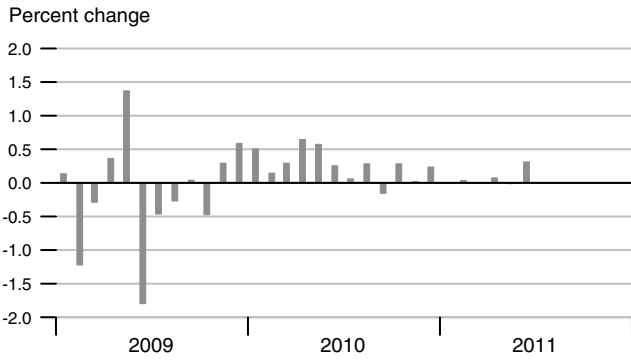
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

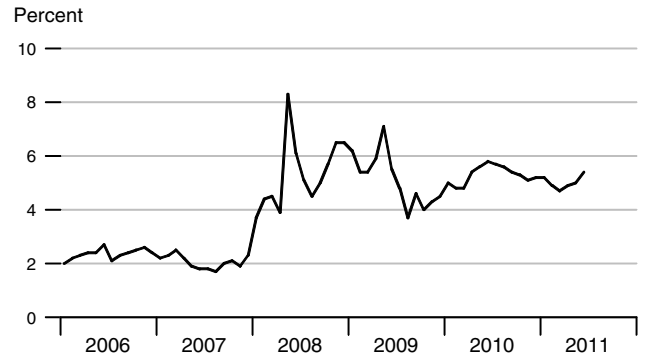
Percent of disposable personal income



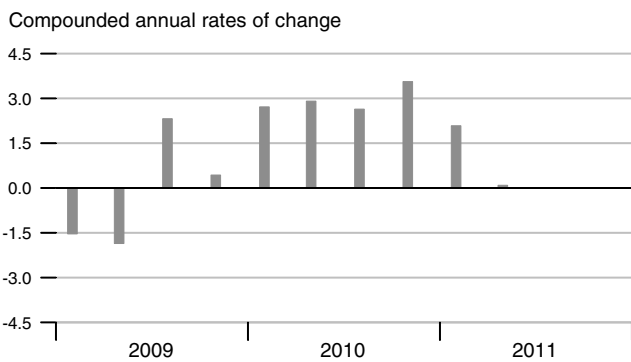
Real Disposable Personal Income



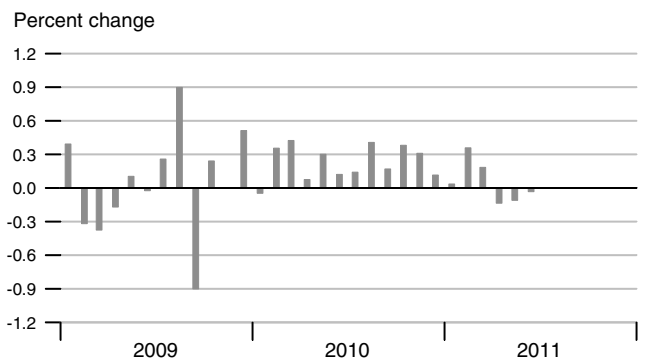
Personal Saving Rate



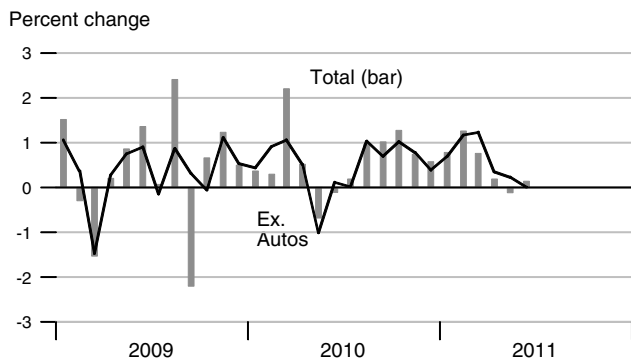
Real Consumption



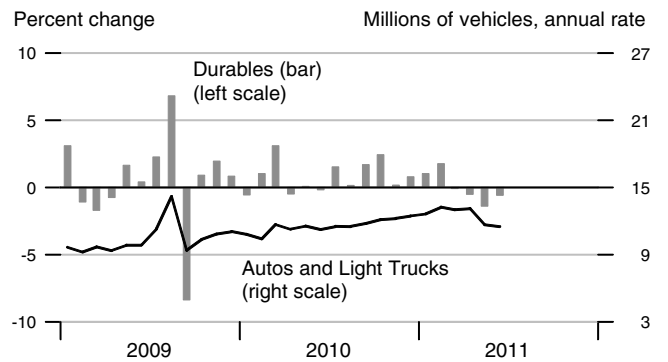
Real Consumption



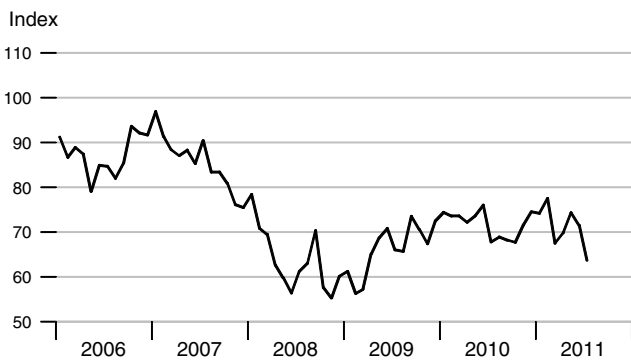
Retail & Food Services



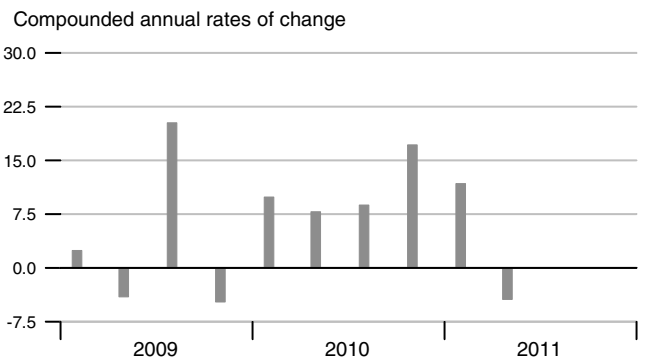
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

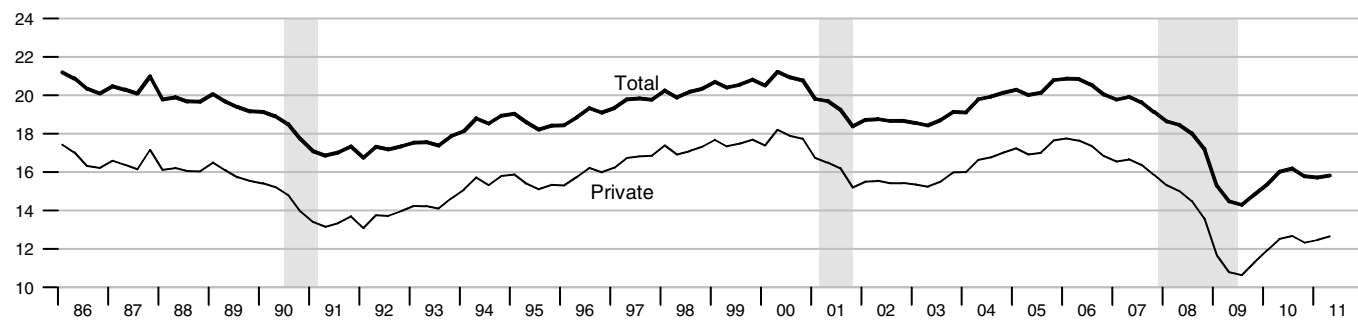


Real Durables Consumption



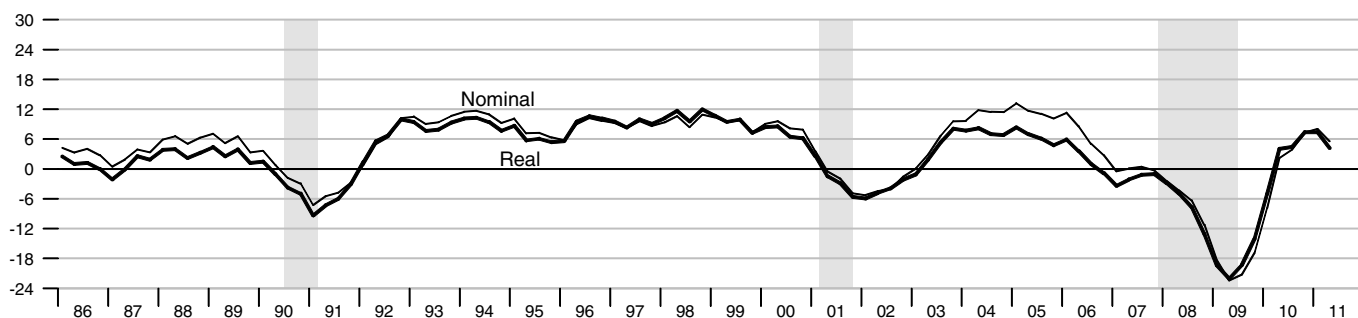
Investment

Percent of nominal GDP



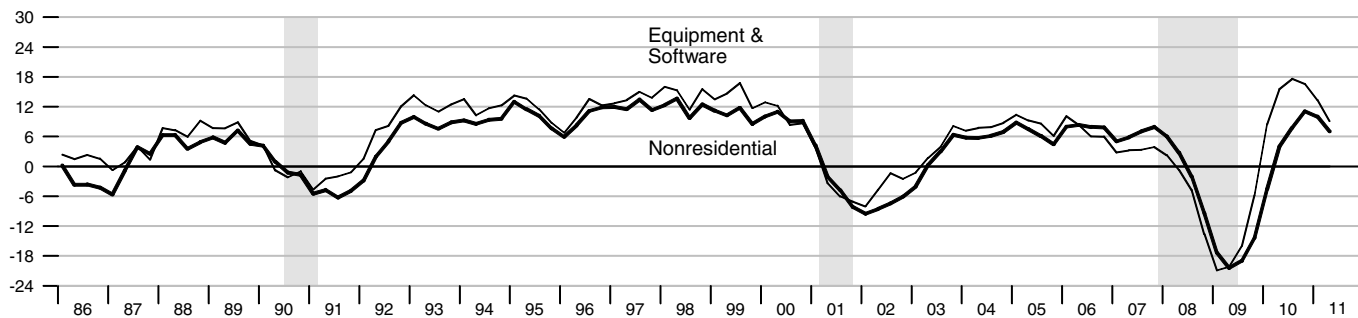
Private Fixed Investment

Percent change from year ago



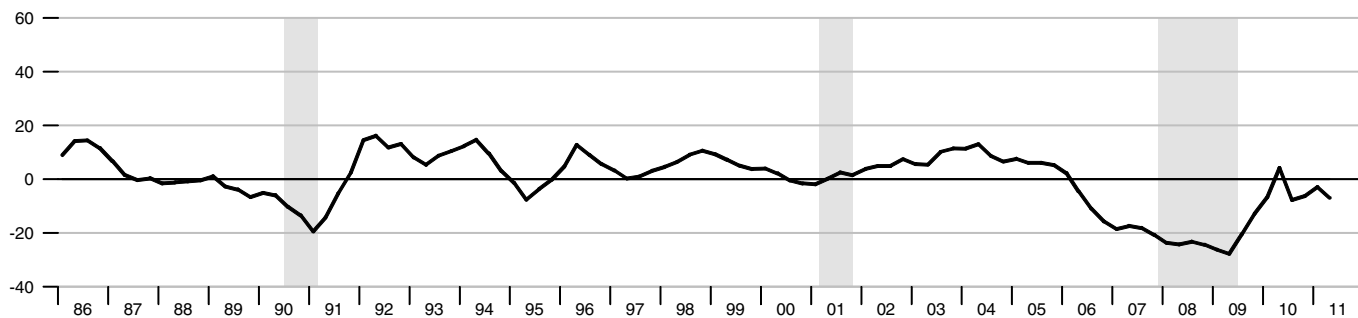
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

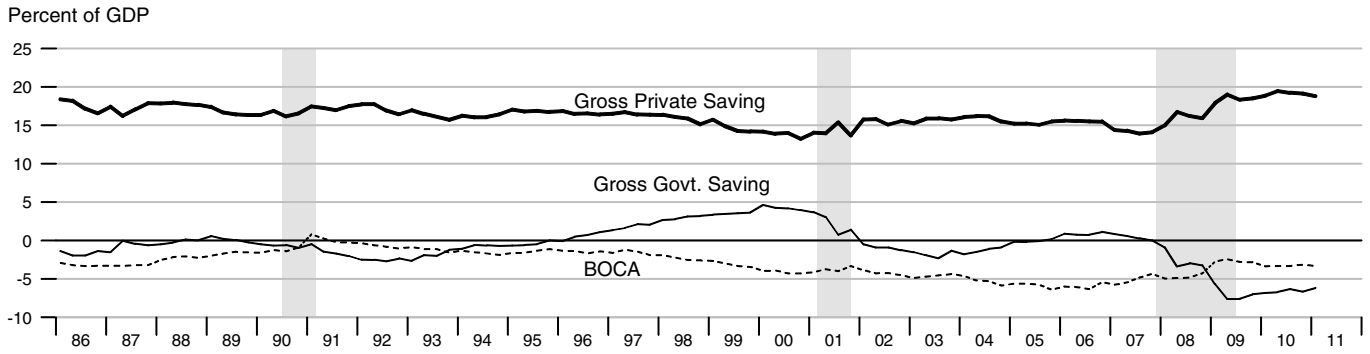


Real Residential Fixed Investment

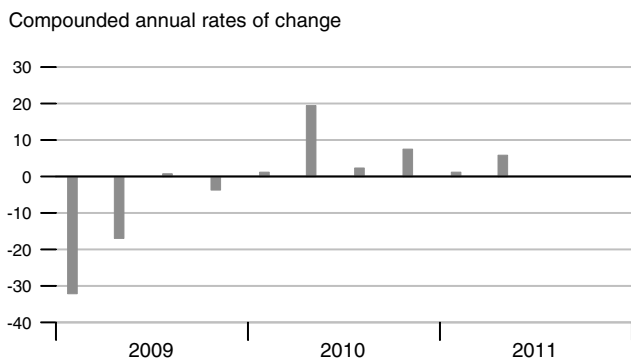
Percent change from year ago



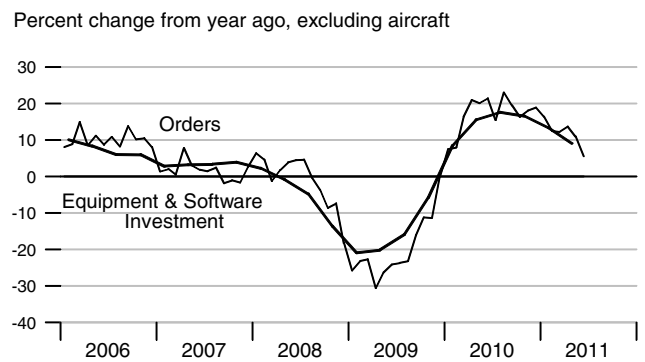
Gross Saving Rates and Balance on Current Account (NIPA)



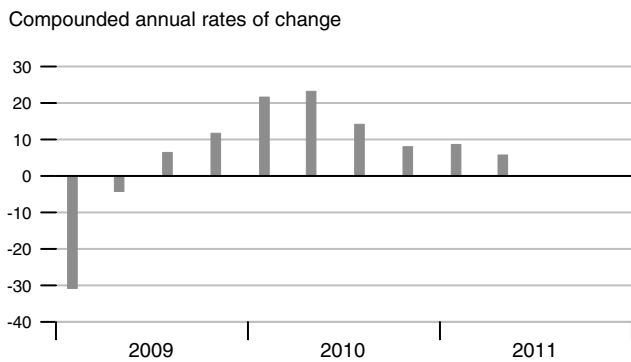
Real Private Fixed Investment



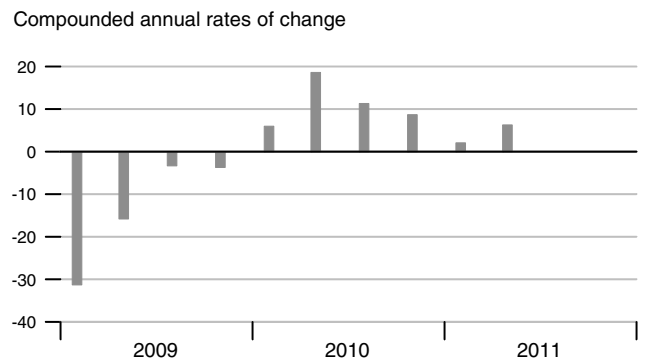
Nondefense Capital Goods Orders



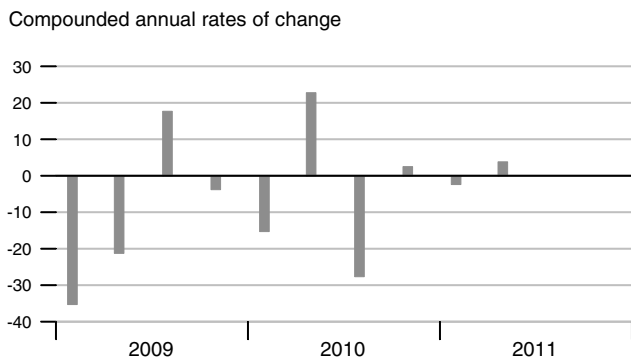
Real Equipment & Software Investment



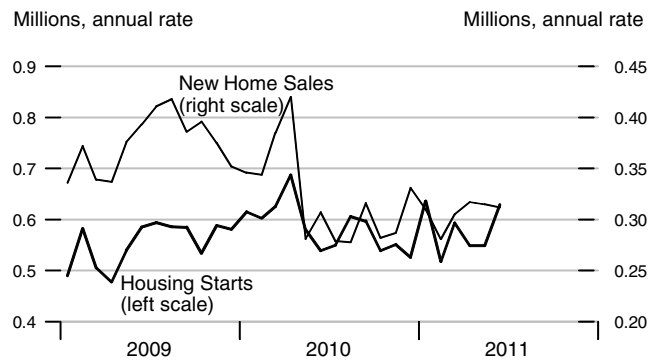
Real Nonresidential Fixed Investment



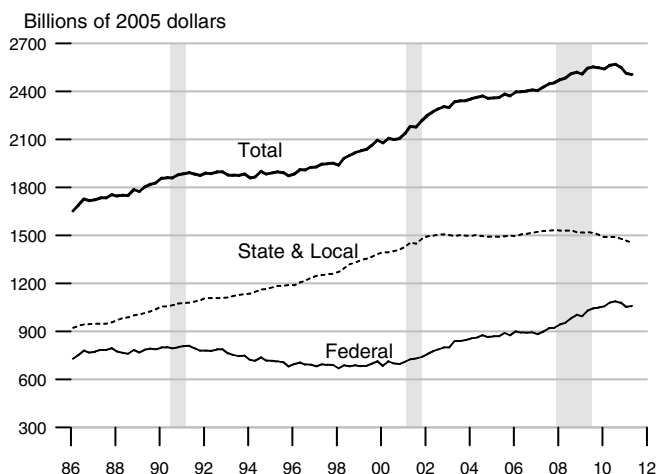
Real Residential Fixed Investment



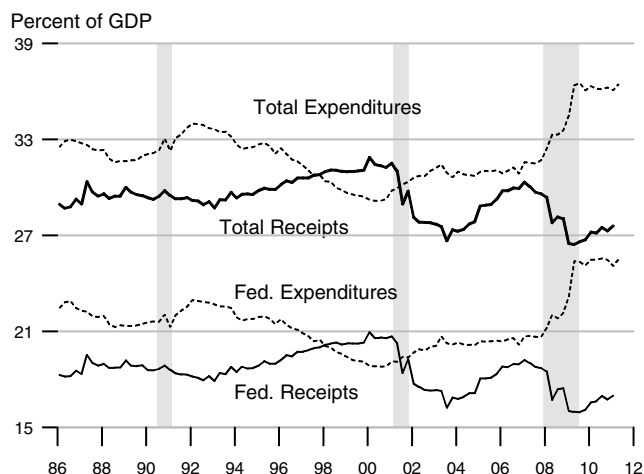
Housing Starts and New Home Sales



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures



Government Budgets

Billions of dollars

National Income Accounts

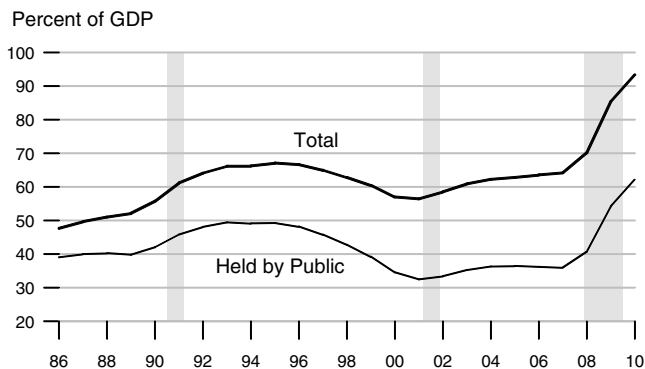
Calendar Years

Unified Budget

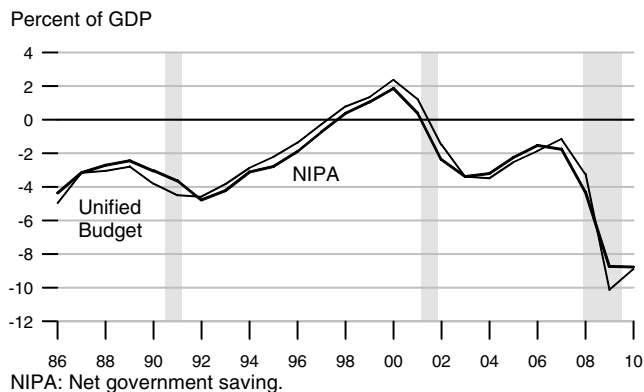
Fiscal Years

	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	1862.8	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	2292.8	-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	1923.1	1910.8	12.3	2654.7	2900.0	-245.3	2568.0	2728.7	-160.7
2008	1944.8	2017.0	-72.2	2502.2	3115.7	-613.5	2524.0	2982.5	-458.6
2009	1953.6	2031.7	-78.1	2232.5	3450.4	-1218	2105.0	3517.7	-1413
2010	2064.7	2090.0	-25.3	2429.6	3703.3	-1274	2162.7	3456.2	-1293
2009Q3	1969.2	2043.2	-74.0	2221.6	3527.0	-1305	515.9	845.3	-329.4
2009Q4	1999.2	2044.0	-44.8	2268.5	3537.9	-1269	487.8	875.8	-388.1
2010Q1	2034.0	2066.2	-32.2	2364.8	3636.6	-1272	466.1	795.0	-328.9
2010Q2	2043.3	2071.6	-28.3	2407.8	3685.8	-1278	643.1	930.1	-287.0
2010Q3	2082.1	2087.4	-5.3	2475.4	3733.1	-1258	564.8	854.9	-290.2
2010Q4	2099.3	2134.8	-35.5	2470.5	3757.8	-1287	531.8	900.8	-369.0
2011Q1	2092.5	2149.7	-57.2	2523.1	3729.0	-1206	488.1	948.6	-460.5
2011Q2	.	2169.5	.	.	3826.4	.	714.1	855.2	-141.1

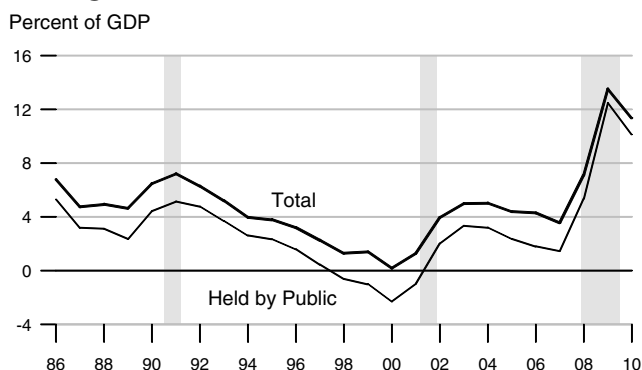
Federal Debt



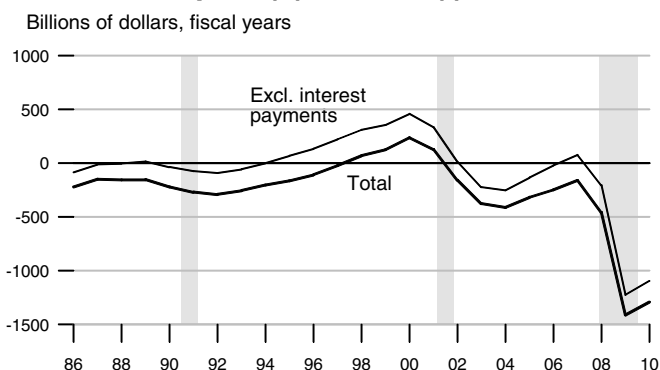
Federal Surplus (+) / Deficit (-)



Change in Federal Debt



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

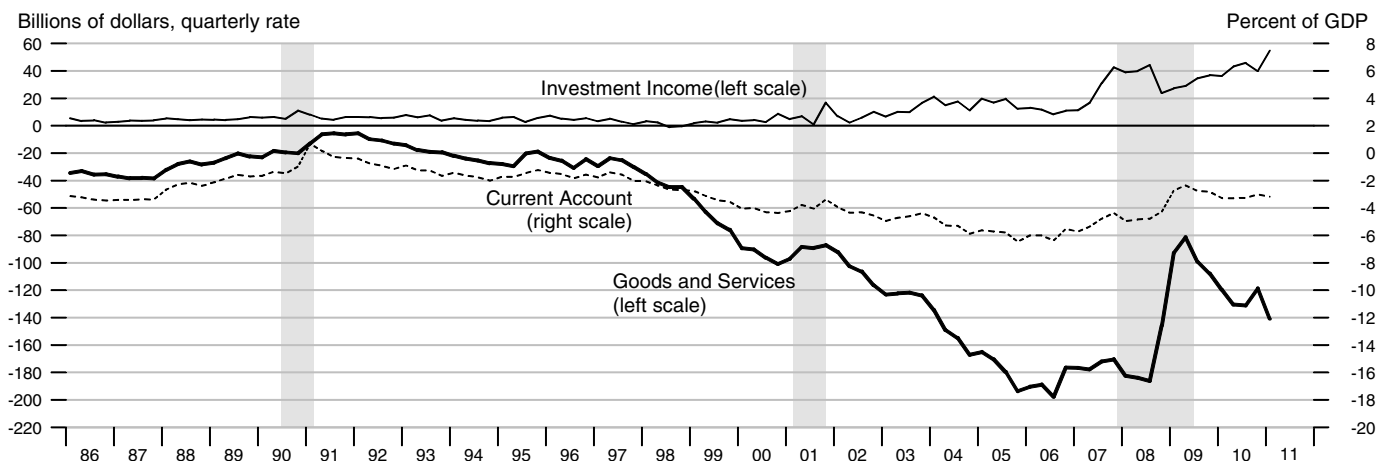


Federal Government Debt

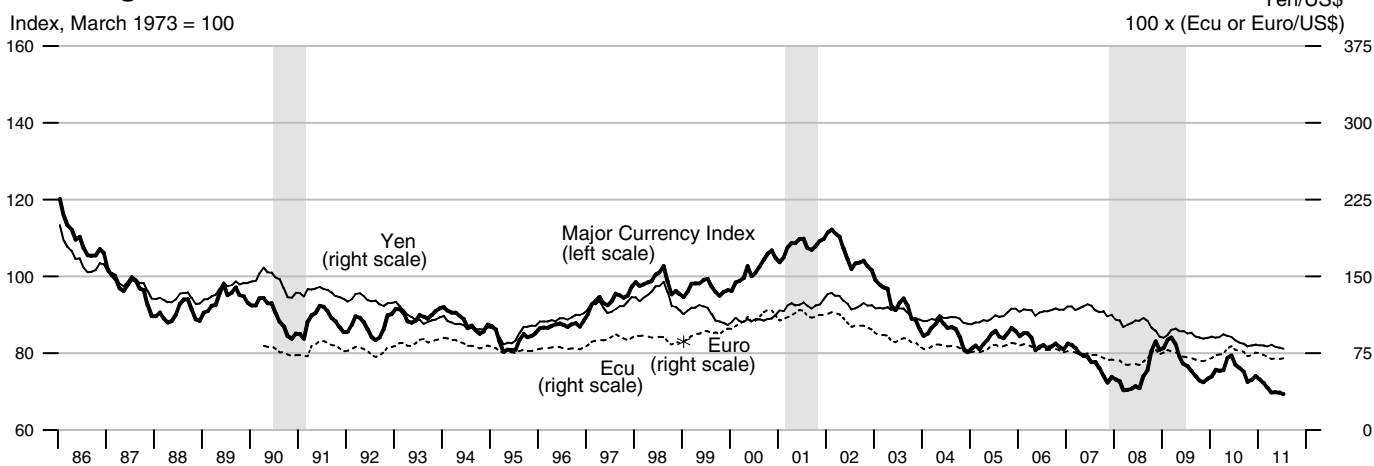
Billions of dollars, end of month or fiscal year
Excludes Agency-issued debt

		Total Public Debt	Held by Agencies and Trusts	Held by Public		Held by Private Investors	
				Total	Federal Reserve Banks	Total	Foreign and International
2008		10024.7	4210.5	5814.2	476.6	5332.0	2802.4
2009		11909.8	4355.3	7554.5	769.2	6782.7	3570.6
2010		13561.6	4534.0	9027.6	811.7	8211.1	4324.1
2008	March	9437.6	4103.6	5334.0	591.2	4742.9	2506.3
	June	9492.0	4207.0	5285.0	478.8	4806.2	2587.4
	September	10024.7	4210.5	5814.2	476.6	5332.0	2802.4
	December	10699.8	4327.2	6372.7	475.9	5893.4	3077.2
2009	March	11126.9	4290.6	6836.3	492.3	6341.7	3265.7
	June	11545.3	4368.8	7176.5	656.5	6518.5	3460.8
	September	11909.8	4355.3	7554.5	769.2	6782.7	3570.6
	December	12311.4	4497.0	7814.4	776.6	7034.4	3685.1
2010	March	12773.1	4478.9	8294.3	776.7	7513.3	3877.8
	June	13201.8	4562.6	8639.2	777.0	7856.7	4069.9
	September	13561.6	4534.0	9027.6	811.7	8211.1	4324.1
	December	14025.2	4629.8	9395.4	1021.5	8368.9	4379.9
2011	March	14270.1	4613.6	9656.6	1340.5	8311.1	4475.0

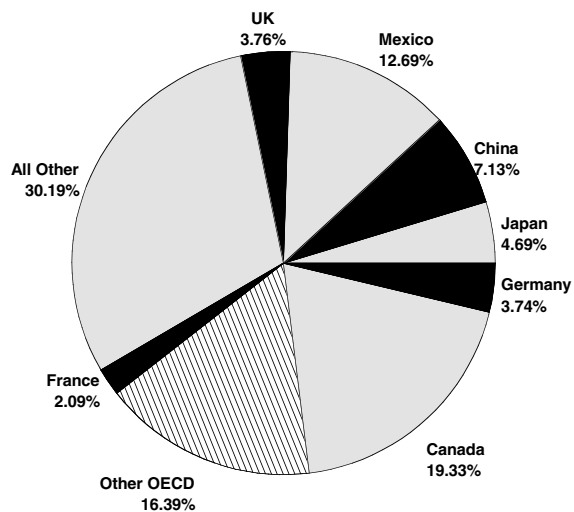
Current Account, Trade and Investment Income Balances



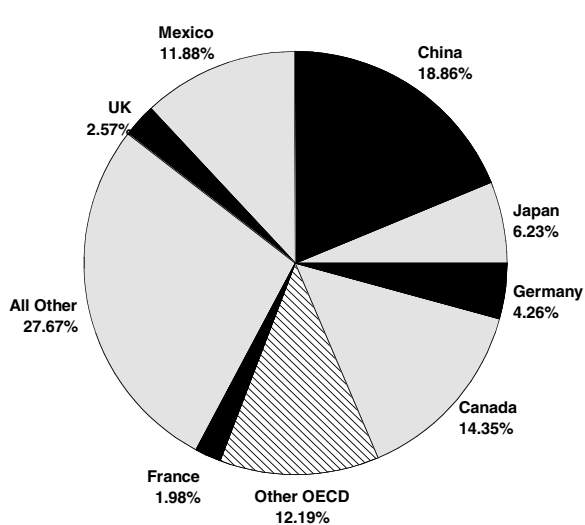
Exchange Rates



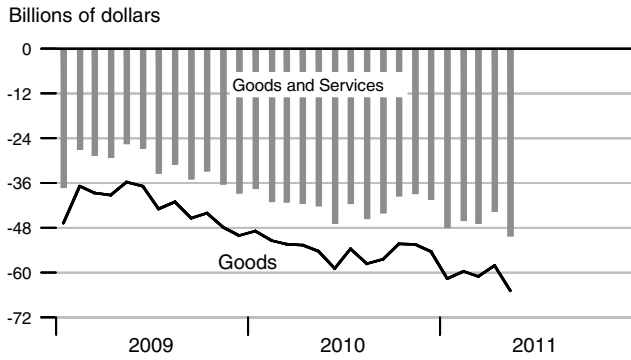
Goods Export Shares, 2010



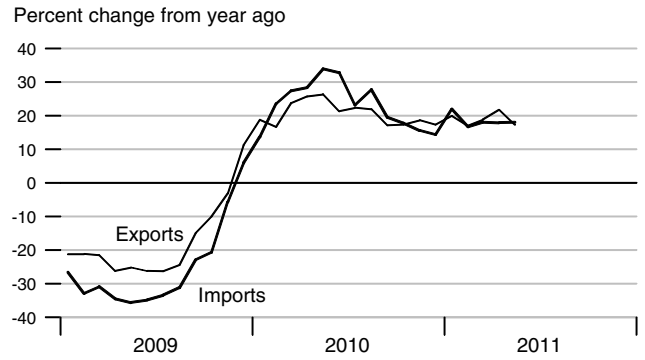
Goods Import Shares, 2010



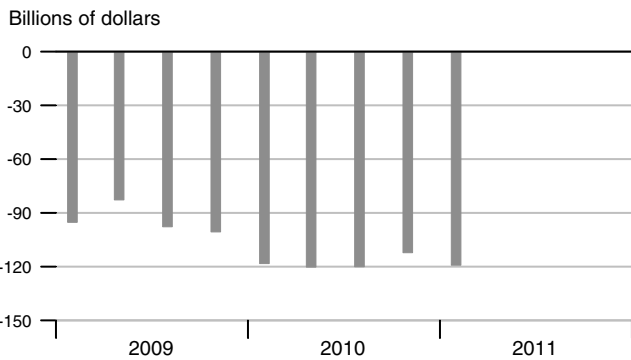
Trade Balance



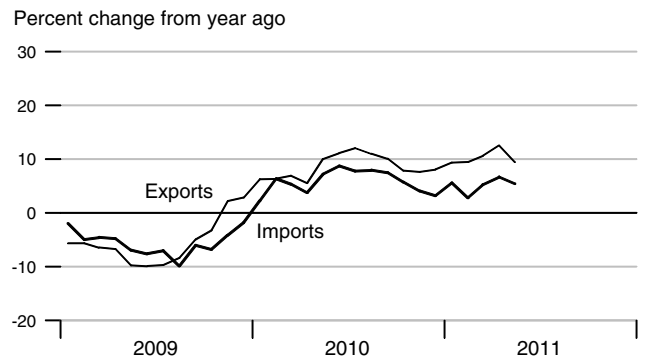
Goods Trade



Current Account Balance



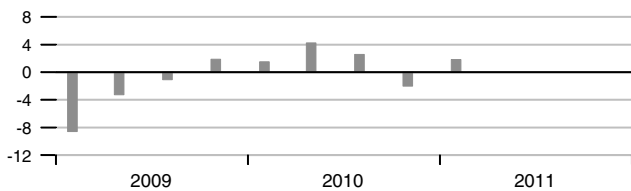
Services Trade



Real GDP Growth of Major Trading Partners

Compounded annual rates of change

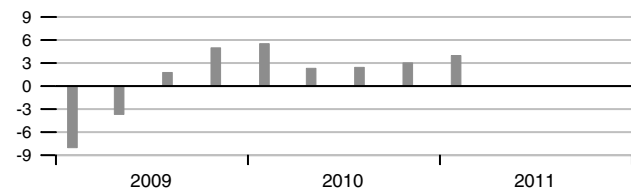
United Kingdom



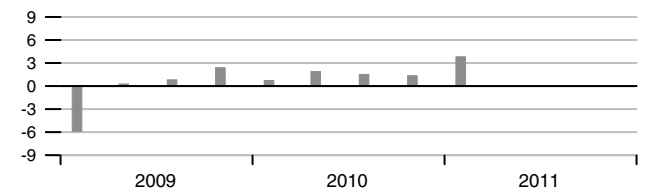
Germany



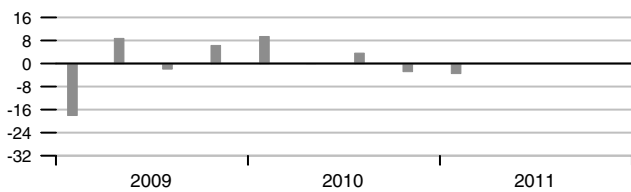
Canada



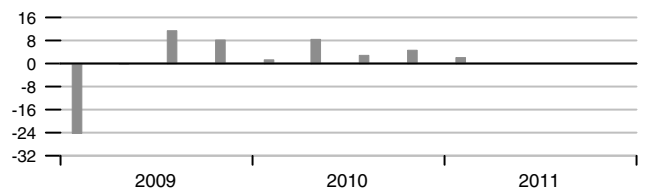
France



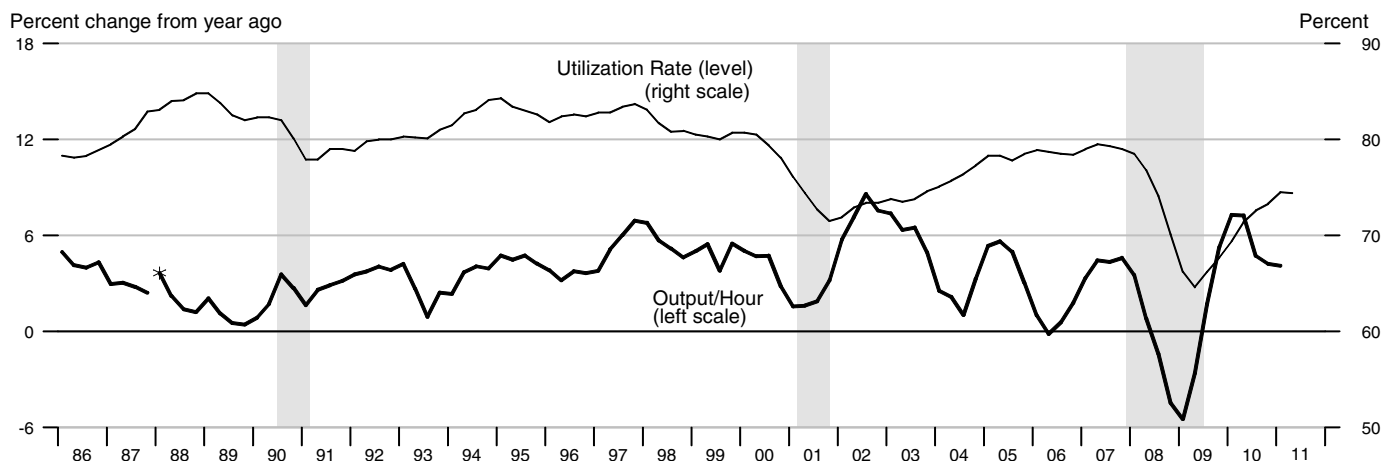
Japan



Mexico

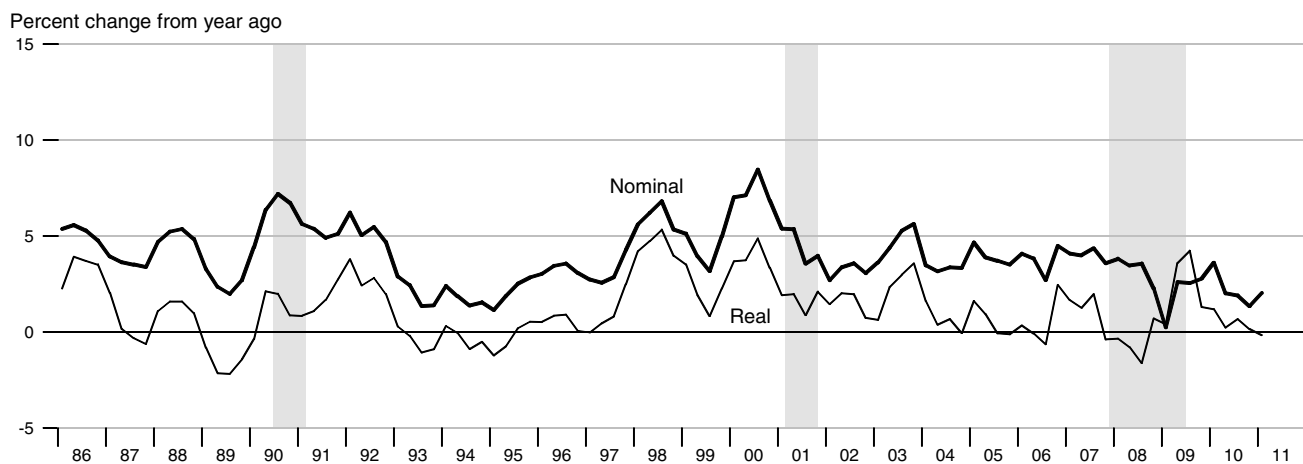


Output per Hour and Capacity Utilization, Manufacturing

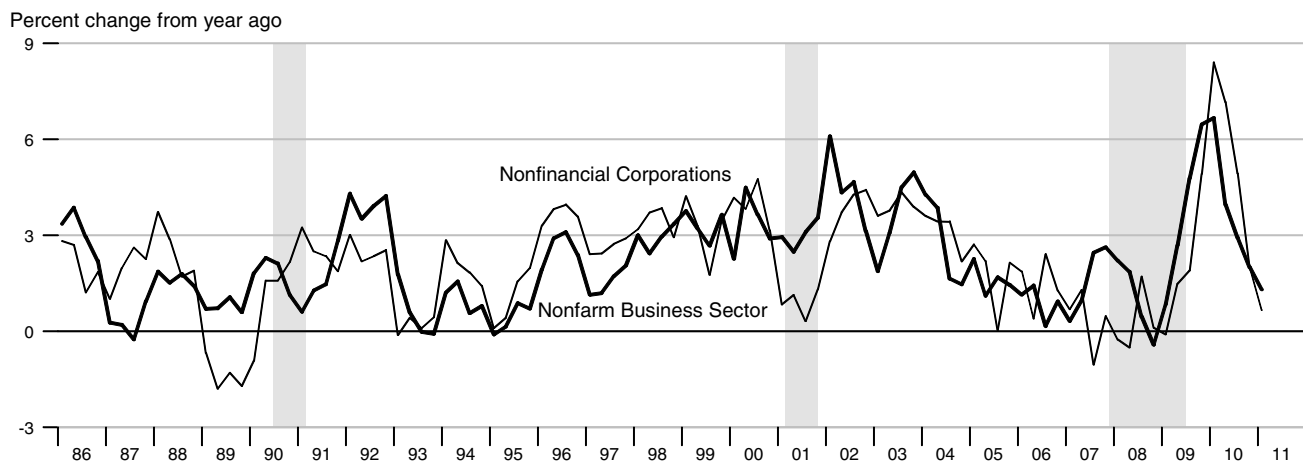


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

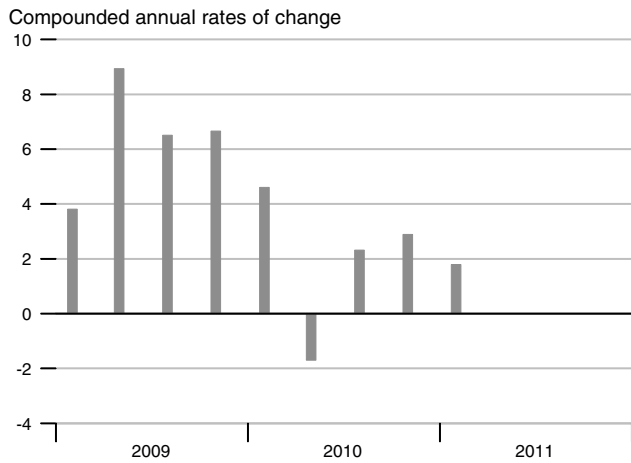
Nonfarm Compensation per Hour



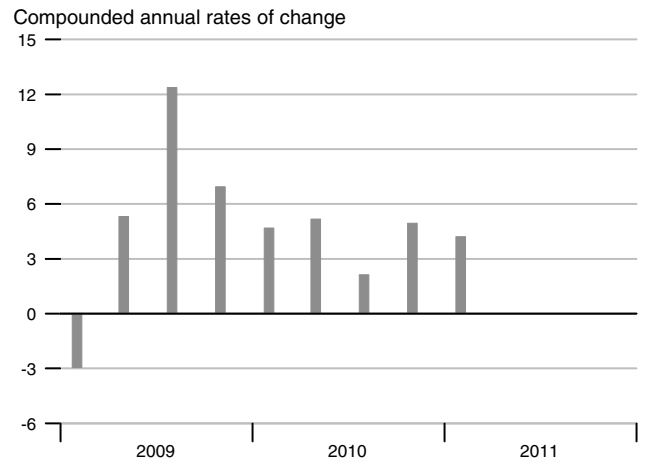
Output per Hour, Nonfarm Business and Nonfinancial Corporations



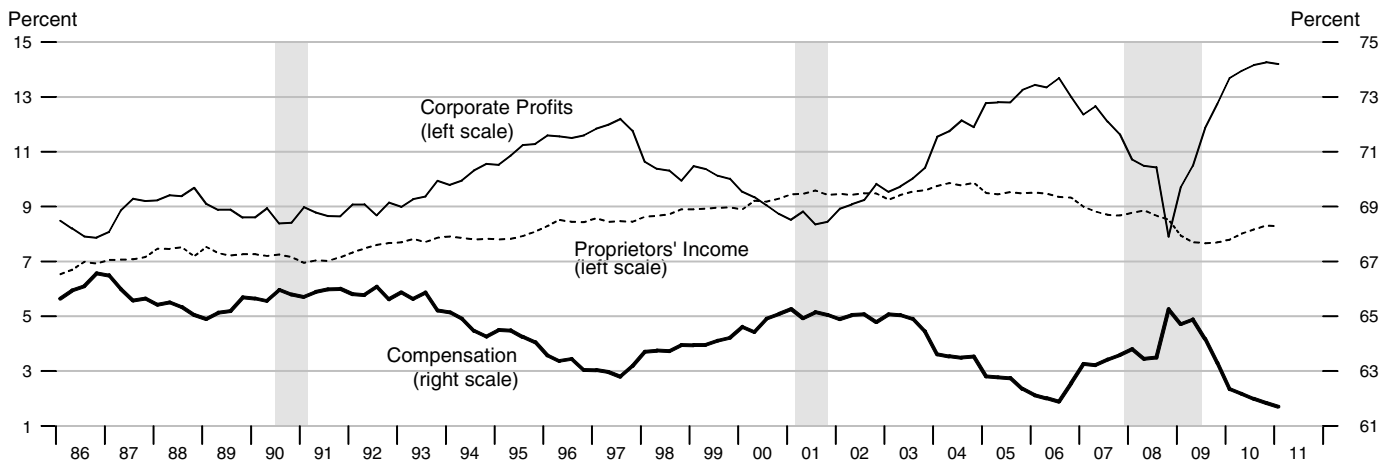
Nonfarm Output per Hour



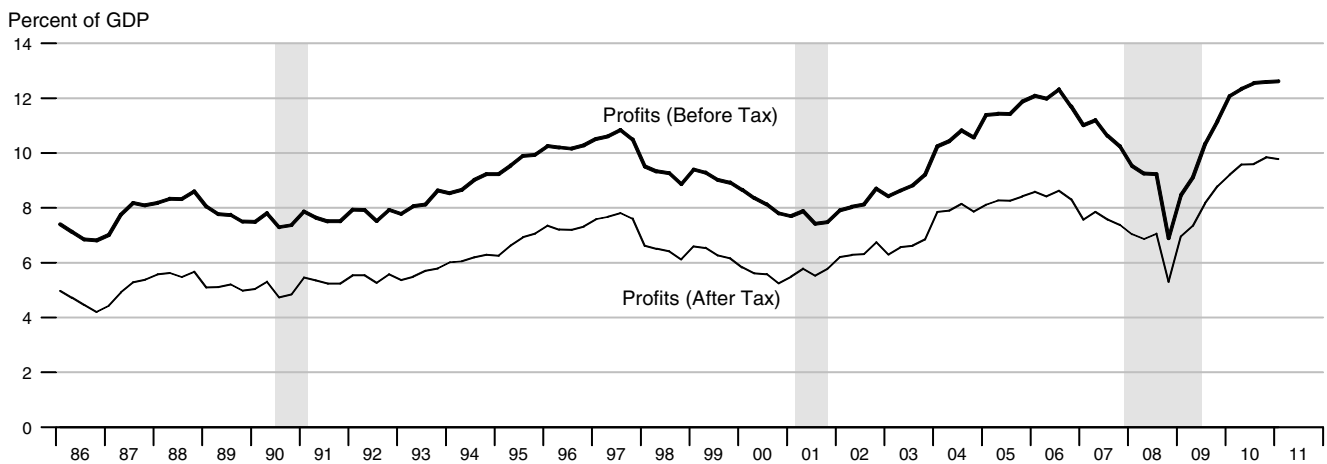
Manufacturing Output per Hour



Selected Component Shares of National Income

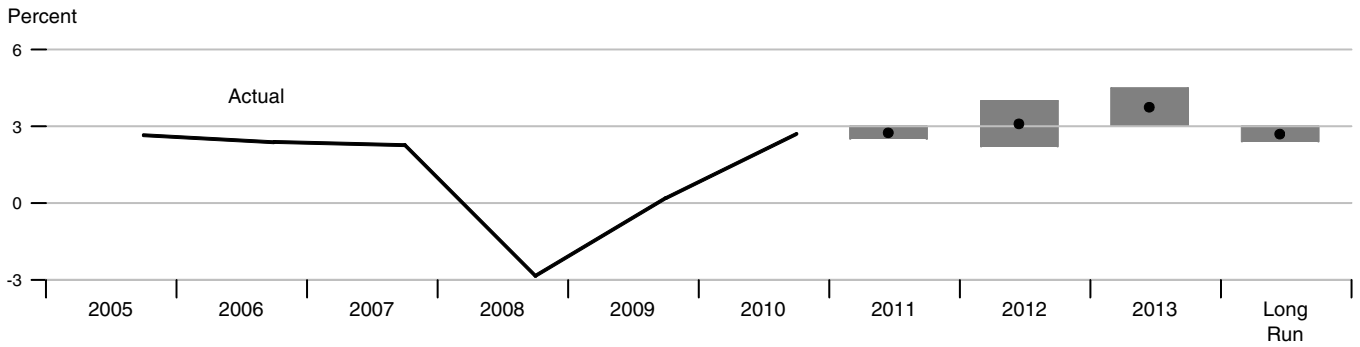


Corporate Profits

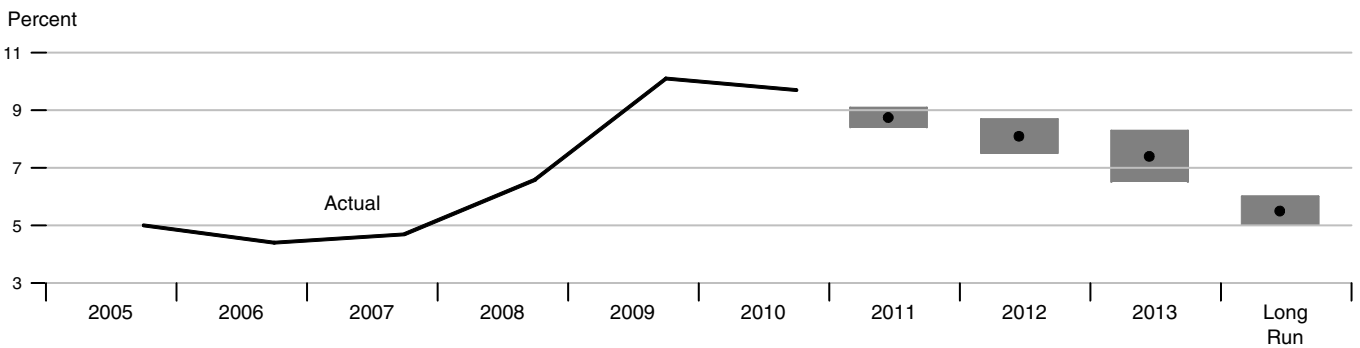


June 2011 FOMC Projections

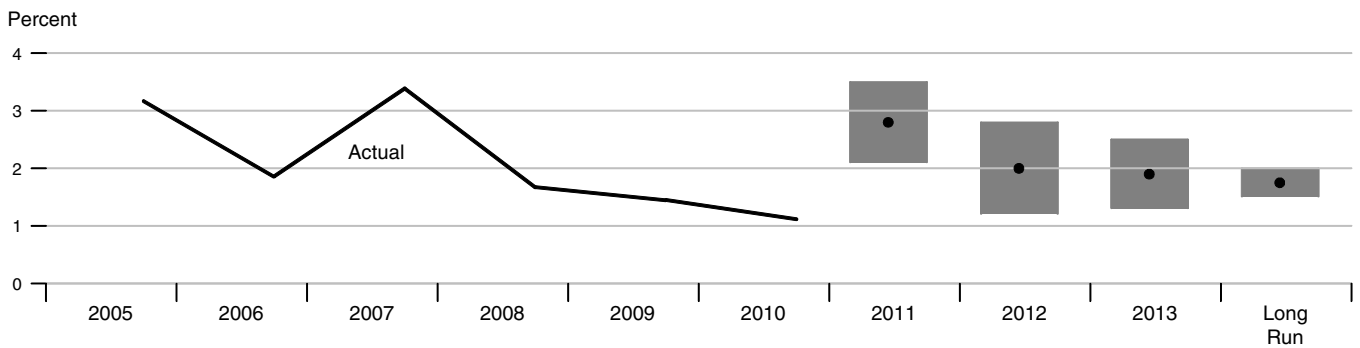
Change in Real GDP (Q4/Q4)



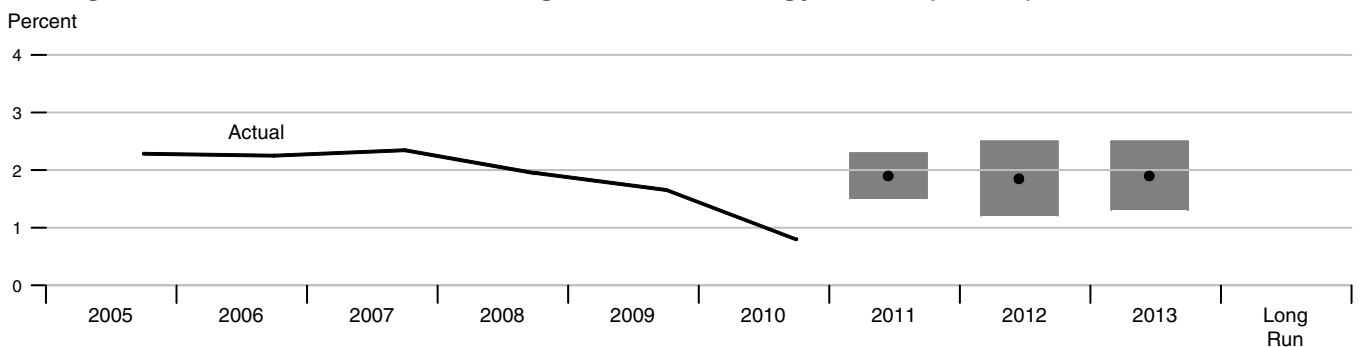
Unemployment Rate (Q4)



Change in PCE Price Index (Q4/Q4)

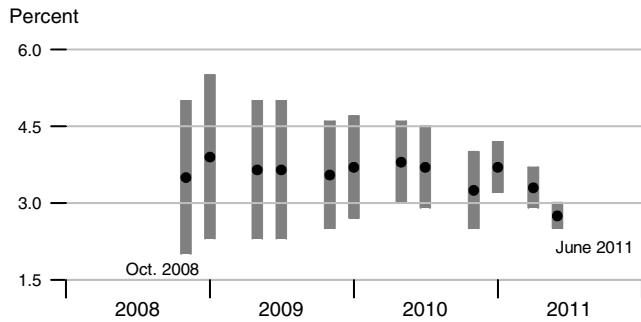


Change in PCE Price Index Excluding Food and Energy Prices (Q4/Q4)

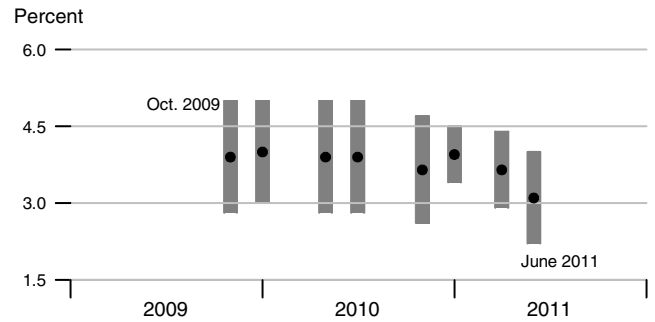


FOMC Quarterly Projections for 2011 and 2012: A Timeline

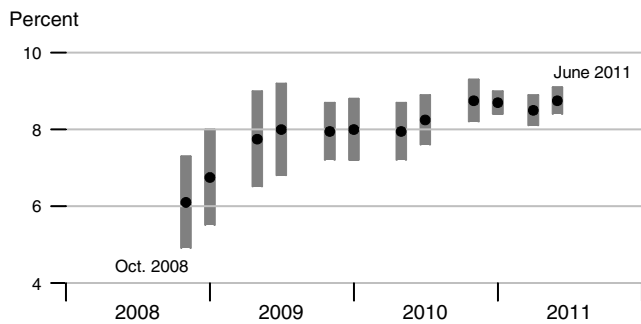
Change in Real GDP for 2011



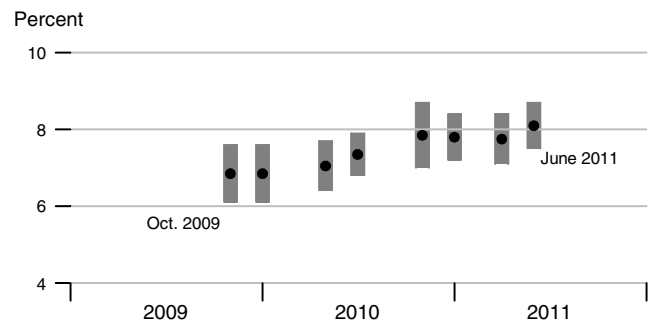
Change in Real GDP for 2012



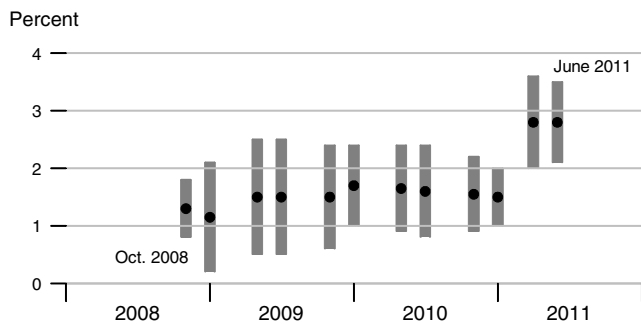
Unemployment Rate for 2011 (Q4)



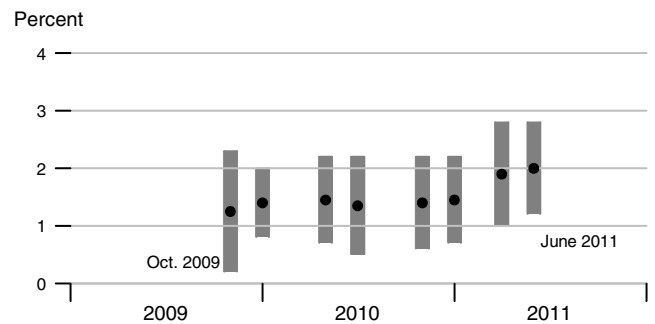
Unemployment Rate for 2012 (Q4)



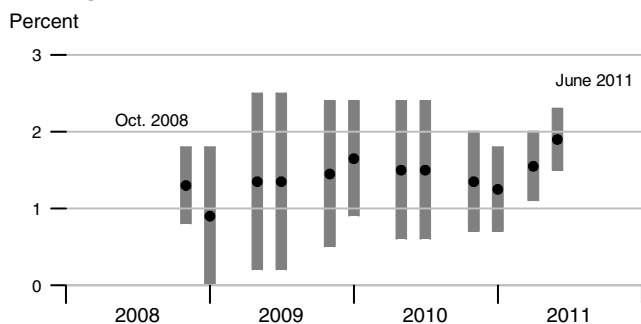
Change in PCE Price Index for 2011



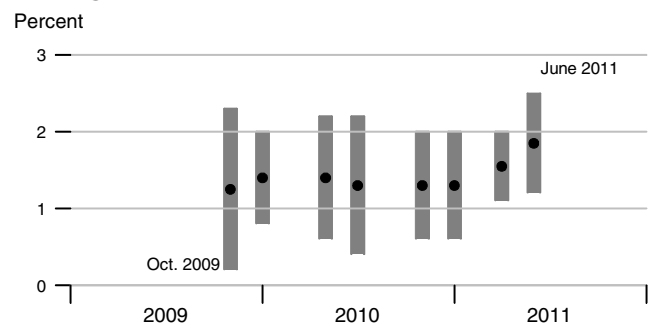
Change in PCE Price Index for 2012



Change in PCE Core Price Index for 2011



Change in PCE Core Price Index for 2012



	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	
2007	106.231		2.9	105.2		3.1	105.5		3.4	104.6		2.4	
2008	108.565		2.2	108.2		2.9	108.6		3.0	107.2		2.5	
2009	109.732		1.1	109.8		1.4	110.3		1.6	108.5		1.2	
2010	111.000		1.2	111.9		1.9	112.1		1.6	111.3		2.6	
2008	1	107.623	2.5	2.1	107.2	2.7	3.2	107.6	3.4	3.2	106.4	1.9	3.2
	2	108.282	2.5	2.0	108.0	3.0	3.1	108.4	3.0	3.1	106.9	1.9	2.6
	3	109.107	3.1	2.5	108.6	2.2	2.8	109.0	2.2	2.9	107.5	2.3	2.4
	4	109.247	0.5	2.1	109.1	1.9	2.4	109.5	1.8	2.6	107.9	1.5	1.9
2009	1	109.709	1.7	1.9	109.3	0.7	2.0	109.8	1.1	2.0	108.0	0.4	1.5
	2	109.589	-0.4	1.2	109.5	0.7	1.4	110.1	1.1	1.6	108.3	1.1	1.3
	3	109.662	0.3	0.5	109.9	1.5	1.2	110.5	1.5	1.4	108.6	1.1	1.0
	4	109.969	1.1	0.7	110.4	1.8	1.2	110.9	1.5	1.3	109.0	1.5	1.0
2010	1	110.370	1.5	0.6	111.1	2.6	1.6	111.4	1.8	1.5	110.3	4.9	2.1
	2	110.770	1.5	1.1	111.6	1.8	1.9	111.9	1.8	1.6	110.9	2.2	2.4
	3	111.162	1.4	1.4	112.1	1.8	2.0	112.3	1.4	1.6	111.6	2.5	2.8
	4	111.699	1.9	1.6	112.7	2.2	2.1	112.8	1.8	1.7	112.2	2.2	2.9
2011	1	112.390	2.5	1.8	113.3	2.1	2.0	113.2	1.4	1.6	113.5	4.7	2.9
	2	113.039	2.3	2.0	114.2	3.2	2.3	113.8	2.1	1.7	115.3	6.5	4.0
		Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
		Percent change		Billions of 2005 \$	Percent change		Index	Percent change		Index	Percent change		
		Billions of 2005 \$	Annual rate		Year ago	Annual rate		Year ago	Annual rate		Year ago	Annual rate	Year ago
2007		1554.433		9.3	2203.245		2.4	102.515		1.6	107.922		4.0
2008		1649.274		6.1	2144.034		-2.7	103.555		1.0	111.443		3.3
2009		1494.020		-9.4	1852.823		-13.6	107.355		3.7	113.711		2.0
2010		1663.216		11.3	2084.990		12.5	111.522		3.9	116.246		2.2
2008	1	1643.924	5.5	9.8	2194.139	1.4	-0.3	103.522	-1.3	2.2	110.944	4.8	3.8
	2	1693.878	12.7	11.3	2180.094	-2.5	-1.4	103.870	1.4	1.9	110.937	-0.0	3.5
	3	1678.712	-3.5	6.4	2143.325	-6.6	-3.3	103.405	-1.8	0.5	111.789	3.1	3.6
	4	1580.583	-21.4	-2.5	2058.579	-14.9	-5.9	103.430	0.1	-0.4	112.146	1.3	2.3
2009	1	1451.105	-29.0	-11.7	1855.266	-34.0	-15.4	104.401	3.8	0.8	111.213	-3.3	0.2
	2	1449.366	-0.5	-14.4	1781.167	-15.0	-18.3	106.660	8.9	2.7	113.814	9.7	2.6
	3	1497.266	13.9	-10.8	1849.651	16.3	-13.7	108.353	6.5	4.8	114.633	2.9	2.5
	4	1578.344	23.5	-0.1	1925.207	17.4	-6.5	110.114	6.7	6.5	115.274	2.3	2.8
2010	1	1606.189	7.2	10.7	1982.954	12.5	6.9	111.359	4.6	6.7	115.224	-0.2	3.6
	2	1645.013	10.0	13.5	2082.438	21.6	16.9	110.884	-1.7	4.0	116.104	3.1	2.0
	3	1684.844	10.0	12.5	2143.545	12.3	15.9	111.522	2.3	2.9	116.813	2.5	1.9
	4	1716.819	7.8	8.8	2131.023	-2.3	10.7	112.320	2.9	2.0	116.831	0.1	1.4
2011	1	1749.573	7.9	8.9	2173.924	8.3	9.6	112.819	1.8	1.3	117.559	2.5	2.0
	2	1775.291	6.0	7.9	2181.008	1.3	4.7						

		Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
		Thousands	Change	Percent change		Thousands	Change	Percent change		Index	Percent change		
				Annual rate	Year ago			Annual rate	Year ago		Monthly rate	Annual rate	Year ago
2006		144418	2708		1.9	136092	2397		1.8	105.8			2.9
2007		146049	1631		1.1	137587	1496		1.1	107.3			1.4
2008		145369	-680		-0.5	136778	-809		-0.6	105.9			-1.2
2009		139886	-5483		-3.8	130789	-5989		-4.4	98.7			-6.8
2010		139069	-818		-0.6	129822	-967		-0.7	98.8			0.1
2009	1	141570	-2487	-6.7	-3.2	132814	-2249	-6.5	-3.7	100.8	-2.6	-10.0	-6.1
	2	140330	-1240	-3.5	-3.8	130956	-1857	-5.5	-4.7	98.6	-2.2	-8.7	-7.8
	3	139331	-999	-2.8	-4.1	129960	-996	-3.0	-4.9	97.8	-0.8	-3.1	-7.6
	4	138314	-1017	-2.9	-4.0	129425	-535	-1.6	-4.2	97.5	-0.3	-1.2	-5.8
2010	1	138720	406	1.2	-2.0	129322	-103	-0.3	-2.6	97.9	0.4	1.5	-2.9
	2	139276	555	1.6	-0.8	129956	635	2.0	-0.8	98.6	0.8	3.2	0.1
	3	139212	-64	-0.2	-0.1	129883	-73	-0.2	-0.1	99.1	0.5	1.9	1.3
	4	139066	-146	-0.4	0.5	130128	245	0.8	0.5	99.5	0.4	1.6	2.1
2011	1	139587	520	1.5	0.6	130549	422	1.3	0.9	100.0	0.5	2.2	2.2
	2	139596	9	0.0	0.2	130997	447	1.4	0.8	100.7	0.7	2.8	2.1
2009	Jun	139978	-314	-2.7	-3.9	130493	-502	-4.5	-4.9	98.0	-0.7	-8.2	-8.1
	Jul	139794	-184	-1.6	-3.9	130193	-300	-2.7	-5.0	98.1	0.1	1.2	-7.5
	Aug	139409	-385	-3.3	-4.0	129962	-231	-2.1	-5.0	97.9	-0.2	-2.4	-7.7
	Sep	138791	-618	-5.2	-4.3	129726	-236	-2.2	-4.8	97.4	-0.5	-6.0	-7.6
	Oct	138393	-398	-3.4	-4.4	129505	-221	-2.0	-4.6	97.2	-0.2	-2.4	-7.1
	Nov	138590	197	1.7	-3.8	129450	-55	-0.5	-4.1	97.7	0.5	6.4	-5.6
	Dec	137960	-630	-5.3	-3.7	129320	-130	-1.2	-3.8	97.6	-0.1	-1.2	-4.8
2010	Jan	138511	551	4.9	-2.6	129281	-39	-0.4	-3.2	97.9	0.3	3.8	-3.7
	Feb	138698	187	1.6	-2.1	129246	-35	-0.3	-2.7	97.6	-0.3	-3.6	-3.5
	Mar	138952	254	2.2	-1.3	129438	192	1.8	-2.0	98.1	0.5	6.3	-1.6
	Apr	139382	430	3.8	-1.0	129715	277	2.6	-1.3	98.6	0.5	6.3	-0.4
	May	139353	-29	-0.2	-0.7	130173	458	4.3	-0.6	98.6	0.0	0.0	-0.1
	Jun	139092	-261	-2.2	-0.6	129981	-192	-1.8	-0.4	98.7	0.1	1.2	0.7
	Jul	138991	-101	-0.9	-0.6	129932	-49	-0.5	-0.2	99.0	0.3	3.7	0.9
	Aug	139267	276	2.4	-0.1	129873	-59	-0.5	-0.1	99.1	0.1	1.2	1.2
	Sep	139378	111	1.0	0.4	129844	-29	-0.3	0.1	99.2	0.1	1.2	1.8
	Oct	139084	-294	-2.5	0.5	130015	171	1.6	0.4	99.4	0.2	2.4	2.3
	Nov	138909	-175	-1.5	0.2	130108	93	0.9	0.5	99.5	0.1	1.2	1.8
	Dec	139206	297	2.6	0.9	130260	152	1.4	0.7	99.6	0.1	1.2	2.0
2011	Jan	139323	117	1.0	0.6	130328	68	0.6	0.8	99.4	-0.2	-2.4	1.5
	Feb	139573	250	2.2	0.6	130563	235	2.2	1.0	100.2	0.8	10.1	2.7
	Mar	139864	291	2.5	0.7	130757	194	1.8	1.0	100.5	0.3	3.7	2.4
	Apr	139674	-190	-1.6	0.2	130974	217	2.0	1.0	100.7	0.2	2.4	2.1
	May	139779	105	0.9	0.3	130999	25	0.2	0.6	100.7	0.0	0.0	2.1
	Jun	139334	-445	-3.8	0.2	131017	18	0.2	0.8	100.8	0.1	1.2	2.1

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields	
			Billions of dollars	Percent change			Index	Percent change			(Percent)	
				Monthly/ quarterly	Annual rate	Year ago		Monthly/ quarterly	Annual rate	Year ago	3-mo	10-yr
2006		4.6	4310.458			5.4	97.4062			2.2	4.73	4.79
2007		4.6	4454.439			3.3	100.0000			2.7	4.35	4.63
2008		5.8	4401.327			-1.2	96.2907			-3.7	1.37	3.67
2009		9.3	4093.193			-7.0	85.5452			-11.2	0.15	3.26
2010		9.6	4354.093			6.4	90.0658			5.3	0.14	3.21
2009	1	8.2	1009.353	-2.0	-7.8	-10.1	86.6582	-5.1	-18.9	-13.5	0.21	2.74
	2	9.3	1010.378	0.1	0.4	-10.6	84.0560	-3.0	-11.5	-14.6	0.17	3.31
	3	9.7	1031.826	2.1	8.8	-7.7	85.1501	1.3	5.3	-10.6	0.16	3.52
	4	10.0	1041.636	1.0	3.9	1.1	86.3166	1.4	5.6	-5.5	0.06	3.46
2010	1	9.7	1063.065	2.1	8.5	5.3	88.0179	2.0	8.1	1.6	0.11	3.72
	2	9.6	1079.861	1.6	6.5	6.9	89.5349	1.7	7.1	6.5	0.15	3.49
	3	9.6	1089.281	0.9	3.5	5.6	91.0081	1.6	6.7	6.9	0.16	2.79
	4	9.6	1121.886	3.0	12.5	7.7	91.7023	0.8	3.1	6.2	0.14	2.86
2011	1	8.9	1150.261	2.5	10.5	8.2	92.7886	1.2	4.8	5.4	0.13	3.46
	2	9.1	1162.749	1.1	4.4	7.7	92.9735	0.2	0.8	3.8	0.05	3.21
2009	Jul	9.5	341.025	0.1	0.8	-9.2	84.4347	1.1	13.9	-13.6	0.18	3.56
	Aug	9.7	349.245	2.4	33.1	-6.6	85.2174	0.9	11.7	-11.3	0.17	3.59
	Sep	9.8	341.556	-2.2	-23.4	-7.2	85.7983	0.7	8.5	-6.8	0.12	3.40
	Oct	10.1	343.807	0.7	8.2	-2.8	86.0163	0.3	3.1	-7.4	0.07	3.39
	Nov	9.9	348.049	1.2	15.9	1.6	86.2137	0.2	2.8	-6.0	0.05	3.40
	Dec	9.9	349.780	0.5	6.1	4.8	86.7197	0.6	7.3	-2.9	0.05	3.59
2010	Jan	9.7	351.079	0.4	4.5	3.6	87.7492	1.2	15.2	0.3	0.06	3.73
	Feb	9.7	352.109	0.3	3.6	4.2	87.9129	0.2	2.3	1.1	0.11	3.69
	Mar	9.7	359.877	2.2	29.9	8.2	88.3915	0.5	6.7	3.3	0.15	3.73
	Apr	9.8	361.735	0.5	6.4	8.5	88.7051	0.4	4.3	4.6	0.16	3.85
	May	9.6	359.262	-0.7	-7.9	6.9	89.9025	1.3	17.5	7.2	0.16	3.42
	Jun	9.5	358.864	-0.1	-1.3	5.3	89.9970	0.1	1.3	7.7	0.12	3.20
	Jul	9.5	359.532	0.2	2.3	5.4	90.7919	0.9	11.1	7.5	0.16	3.01
	Aug	9.6	363.025	1.0	12.3	3.9	90.9898	0.2	2.6	6.8	0.16	2.70
	Sep	9.6	366.724	1.0	12.9	7.4	91.2427	0.3	3.4	6.3	0.15	2.65
	Oct	9.7	371.404	1.3	16.4	8.0	91.1385	-0.1	-1.4	6.0	0.13	2.54
	Nov	9.8	374.159	0.7	9.3	7.5	91.4039	0.3	3.6	6.0	0.14	2.76
	Dec	9.4	376.323	0.6	7.2	7.6	92.5646	1.3	16.3	6.7	0.14	3.29
2011	Jan	9.0	379.257	0.8	9.8	8.0	92.7949	0.2	3.0	5.8	0.15	3.39
	Feb	8.9	384.044	1.3	16.2	9.1	92.4766	-0.3	-4.0	5.2	0.13	3.58
	Mar	8.8	386.960	0.8	9.5	7.5	93.0943	0.7	8.3	5.3	0.10	3.41
	Apr	9.0	387.705	0.2	2.3	7.2	92.9605	-0.1	-1.7	4.8	0.06	3.46
	May	9.1	387.255	-0.1	-1.4	7.8	92.8900	-0.1	-0.9	3.3	0.04	3.17
	Jun	9.2	387.789	0.1	1.7	8.1	93.0700	0.2	2.4	3.4	0.04	3.00
	Jul										0.04	3.00

		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
2006		201.558			3.2		205.917			2.5		160.4			2.9
2007		207.337			2.9		210.728			2.3		166.6			3.9
2008		215.251			3.8		215.567			2.3		177.2			6.4
2009		214.548			-0.3		219.237			1.7		172.7			-2.5
2010		218.079			1.6		221.337			1.0		179.9			4.2
2009	1	212.451	-0.6	-2.4	-0.2	-2.4	217.710	0.4	1.6	1.7	1.6	170.3	-1.6	-6.4	-2.1
	2	213.468	0.5	1.9	-1.0	-0.3	218.916	0.6	2.2	1.8	1.9	171.6	0.8	3.2	-4.1
	3	215.419	0.9	3.7	-1.6	1.0	219.691	0.4	1.4	1.5	1.7	173.1	0.9	3.5	-5.2
	4	216.853	0.7	2.7	1.5	1.5	220.629	0.4	1.7	1.7	1.7	175.7	1.5	6.1	1.5
2010	1	217.544	0.3	1.3	2.4	1.3	220.603	-0.0	-0.0	1.3	-0.0	178.9	1.8	7.4	5.1
	2	217.270	-0.1	-0.5	1.8	0.4	221.053	0.2	0.8	1.0	0.4	179.0	0.1	0.3	4.3
	3	218.039	0.4	1.4	1.2	0.7	221.671	0.3	1.1	0.9	0.6	179.5	0.3	1.1	3.7
	4	219.465	0.7	2.6	1.2	1.2	222.021	0.2	0.6	0.6	0.6	182.3	1.6	6.5	3.8
2011	1	222.274	1.3	5.2	2.2	5.2	222.982	0.4	1.7	1.1	1.7	187.8	3.0	12.6	5.0
	2	224.514	1.0	4.1	3.3	4.7	224.363	0.6	2.5	1.5	2.1	191.3	1.9	7.7	6.9
2009	Jun	214.527	0.7	8.5	-1.2	3.1	219.228	0.1	1.8	1.7	2.2	173.9	1.9	25.8	-4.3
	Jul	214.782	0.1	1.4	-2.0	2.8	219.427	0.1	1.1	1.5	2.0	171.7	-1.3	-14.2	-6.6
	Aug	215.519	0.3	4.2	-1.5	3.0	219.625	0.1	1.1	1.4	1.9	174.1	1.4	18.1	-4.3
	Sep	215.956	0.2	2.5	-1.3	2.9	220.020	0.2	2.2	1.5	1.9	173.5	-0.3	-4.1	-4.8
	Oct	216.445	0.2	2.8	-0.2	2.9	220.489	0.2	2.6	1.7	2.0	173.9	0.2	2.8	-2.0
	Nov	216.956	0.2	2.9	1.9	2.9	220.616	0.1	0.7	1.7	1.9	176.3	1.4	17.9	2.3
	Dec	217.158	0.1	1.1	2.8	2.8	220.783	0.1	0.9	1.8	1.8	176.9	0.3	4.2	4.4
2010	Jan	217.458	0.1	1.7	2.6	1.7	220.494	-0.1	-1.6	1.5	-1.6	178.9	1.1	14.4	4.7
	Feb	217.562	0.0	0.6	2.2	1.1	220.619	0.1	0.7	1.3	-0.4	178.2	-0.4	-4.6	4.4
	Mar	217.611	0.0	0.3	2.4	0.8	220.695	0.0	0.4	1.2	-0.2	179.5	0.7	9.1	6.0
	Apr	217.625	0.0	0.1	2.3	0.6	220.786	0.0	0.5	1.0	0.0	179.4	-0.1	-0.7	5.3
	May	217.320	-0.1	-1.7	2.0	0.2	221.041	0.1	1.4	1.0	0.3	179.1	-0.2	-2.0	5.0
	Jun	216.865	-0.2	-2.5	1.1	-0.3	221.331	0.1	1.6	1.0	0.5	178.5	-0.3	-3.9	2.6
	Jul	217.621	0.3	4.3	1.3	0.4	221.557	0.1	1.2	1.0	0.6	178.6	0.1	0.7	4.0
	Aug	218.068	0.2	2.5	1.2	0.6	221.691	0.1	0.7	0.9	0.6	179.7	0.6	7.6	3.2
	Sep	218.427	0.2	2.0	1.1	0.8	221.765	0.0	0.4	0.8	0.6	180.2	0.3	3.4	3.9
	Oct	218.970	0.2	3.0	1.2	1.0	221.795	0.0	0.2	0.6	0.6	181.2	0.6	6.9	4.2
	Nov	219.240	0.1	1.5	1.1	1.0	222.059	0.1	1.4	0.7	0.6	182.1	0.5	6.1	3.3
	Dec	220.186	0.4	5.3	1.4	1.4	222.210	0.1	0.8	0.6	0.6	183.7	0.9	11.1	3.8
2011	Jan	221.062	0.4	4.9	1.7	4.9	222.587	0.2	2.1	0.9	2.1	185.5	1.0	12.4	3.7
	Feb	222.270	0.5	6.8	2.2	5.8	223.029	0.2	2.4	1.1	2.2	188.2	1.5	18.9	5.6
	Mar	223.490	0.5	6.8	2.7	6.1	223.331	0.1	1.6	1.2	2.0	189.8	0.9	10.7	5.7
	Apr	224.433	0.4	5.2	3.1	5.9	223.745	0.2	2.2	1.3	2.1	191.3	0.8	9.9	6.6
	May	224.804	0.2	2.0	3.4	5.1	224.387	0.3	3.5	1.5	2.4	191.7	0.2	2.5	7.0
	Jun	224.304	-0.2	-2.6	3.4	3.8	224.958	0.3	3.1	1.6	2.5	191.0	-0.4	-4.3	7.0

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 (± 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/. 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 CCAj (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 (CCAdj)** 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).