



How Accurate Are Forecasts in a Recession?

Individual households and firms, as well as local, state, and federal governments, make economic decisions based on their view of the future. For a household, this may entail deciding whether to apply for a mortgage based on the expectation of having a job in the future. For a firm, a decision to invest in the building of a new plant rests on expected future demand for its products. Similarly, federal agencies make decisions about developing infrastructure based on expectations of future revenue.

Firms and government agencies (and, to a lesser extent, households) look to professional forecasters for advice on the future state of the economy. This essay looks at how a recessionary environment affects the accuracy of economic forecasts, which in turn affects economic decisionmaking.

Although there are numerous professional economic forecasting agencies, the Survey of Professional Forecasters (SPF) is a publicly available forecasting source that is commonly used and discussed in various media outlets. This discussion uses the mean of those forecasts as a proxy for professional forecasters in general.¹ In total, we review 26 years' worth of quarterly, 1-year-ahead mean SPF forecasts from 1981:Q3 through 2007:Q3. The subsequent forecast errors—ranging from 1982:Q3 through 2008:Q3—are constructed using the most recent and updated data. We use the squares of these errors as a measure of their accuracy.

The chart shows the squared forecast errors associated with the mean SPF forecast of U.S. gross domestic product (GDP) growth² and the unemployment rate. The shaded areas indicate U.S. recessions, as determined by the National Bureau of Economic Research. Over the time frame shown in the chart, on average, professional forecasters have tended to be less accurate when the U.S. economy was in recession.

During a recession, the mean squared errors (MSEs) associated with forecasts of GDP growth and the unem-

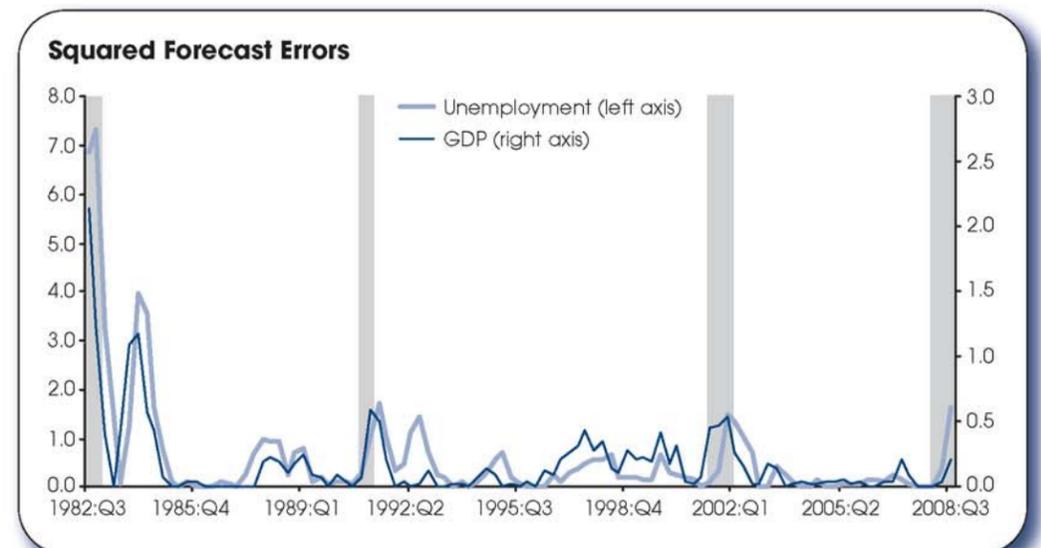
ployment rate are 0.58 and 1.95, respectively. In each case, the MSEs are four times larger than those made when the economy is not in a recession. Even if the very large errors during and immediately after the 1981 recession are omitted from the calculations, the MSEs are still roughly twice as large—a smaller but still significant difference.

One main contributor to the deterioration in the forecasts is an inability to detect turning points—that period when the economy shifts from being in a recession to not being in a recession—and vice versa. Another contributor is a clear bias in the forecasts during a recession. Forecasts of GDP growth and the unemployment rate both generally tend to be overly optimistic: Forecasts of GDP growth tend to be too high, whereas those for the unemployment rate tend to be too low. Perhaps not surprisingly, the degree of accuracy of the two series tends to move together; the correlation between the two series is roughly 80 percent. The unfortunate conclusion is that during a recession, economic decisions are not only more important, but also more difficult to make.

—Michael W. McCracken

¹ The SPF is available at www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/data-files/.

² The SPF predicts gross national product (GNP) through 1991 and GDP thereafter.



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

Page	
3	Economy at a Glance
4	Output and Growth
7	Interest Rates
8	Inflation and Prices
10	Labor Markets
12	Consumer Spending
14	Investment Spending
16	Government Revenues, Spending, and Debt
18	International Trade
20	Productivity and Profits
22	Quick Reference Tables
27	Notes and Sources

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.

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Notes

Pages 4, 5: Final Sales is gross domestic product (GDP) minus change in private inventories. **Advance, Preliminary, and Final 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 2000 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. The 30-year constant maturity series was discontinued by the Treasury Department as of Feb. 18, 2002. **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 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 $\%(C)$ 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.

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.

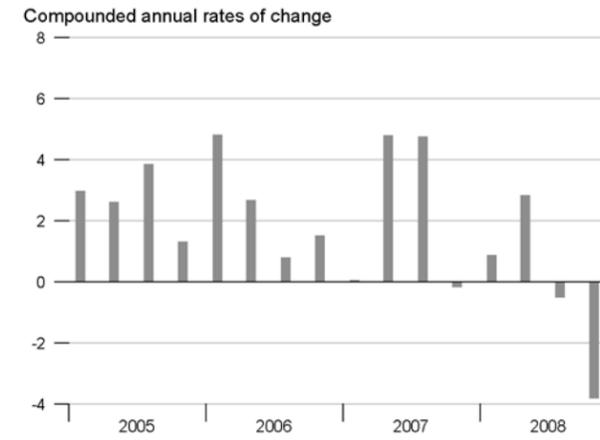
Federal Reserve Board
 Index of industrial production, treasury yields, exchange rates, capacity utilization, household debt.

The Survey Research Center, The University of Michigan
 Consumer sentiment index.

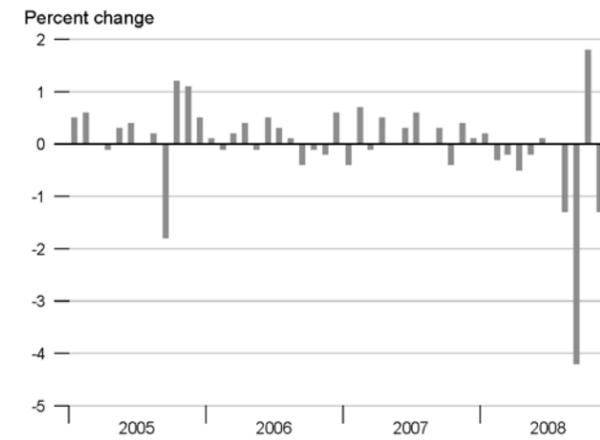
Organization for Economic Cooperation and Development (OECD)
 GDP for major trading partners (not available on FRED).

	Consumer Price Index					Consumer Price Index less Food and Energy					Producer Price Index Finished Goods				
	Index	Percent change				Index	Percent change				Index	Percent change			
		Monthly/quarterly	Annual rate	Year ago	Year to date		Monthly/quarterly	Annual rate	Year ago	Year to date		Monthly/quarterly	Annual rate	Year ago	Year to date
2004	188.908			2.7		196.633			1.8		148.5			3.6	
2005	195.283			3.4		200.875			2.2		155.7			4.9	
2006	201.583			3.2		205.933			2.5		160.3			3.0	
2007	207.345			2.9		210.731			2.3		166.6			3.9	
2008	215.233			3.8		215.571			2.3		177.1			6.3	
2006	1	199.433	0.4	1.8	3.7	1.8	203.667	0.6	2.5	2.1	2.5	159.6	0.1	0.6	4.5
	2	201.267	0.9	3.7	3.9	2.7	205.400	0.9	3.4	2.5	3.0	160.8	0.8	3.0	4.3
	3	203.200	1.0	3.9	3.3	3.1	206.867	0.7	2.9	2.8	2.9	161.1	0.2	0.8	2.8
	4	202.433	-0.4	-1.5	1.9	1.9	207.800	0.5	1.8	2.7	2.7	159.8	-0.8	-3.3	0.3
2007	1	204.269	0.9	3.7	2.4	3.7	208.975	0.6	2.3	2.6	2.3	162.7	1.9	7.6	2.0
	2	206.566	1.1	4.6	2.6	4.1	210.025	0.5	2.0	2.3	2.2	166.2	2.1	8.8	3.4
	3	207.989	0.7	2.8	2.4	3.7	211.309	0.6	2.5	2.1	2.3	166.9	0.4	1.6	3.6
	4	210.555	1.2	5.0	4.0	4.0	212.615	0.6	2.5	2.3	2.3	170.5	2.2	9.1	6.7
2008	1	212.796	1.1	4.3	4.2	4.3	213.931	0.6	2.5	2.4	2.5	174.3	2.2	9.2	7.1
	2	215.426	1.2	5.0	4.3	4.7	214.919	0.5	1.9	2.3	2.2	178.8	2.6	10.6	7.6
	3	218.958	1.6	6.7	5.3	5.4	216.612	0.8	3.2	2.5	2.5	182.6	2.1	8.7	9.4
	4	213.753	-2.4	-9.2	1.5	1.5	216.822	0.1	0.4	2.0	2.0	172.8	-5.3	-19.7	1.3
2006	Dec	203.300	0.6	7.4	2.6	2.6	208.100	0.2	2.3	2.6	2.6	161.1	0.6	7.8	1.1
2007	Jan	203.552	0.1	1.5	2.1	1.5	208.608	0.2	3.0	2.7	3.0	160.9	-0.1	-1.5	0.2
	Feb	204.158	0.3	3.6	2.4	2.6	209.085	0.2	2.8	2.7	2.9	162.9	1.2	16.0	2.6
	Mar	205.098	0.5	5.7	2.8	3.6	209.233	0.1	0.9	2.5	2.2	164.4	0.9	11.6	3.2
	Apr	205.751	0.3	3.9	2.6	3.7	209.650	0.2	2.4	2.4	2.3	165.5	0.7	8.3	3.2
	May	206.700	0.5	5.7	2.7	4.1	209.978	0.2	1.9	2.2	2.2	166.5	0.6	7.5	3.7
	Jun	207.246	0.3	3.2	2.6	3.9	210.446	0.2	2.7	2.2	2.3	166.6	0.1	0.7	3.2
	Jul	207.708	0.2	2.7	2.4	3.7	210.926	0.2	2.8	2.2	2.3	167.5	0.5	6.7	4.0
	Aug	207.749	0.0	0.2	1.9	3.3	211.265	0.2	1.9	2.1	2.3	166.1	-0.8	-9.6	2.3
	Sep	208.509	0.4	4.5	2.8	3.4	211.737	0.2	2.7	2.1	2.3	167.0	0.5	6.7	4.4
	Oct	209.055	0.3	3.2	3.5	3.4	212.115	0.2	2.2	2.2	2.3	167.9	0.5	6.7	6.2
	Nov	210.930	0.9	11.3	4.4	4.1	212.626	0.2	2.9	2.4	2.4	172.3	2.6	36.4	7.6
	Dec	211.680	0.4	4.4	4.1	4.1	213.103	0.2	2.7	2.4	2.4	171.4	-0.5	-6.1	6.4
2008	Jan	212.516	0.4	4.8	4.4	4.8	213.765	0.3	3.8	2.5	3.8	173.4	1.2	14.9	7.8
	Feb	212.571	0.0	0.3	4.1	2.6	213.851	0.0	0.5	2.3	2.1	174.0	0.3	4.2	6.8
	Mar	213.301	0.3	4.2	4.0	3.1	214.176	0.2	1.8	2.4	2.0	175.6	0.9	11.6	6.8
	Apr	213.743	0.2	2.5	3.9	3.0	214.398	0.1	1.3	2.3	1.8	176.1	0.3	3.5	6.4
	May	215.132	0.6	8.1	4.1	4.0	214.832	0.2	2.5	2.3	2.0	178.6	1.4	18.4	7.3
	Jun	217.403	1.1	13.4	4.9	5.5	215.526	0.3	3.9	2.4	2.3	181.7	1.7	22.9	9.1
	Jul	219.181	0.8	10.3	5.5	6.2	216.230	0.3	4.0	2.5	2.5	183.9	1.2	15.5	9.8
	Aug	218.880	-0.1	-1.6	5.4	5.1	216.650	0.2	2.4	2.5	2.5	182.3	-0.9	-10.0	9.8
	Sep	218.813	-0.0	-0.4	4.9	4.5	216.956	0.1	1.7	2.5	2.4	181.5	-0.4	-5.1	8.7
	Oct	216.710	-1.0	-10.9	3.7	2.9	216.801	-0.1	-0.9	2.2	2.1	176.5	-2.8	-28.5	5.1
	Nov	213.060	-1.7	-18.4	1.0	0.7	216.849	0.0	0.3	2.0	1.9	172.6	-2.2	-23.5	0.2
	Dec	211.490	-0.7	-8.5	-0.1	-0.1	216.816	-0.0	-0.2	1.7	1.7	169.3	-1.9	-20.7	-1.2

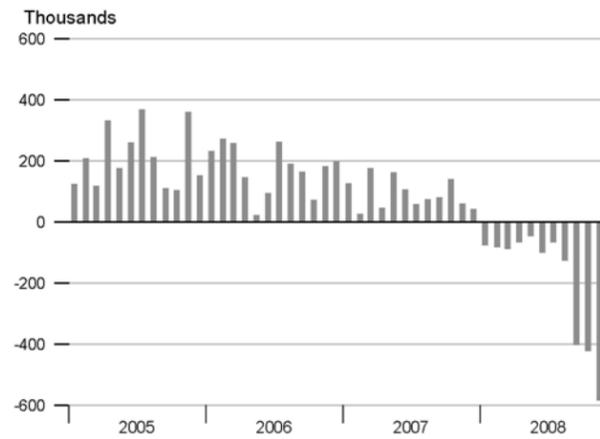
Real GDP Growth



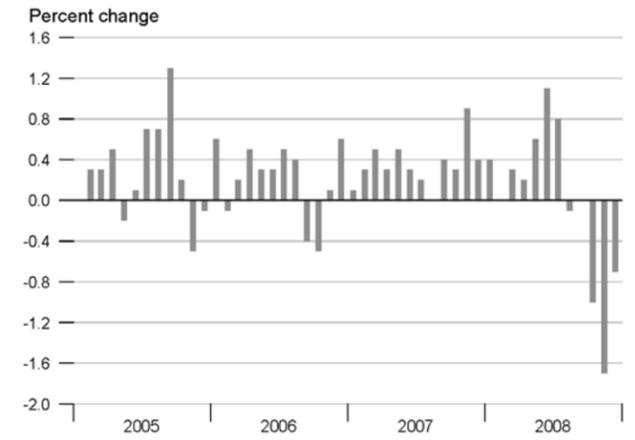
Industrial Production



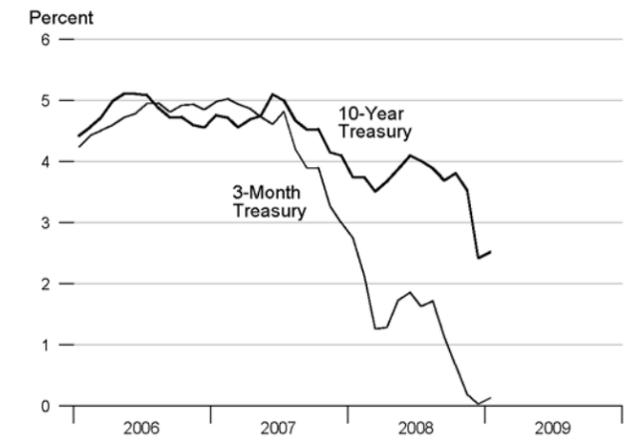
Change in Nonfarm Payrolls



Consumer Price Index



Interest Rates

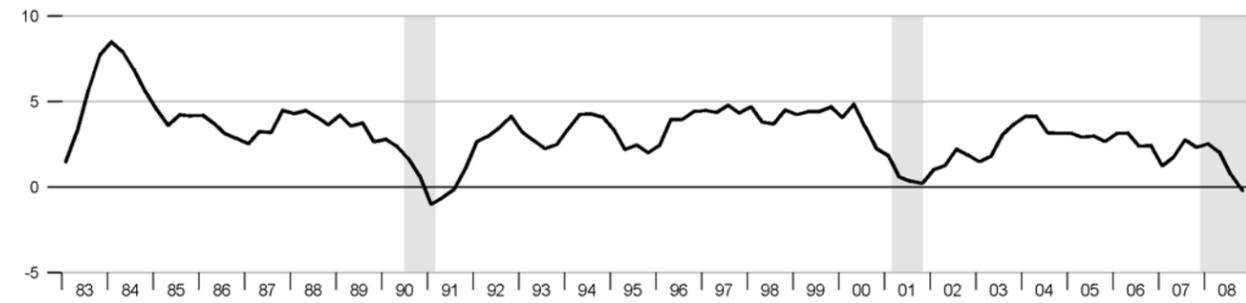


Unemployment Rate



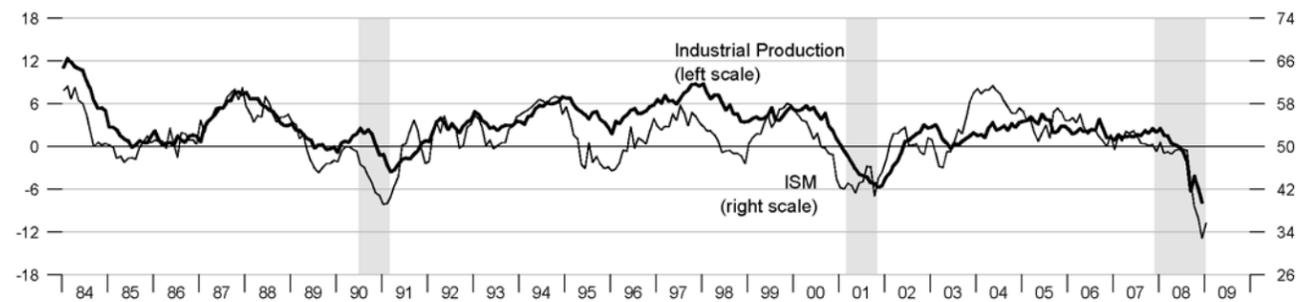
Real Gross Domestic Product

Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago



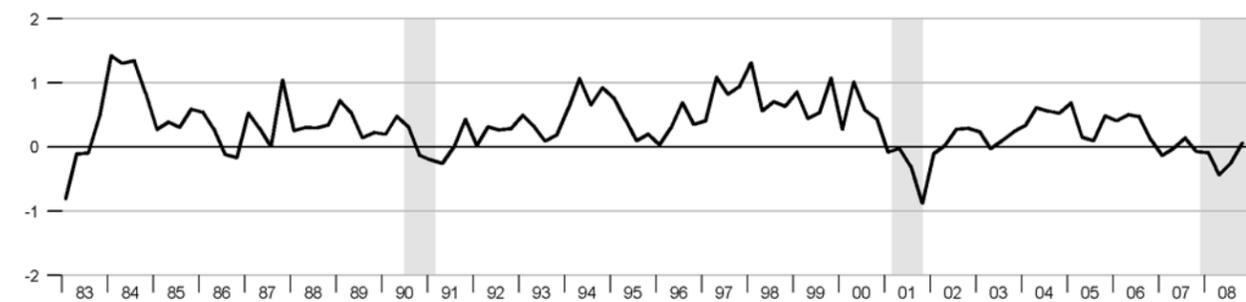
Aggregate Private Nonfarm Hours

Percent change from year ago



Real Change in Private Inventories

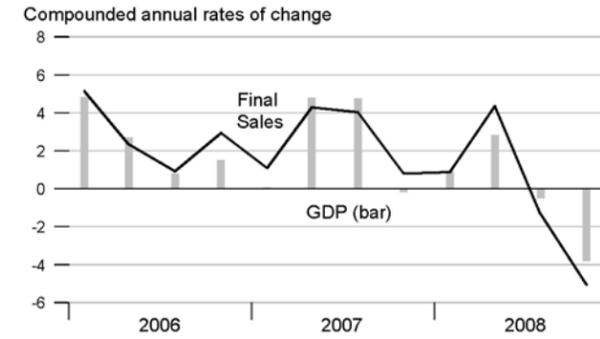
Percent of GDP



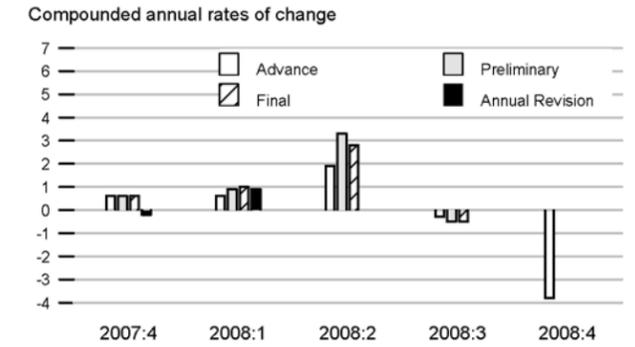
	Unempl. Rate	Retail and Food Services Sales			Industrial Production			Treasury Yields			
		Billions of dollars	Percent change		Index	Percent change		(Percent)			
			Monthly/quarterly	Annual rate	Year ago		Monthly/quarterly	Annual rate	Year ago	3-mo	10-yr
2004	5.5	3832.862			6.1	103.7644			2.5	1.37	4.27
2005	5.1	4078.592			6.4	107.2099			3.3	3.15	4.29
2006	4.6	4313.695			5.8	109.5711			2.2	4.73	4.79
2007	4.6	4495.885			4.2	111.3932			1.7	4.35	4.63
2008	5.8	4476.513			-0.4	109.4593			-1.7	1.37	3.67
2006	1	1070.109	3.1	13.0	7.6	108.8526	0.8	3.2	2.1	4.39	4.57
	2	1075.965	0.5	2.2	6.0	109.5473	0.6	2.6	2.2	4.70	5.07
	3	1082.149	0.6	2.3	5.0	110.0689	0.5	1.9	2.8	4.91	4.90
	4	1085.472	0.3	1.2	4.6	109.8155	-0.2	-0.9	1.7	4.90	4.63
2007	1	1105.203	1.8	7.5	3.3	110.2336	0.4	1.5	1.3	4.98	4.68
	2	1119.377	1.3	5.2	4.0	111.0922	0.8	3.2	1.4	4.74	4.85
	3	1126.927	0.7	2.7	4.1	112.0778	0.9	3.6	1.8	4.30	4.73
	4	1144.378	1.5	6.3	5.4	112.1693	0.1	0.3	2.1	3.39	4.26
2008	1	1138.145	-0.5	-2.2	3.0	112.2848	0.1	0.4	1.9	2.04	3.66
	2	1148.626	0.9	3.7	2.6	111.3146	-0.9	-3.4	0.2	1.63	3.89
	3	1133.577	-1.3	-5.1	0.6	108.7557	-2.3	-8.9	-3.0	1.49	3.86
	4	1056.165	-6.8	-24.6	-7.7	105.4819	-3.0	-11.5	-6.0	0.30	3.25
2007	Jan	365.610	0.1	0.9	2.1	109.7791	-0.4	-4.2	0.9	4.98	4.76
	Feb	368.271	0.7	9.1	3.6	110.5181	0.7	8.4	1.6	5.03	4.72
	Mar	371.322	0.8	10.4	4.1	110.4036	-0.1	-1.2	1.3	4.94	4.56
	Apr	370.568	-0.2	-2.4	3.1	110.9530	0.5	6.1	1.4	4.87	4.69
	May	376.206	1.5	19.9	5.0	110.9686	0.0	0.2	1.5	4.73	4.75
	Jun	372.603	-1.0	-10.9	4.0	111.3551	0.3	4.3	1.4	4.61	5.10
	Jul	374.270	0.4	5.5	3.7	112.0024	0.6	7.2	1.7	4.82	5.00
	Aug	374.253	-0.0	-0.1	3.4	111.9712	-0.0	-0.3	1.6	4.20	4.67
	Sep	378.404	1.1	14.2	5.3	112.2598	0.3	3.1	2.2	3.89	4.52
	Oct	379.623	0.3	3.9	5.5	111.8262	-0.4	-4.5	1.9	3.90	4.53
	Nov	384.163	1.2	15.3	6.6	112.2962	0.4	5.2	2.5	3.27	4.15
	Dec	380.592	-0.9	-10.6	4.2	112.3855	0.1	1.0	2.0	3.00	4.10
2008	Jan	380.019	-0.2	-1.8	3.9	112.5704	0.2	2.0	2.5	2.75	3.74
	Feb	378.106	-0.5	-5.9	2.7	112.2604	-0.3	-3.3	1.6	2.12	3.74
	Mar	380.020	0.5	6.2	2.3	112.0235	-0.2	-2.5	1.5	1.26	3.51
	Apr	380.788	0.2	2.5	2.8	111.4410	-0.5	-6.1	0.4	1.29	3.68
	May	383.769	0.8	9.8	2.0	111.2179	-0.2	-2.4	0.2	1.73	3.88
	Jun	384.069	0.1	0.9	3.1	111.2850	0.1	0.7	-0.1	1.86	4.10
	Jul	381.578	-0.6	-7.5	2.0	111.2376	-0.0	-0.5	-0.7	1.63	4.01
	Aug	378.966	-0.7	-7.9	1.3	109.8049	-1.3	-14.4	-1.9	1.72	3.89
	Sep	373.033	-1.6	-17.3	-1.4	105.2246	-4.2	-40.0	-6.3	1.13	3.69
	Oct	360.296	-3.4	-34.1	-5.1	107.1369	1.8	24.1	-4.2	0.67	3.81
	Nov	352.627	-2.1	-22.8	-8.2	105.7123	-1.3	-14.8	-5.9	0.19	3.53
	Dec	343.242	-2.7	-27.7	-9.8	103.5966	-2.0	-21.5	-7.8	0.03	2.42
2009	Jan									0.13	2.52

	Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
	Thousands	Change	Percent change		Thousands	Change	Percent change		Index	Monthly rate	Percent change	
			Annual rate	Year ago			Annual rate	Year ago			Annual rate	Year ago
2004	139240	1511		1.1	131419	1423		1.1	100.2			1.6
2005	141714	2474		1.8	133695	2276		1.7	102.8			2.6
2006	144420	2707		1.9	136092	2397		1.8	105.7			2.9
2007	146050	1629		1.1	137618	1527		1.1	107.2			1.4
2008	145368	-681		-0.5	137245	-373		-0.3	106.4			-0.8
2006	1	143422	792	2.2	135383	722	2.2	2.1	104.9	0.9	3.8	3.2
	2	144071	649	1.8	135840	457	1.4	1.9	105.6	0.7	2.7	3.1
	3	144566	495	1.4	136354	514	1.5	1.7	106.0	0.4	1.7	2.8
	4	145622	1056	3.0	136789	434	1.3	1.6	106.4	0.3	1.4	2.4
2007	1	146081	459	1.3	137184	395	1.2	1.3	106.6	0.2	0.8	1.6
	2	145873	-208	-0.6	137500	316	0.9	1.2	107.2	0.5	2.1	1.5
	3	145969	96	0.3	137758	259	0.8	1.0	107.5	0.3	1.1	1.4
	4	146275	306	0.8	138031	272	0.8	0.9	107.7	0.2	1.0	1.3
2008	1	146138	-137	-0.4	137917	-113	-0.3	0.5	107.4	-0.3	-1.1	0.8
	2	145990	-149	-0.4	137699	-218	-0.6	0.1	107.2	-0.2	-0.9	0.0
	3	145299	-690	-1.9	137331	-368	-1.1	-0.3	106.6	-0.6	-2.2	-0.8
	4	144046	-1253	-3.4	136033	-1298	-3.7	-1.4	104.5	-2.0	-7.7	-3.0
2006	Dec	145989	402	3.4	136982	199	1.8	1.6	106.7	0.5	5.8	2.4
2007	Jan	145983	-6	-0.0	137108	126	1.1	1.5	106.5	-0.2	-2.2	1.6
	Feb	145992	9	0.1	137133	25	0.2	1.3	106.2	-0.3	-3.3	1.3
	Mar	146267	275	2.3	137310	177	1.6	1.2	107.1	0.8	10.7	1.9
	Apr	145647	-620	-5.0	137356	46	0.4	1.2	106.8	-0.3	-3.3	1.1
	May	145915	268	2.2	137518	162	1.4	1.3	107.1	0.3	3.4	1.6
	Jun	146057	142	1.2	137625	107	0.9	1.3	107.6	0.5	5.7	1.7
	Jul	145972	-85	-0.7	137682	57	0.5	1.1	107.4	-0.2	-2.2	1.3
	Aug	145732	-240	-2.0	137756	74	0.6	1.0	107.4	0.0	0.0	1.1
	Sep	146203	471	3.9	137837	81	0.7	1.0	107.6	0.2	2.3	1.6
	Oct	145867	-336	-2.7	137977	140	1.2	1.0	107.7	0.1	1.1	1.3
	Nov	146665	798	6.8	138037	60	0.5	0.9	107.7	0.0	0.0	1.4
	Dec	146294	-371	-3.0	138078	41	0.4	0.8	107.8	0.1	1.1	1.0
2008	Jan	146317	23	0.2	138002	-76	-0.7	0.7	107.4	-0.4	-4.4	0.8
	Feb	146075	-242	-2.0	137919	-83	-0.7	0.6	107.3	-0.1	-1.1	1.0
	Mar	146023	-52	-0.4	137831	-88	-0.8	0.4	107.6	0.3	3.4	0.5
	Apr	146257	234	1.9	137764	-67	-0.6	0.3	107.5	-0.1	-1.1	0.7
	May	145974	-283	-2.3	137717	-47	-0.4	0.1	107.1	-0.4	-4.4	0.0
	Jun	145738	-236	-1.9	137617	-100	-0.9	-0.0	107.0	-0.1	-1.1	-0.6
	Jul	145596	-142	-1.2	137550	-67	-0.6	-0.1	106.9	-0.1	-1.1	-0.5
	Aug	145273	-323	-2.6	137423	-127	-1.1	-0.2	106.8	-0.1	-1.1	-0.6
	Sep	145029	-244	-2.0	137020	-403	-3.5	-0.6	106.1	-0.7	-7.6	-1.4
	Oct	144657	-372	-3.0	136597	-423	-3.6	-1.0	105.3	-0.8	-8.7	-2.2
	Nov	144144	-513	-4.2	136013	-584	-5.0	-1.5	104.7	-0.6	-6.6	-2.8
	Dec	143338	-806	-6.5	135489	-524	-4.5	-1.9	103.5	-1.1	-12.9	-4.0

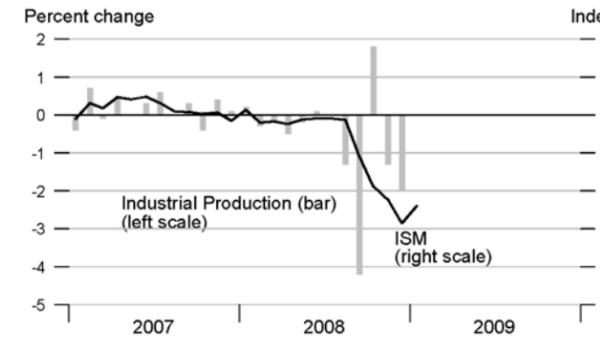
Real Final Sales and GDP



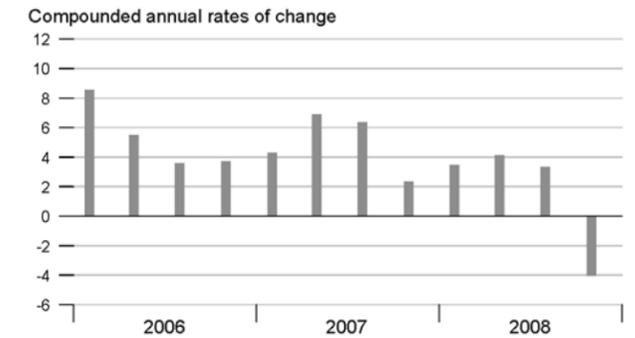
Real GDP Revisions



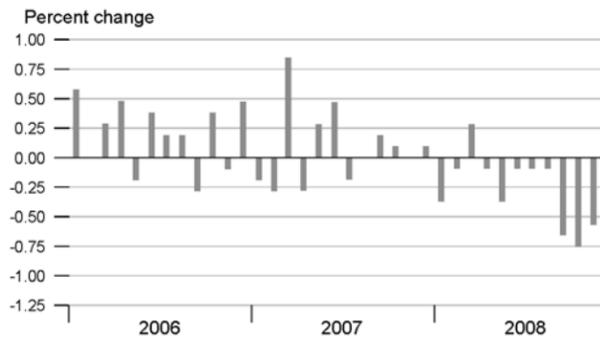
Industrial Production and ISM Index



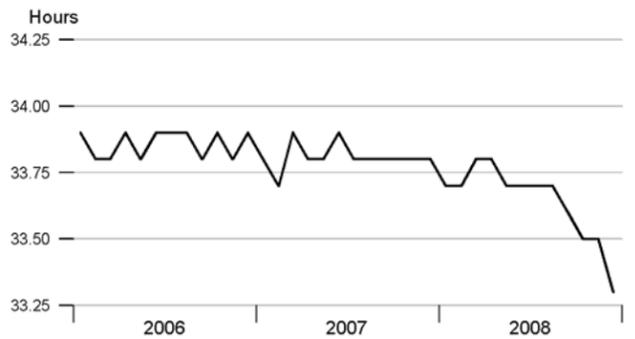
Nominal Gross Domestic Product



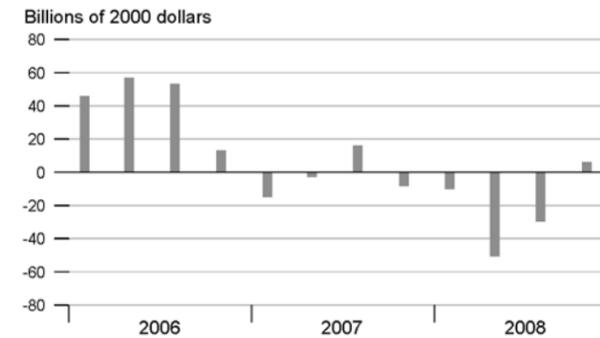
Aggregate Private Nonfarm Hours



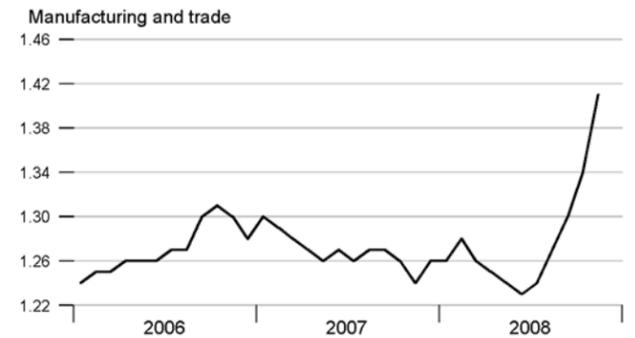
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

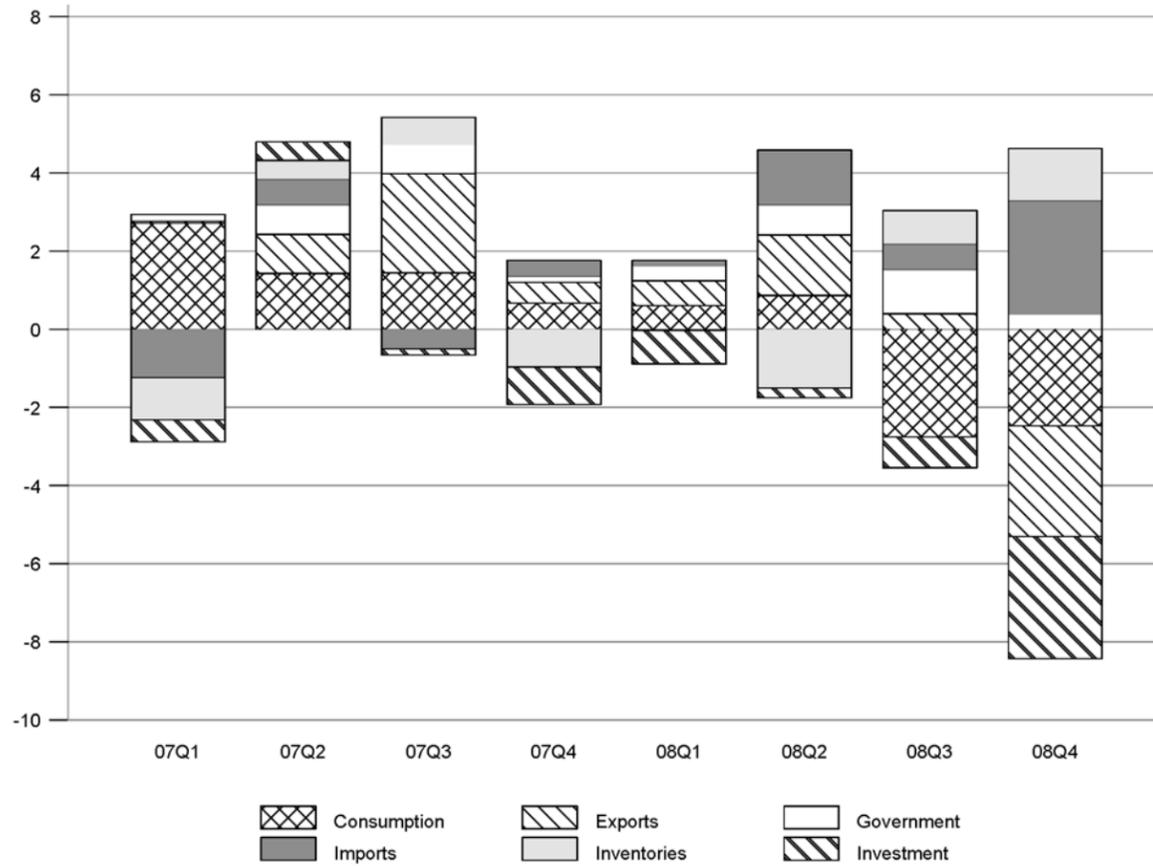


Inventory-Sales Ratio



Contribution of Components to Real GDP Growth

Percentage points at compounded annual rates



Contributions to Real GDP Growth Rate

	2007				2008			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Final Sales	1.11	4.32	4.07	0.79	0.89	4.33	-1.35	-5.12
Consumption	2.71	1.42	1.44	0.67	0.61	0.87	-2.75	-2.47
Fixed Investment	-0.57	0.47	-0.15	-0.97	-0.86	-0.25	-0.79	-3.12
Nonresidential	0.33	1.07	0.91	0.36	0.26	0.27	-0.19	-2.26
Residential	-0.91	-0.60	-1.06	-1.33	-1.12	-0.52	-0.60	-0.85
Government	0.17	0.77	0.75	0.16	0.38	0.78	1.14	0.38
Federal	-0.26	0.47	0.51	-0.04	0.41	0.47	0.97	0.44
State and Local	0.43	0.30	0.24	0.19	-0.03	0.31	0.17	-0.06
Net Exports	-1.20	1.66	2.03	0.94	0.77	2.93	1.05	0.09
Exports	0.06	1.01	2.54	0.53	0.63	1.54	0.40	-2.84
Imports	-1.25	0.65	-0.51	0.40	0.14	1.39	0.65	2.93
Change in Inventory	-1.06	0.47	0.69	-0.96	-0.02	-1.50	0.84	1.32
Residual	-0.24	-0.15	-0.24	-0.34	-0.10	0.02	0.28	0.51
Real GDP Growth	0.05	4.79	4.76	-0.17	0.87	2.83	-0.51	-3.80

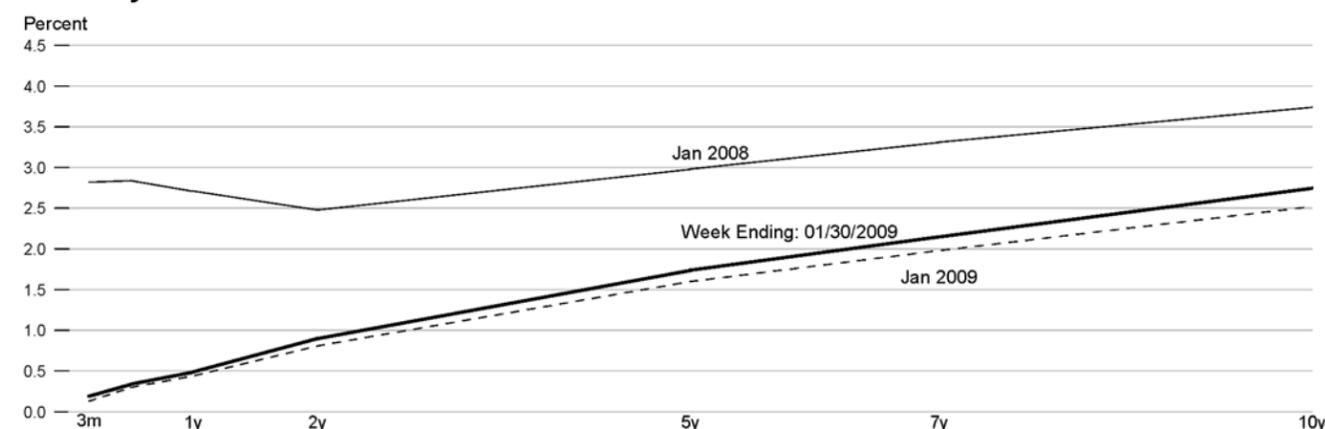
	GDP Chain Price Index			Employment Cost Index			ECI: Wages			ECI: Benefits		
	Index	Percent change		Index	Percent change		Index	Percent change		Index	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
2005	113.039		3.3	99.2		3.1	99.2		2.5	99.2		4.6
2006	116.676		3.2	102.1		2.9	102.1		2.9	102.1		2.9
2007	119.819		2.7	105.2		3.1	105.5		3.4	104.5		2.4
2008	122.453		2.2	108.2		2.9	108.7		3.0	107.2		2.5
2005 1	111.778	4.0	3.3	98.2	3.8	3.5	98.3	2.5	2.6	98.0	6.4	5.5
2005 2	112.357	2.1	2.9	98.8	2.5	3.1	98.8	2.1	2.5	98.8	3.3	4.7
2005 3	113.487	4.1	3.4	99.5	2.9	2.9	99.4	2.5	2.3	99.7	3.7	4.5
2005 4	114.536	3.7	3.5	100.2	2.8	3.0	100.1	2.8	2.5	100.3	2.4	3.9
2006 1	115.536	3.5	3.4	100.8	2.4	2.6	100.8	2.8	2.5	100.8	2.0	2.9
2006 2	116.317	2.7	3.5	101.6	3.2	2.8	101.6	3.2	2.8	101.6	3.2	2.8
2006 3	117.109	2.8	3.2	102.5	3.6	3.0	102.5	3.6	3.1	102.5	3.6	2.8
2006 4	117.742	2.2	2.8	103.3	3.2	3.1	103.3	3.2	3.2	103.4	3.6	3.1
2007 1	118.935	4.1	2.9	104.0	2.7	3.2	104.3	3.9	3.5	103.1	-1.2	2.3
2007 2	119.531	2.0	2.8	104.8	3.1	3.1	105.1	3.1	3.4	104.2	4.3	2.6
2007 3	119.984	1.5	2.5	105.6	3.1	3.0	105.9	3.1	3.3	105.0	3.1	2.4
2007 4	120.826	2.8	2.6	106.5	3.5	3.1	106.7	3.1	3.3	105.8	3.1	2.3
2008 1	121.613	2.6	2.3	107.3	3.0	3.2	107.6	3.4	3.2	106.4	2.3	3.2
2008 2	121.951	1.1	2.0	107.9	2.3	3.0	108.4	3.0	3.1	106.9	1.9	2.6
2008 3	123.134	3.9	2.6	108.6	2.6	2.8	109.0	2.2	2.9	107.5	2.3	2.4
2008 4	123.113	-0.1	1.9	109.1	1.9	2.4	109.6	2.2	2.7	107.9	1.5	2.0
	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
	Percent change			Percent change			Percent change			Percent change		
	Billions of 2000 \$	Annual rate	Year ago	Billions of 2000 \$	Annual rate	Year ago	Index	Annual rate	Year ago	Index	Annual rate	Year ago
2005	1205.274		7.0	1821.900		5.9	133.887		1.8	162.179		4.0
2006	1314.848		9.1	1930.515		6.0	135.180		1.0	168.367		3.8
2007	1425.912		8.4	1972.412		2.2	137.081		1.4	175.290		4.1
2008	1518.564		6.5	1906.748		-3.3						
2005 1	1177.922	8.1	6.9	1801.652	3.2	9.1	133.301	3.2	2.3	160.015	2.8	4.6
2005 2	1203.137	8.8	7.5	1804.427	0.6	5.5	133.394	0.3	1.3	160.775	1.9	3.9
2005 3	1204.299	0.4	6.8	1807.939	0.8	4.5	134.616	3.7	1.9	163.199	6.2	4.0
2005 4	1235.740	10.9	7.0	1873.551	15.3	4.8	134.232	-1.1	1.5	164.677	3.7	3.6
2006 1	1284.261	16.7	9.0	1920.229	10.3	6.6	135.071	2.5	1.3	166.793	5.2	4.2
2006 2	1301.418	5.5	8.2	1920.864	0.1	6.5	135.672	1.8	1.7	167.081	0.7	3.9
2006 3	1312.622	3.5	9.0	1935.666	3.1	7.1	134.957	-2.1	0.3	167.887	1.9	2.9
2006 4	1361.067	15.6	10.1	1945.317	2.0	3.8	135.021	0.2	0.6	171.676	9.3	4.3
2007 1	1363.150	0.6	6.1	1981.783	7.7	3.2	135.013	-0.0	-0.0	173.744	4.9	4.2
2007 2	1392.190	8.8	7.0	1963.366	-3.7	2.2	136.384	4.1	0.5	174.098	0.8	4.2
2007 3	1466.244	23.0	11.7	1978.005	3.0	2.2	138.320	5.8	2.5	175.505	3.3	4.5
2007 4	1482.053	4.4	8.9	1966.509	-2.3	1.1	138.606	0.8	2.7	177.806	5.3	3.6
2008 1	1500.591	5.1	10.1	1962.628	-0.8	-1.0	139.511	2.6	3.3	179.486	3.8	3.3
2008 2	1544.749	12.3	11.0	1926.000	-7.3	-1.9	140.757	3.6	3.2	179.894	0.9	3.3
2008 3	1556.096	3.0	6.1	1909.146	-3.5	-3.5	141.207	1.3	2.1	181.721	4.1	3.5
2008 4	1472.822	-19.7	-0.6	1829.219	-15.7	-7.0						

	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories			
	Billions of \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Year/Year ago		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr			
2005	12421.9	6.3		10989.508	2.9		10947.255	3.1		38.946			
2006	13178.4	6.1		11294.816	2.8		11249.341	2.8		42.301			
2007	13807.5	4.8		11523.944	2.0		11523.416	2.4		-2.480			
2008	14280.7	3.4		11671.296	1.3		11689.954	1.4		-21.039			
2005	1	12155.4	7.1	6.6	10875.827	3.0	3.2	10799.286	2.3	2.8	74.596	64.179	
	2	12297.5	4.8	5.9	10946.117	2.6	2.9	10925.879	4.8	3.4	16.724	52.139	
	3	12538.2	8.1	6.4	11049.980	3.8	3.0	11035.489	4.1	3.5	11.001	39.875	
	4	12696.4	5.1	6.3	11086.107	1.3	2.7	11028.364	-0.3	2.7	53.464	38.946	
2006	1	12959.6	8.6	6.6	11217.261	4.8	3.1	11167.646	5.1	3.4	45.924	31.778	
	2	13134.1	5.5	6.8	11291.674	2.7	3.2	11232.065	2.3	2.8	56.922	41.828	
	3	13249.6	3.6	5.7	11314.057	0.8	2.4	11257.833	0.9	2.0	53.270	52.395	
	4	13370.1	3.7	5.3	11356.368	1.5	2.4	11339.723	2.9	2.8	13.086	42.301	
2007	1	13510.9	4.3	4.3	11357.840	0.1	1.3	11370.469	1.1	1.8	-15.044	27.059	
	2	13737.5	6.9	4.6	11491.351	4.8	1.8	11490.523	4.3	2.3	-2.821	12.123	
	3	13950.6	6.4	5.3	11625.746	4.8	2.8	11605.013	4.0	3.1	16.001	2.806	
	4	14031.2	2.3	4.9	11620.739	-0.2	2.3	11627.950	0.8	2.5	-8.058	-2.481	
2008	1	14150.8	3.5	4.7	11645.968	0.9	2.5	11653.718	0.9	2.5	-10.182	-1.265	
	2	14294.5	4.1	4.1	11727.351	2.8	2.1	11778.847	4.4	2.5	-50.550	-13.197	
	3	14412.8	3.4	3.3	11712.429	-0.5	0.7	11739.220	-1.3	1.2	-29.588	-24.595	
	4	14264.6	-4.1	1.7	11599.436	-3.8	-0.2	11588.030	-5.1	-0.3	6.165	-21.039	
	Consumption			Durables Consumption			Private Fixed Investment			Nonresidential Fixed Investment			
	Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	
2005	7791.732	3.0		1134.384	4.6		1829.815	6.8		1226.160	7.2		
2006	8028.958	3.0		1185.122	4.5		1865.493	1.9		1318.159	7.5		
2007	8252.773	2.8		1242.395	4.8		1808.543	-3.1		1382.929	4.9		
2008	8276.209	0.3		1188.269	-4.4		1721.198	-4.8		1408.202	1.8		
2005	1	7697.515	1.7	3.0	1111.627	0.6	4.3	1790.510	5.3	8.7	1200.397	3.7	9.2
	2	7766.392	3.6	3.3	1143.717	12.1	6.8	1823.502	7.6	7.3	1218.952	6.3	8.1
	3	7838.099	3.7	3.3	1158.894	5.4	6.2	1847.243	5.3	6.4	1237.089	6.1	6.6
	4	7864.922	1.4	2.6	1123.291	-11.7	1.2	1857.972	2.3	5.1	1248.226	3.6	4.9
2006	1	7947.412	4.3	3.2	1173.061	18.9	5.5	1895.228	8.3	5.8	1295.218	15.9	7.9
	2	8002.135	2.8	3.0	1178.310	1.8	3.0	1883.072	-2.5	3.3	1315.436	6.4	7.9
	3	8046.346	2.2	2.7	1188.386	3.5	2.5	1859.953	-4.8	0.7	1332.661	5.3	7.7
	4	8119.940	3.7	3.2	1200.722	4.2	6.9	1823.721	-7.6	-1.8	1329.322	-1.0	6.5
2007	1	8197.173	3.9	3.1	1227.322	9.2	4.6	1807.821	-3.4	-4.6	1340.423	3.4	3.5
	2	8237.272	2.0	2.9	1242.274	5.0	5.4	1821.269	3.0	-3.3	1373.787	10.3	4.4
	3	8278.517	2.0	2.9	1249.405	2.3	5.1	1816.954	-0.9	-2.3	1402.876	8.7	5.3
	4	8298.196	1.0	2.2	1250.580	0.4	4.2	1788.160	-6.2	-1.9	1414.655	3.4	6.4
2008	1	8316.055	0.9	1.5	1237.008	-4.3	0.8	1762.404	-5.6	-2.5	1423.095	2.4	6.2
	2	8341.328	1.2	1.3	1228.280	-2.8	-1.1	1754.899	-1.7	-3.6	1431.818	2.5	4.2
	3	8260.590	-3.8	-0.2	1180.123	-14.8	-5.5	1731.058	-5.3	-4.7	1425.682	-1.7	1.6
	4	8186.862	-3.5	-1.3	1107.665	-22.4	-11.4	1636.431	-20.1	-8.5	1352.214	-19.1	-4.4

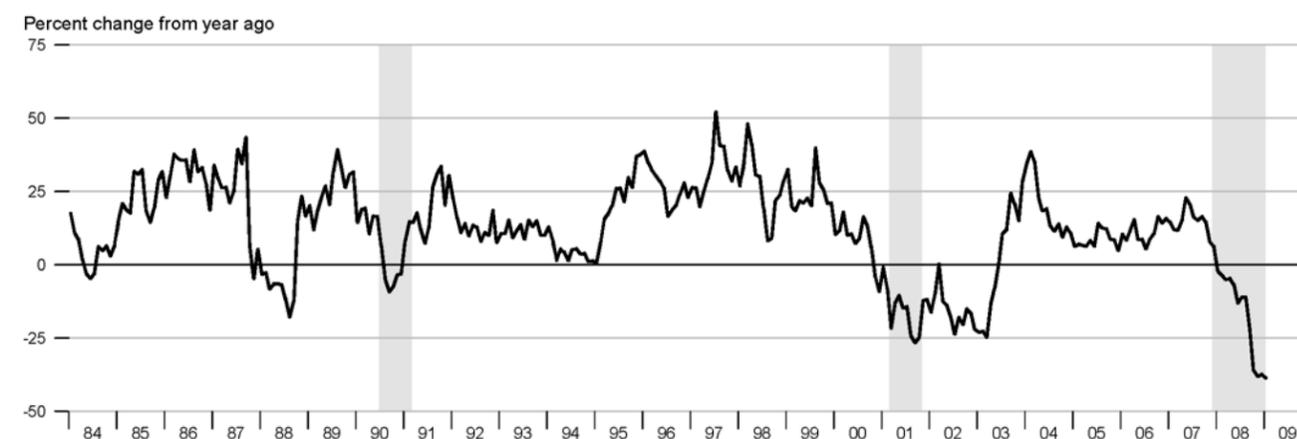
Interest Rates



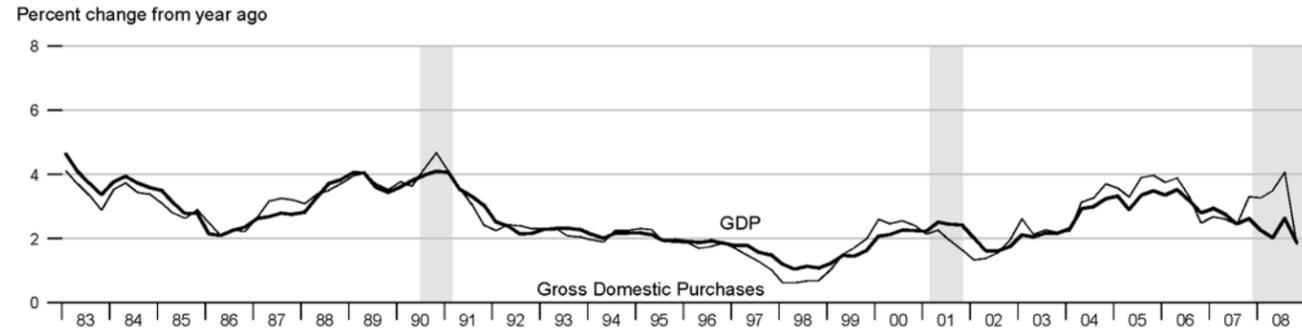
Treasury Yield Curve



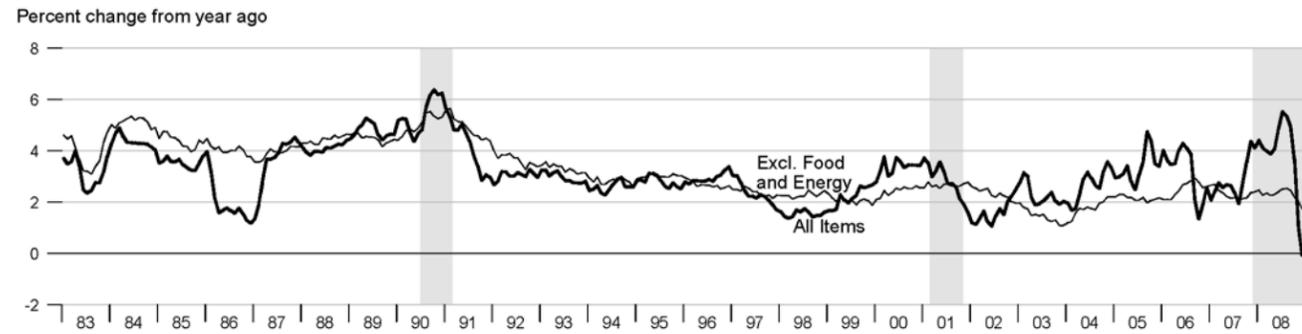
Standard and Poor's 500 Index with Reinvested Dividends



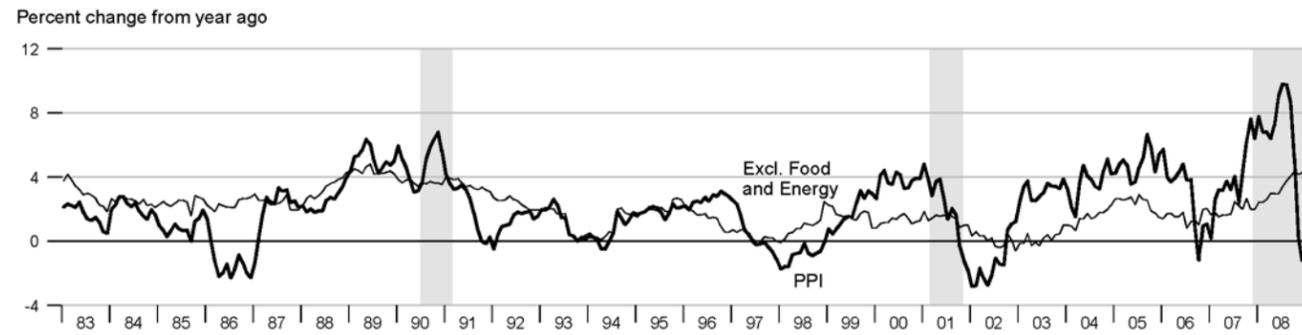
NIPA Chain Price Indexes



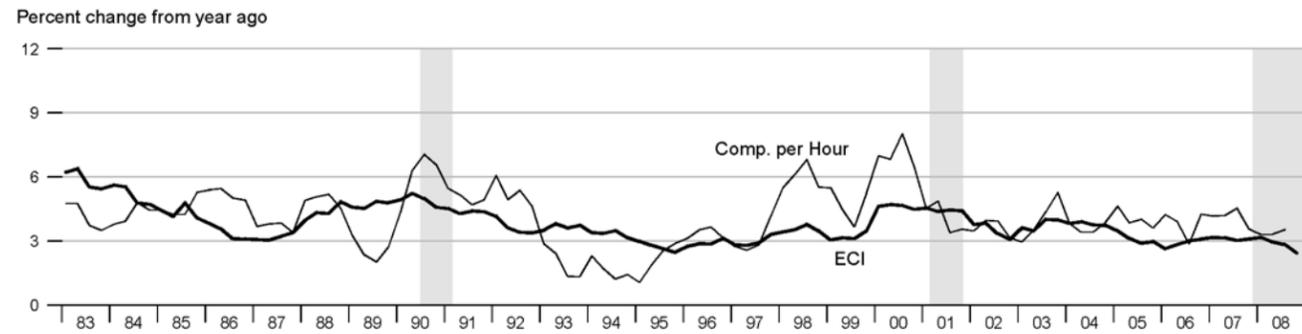
Consumer Price Index



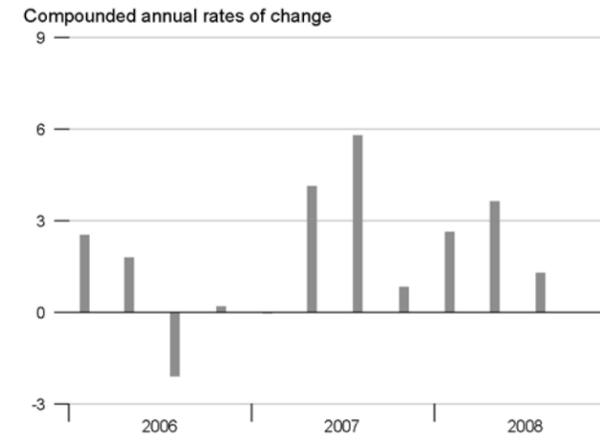
Producer Price Index, Finished Goods



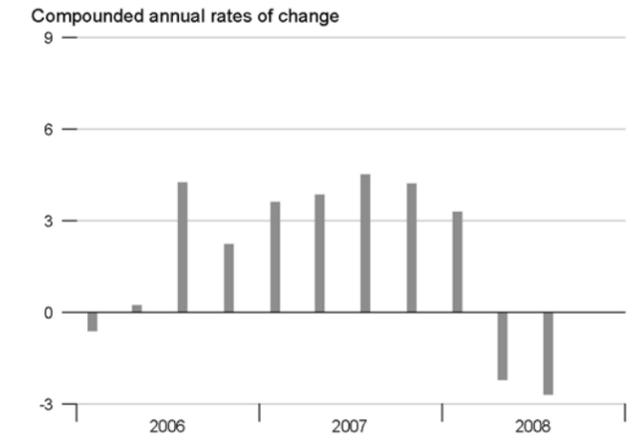
Employment Cost Index and Compensation per Hour



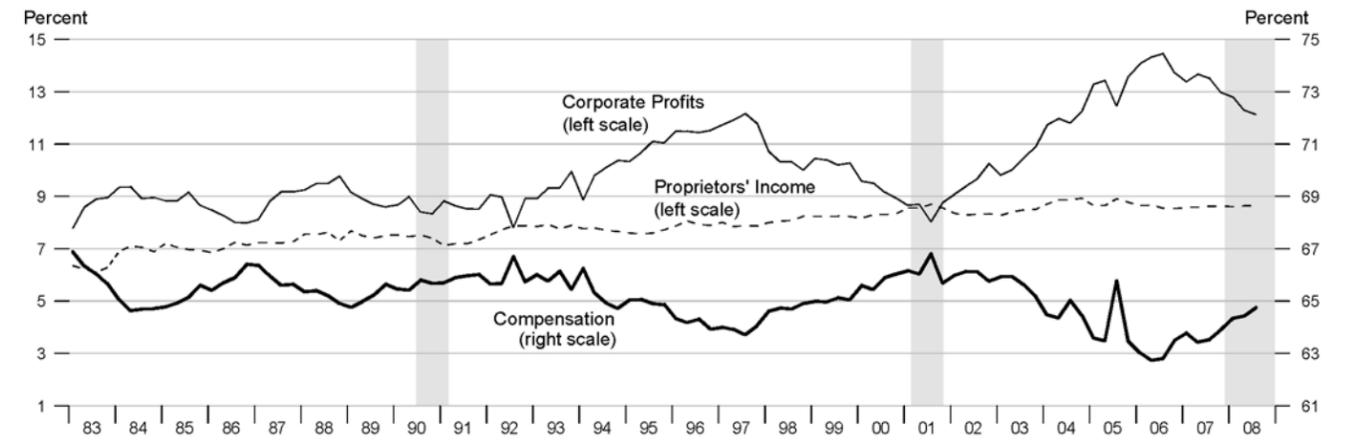
Nonfarm Output per Hour



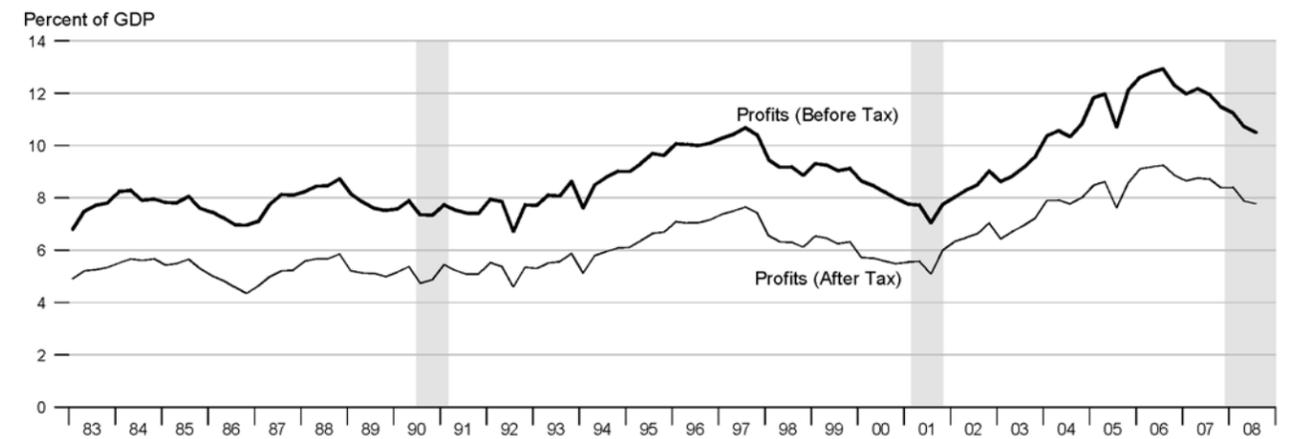
Manufacturing Output per Hour



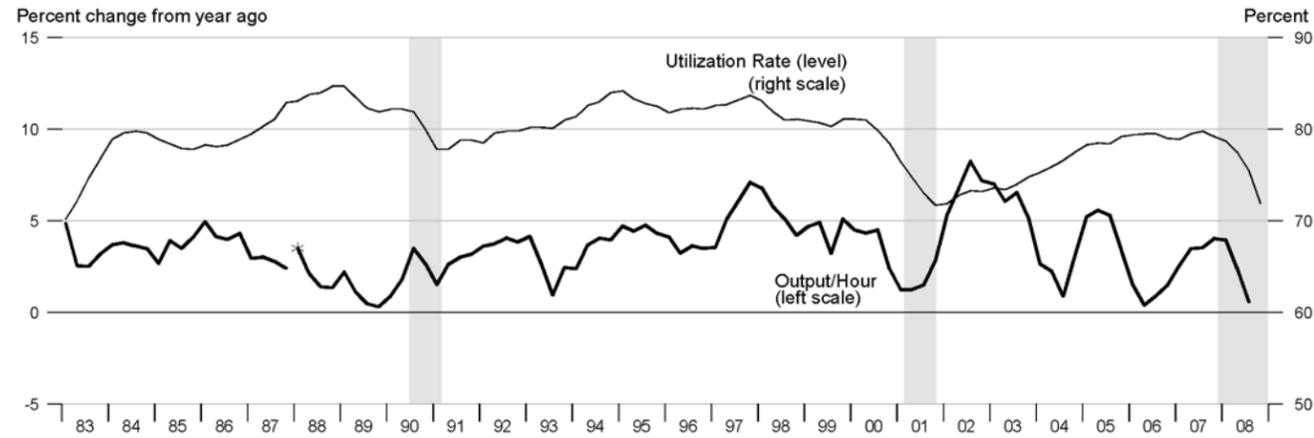
Selected Component Shares of National Income



Corporate Profits

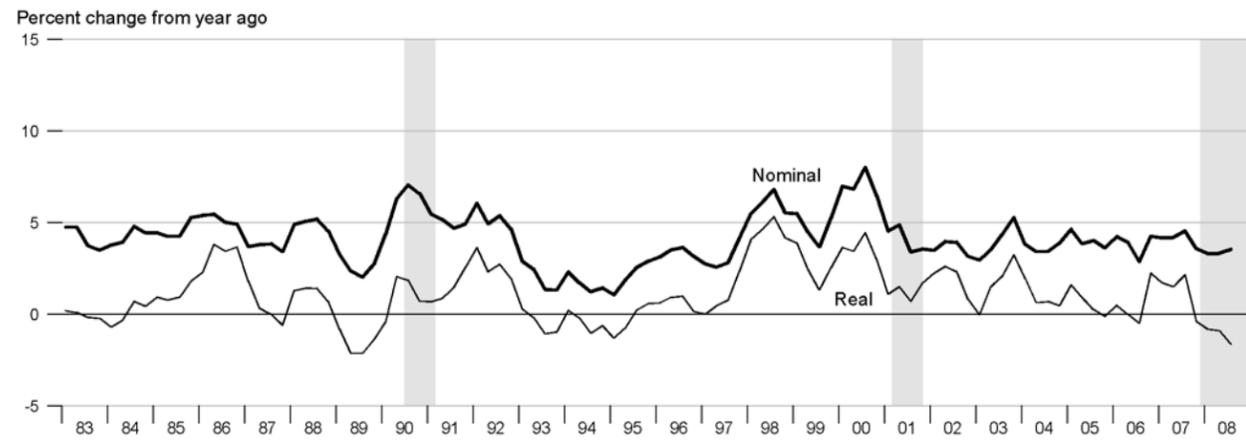


Output per Hour and Capacity Utilization, Manufacturing

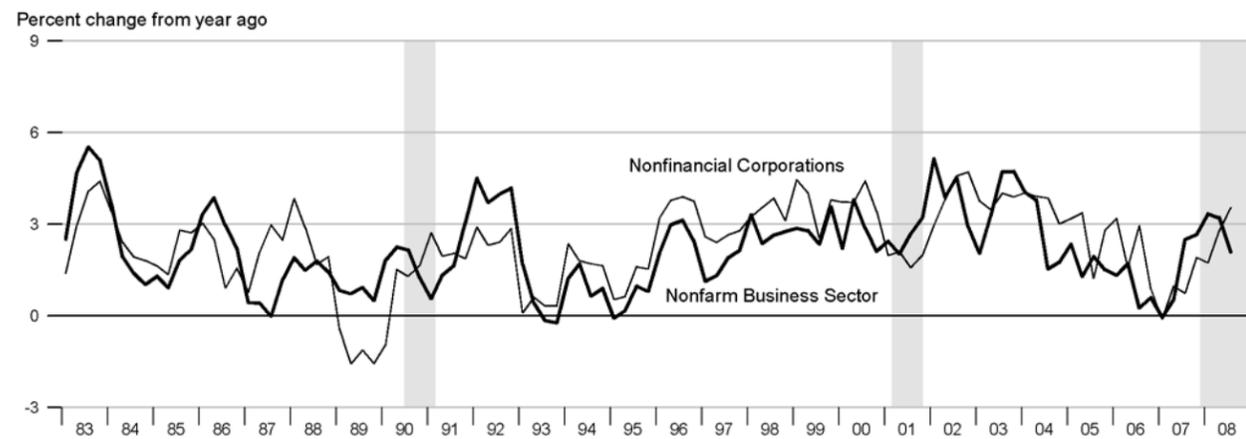


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

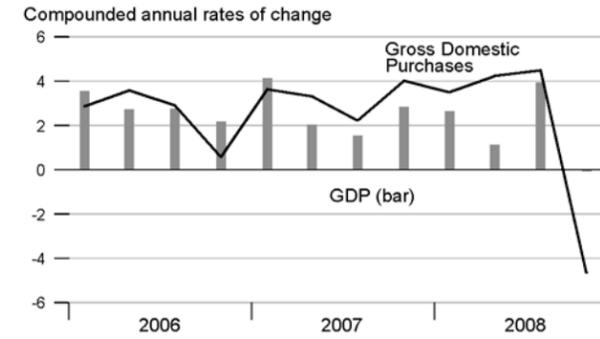
Nonfarm Compensation per Hour



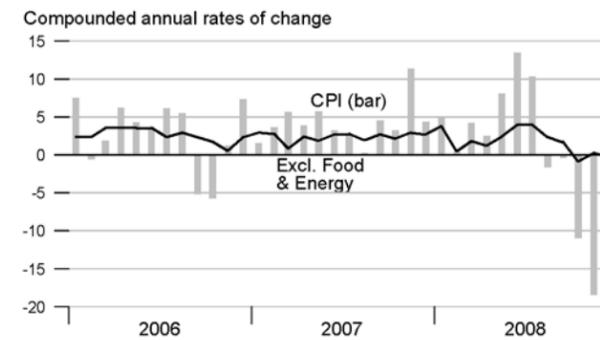
Output per Hour, Nonfarm Business and Nonfinancial Corporations



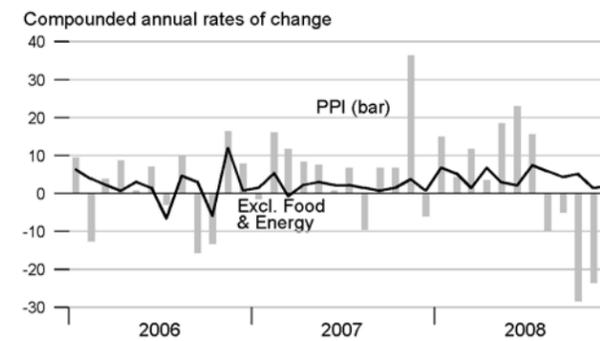
NIPA Chain Price Indexes



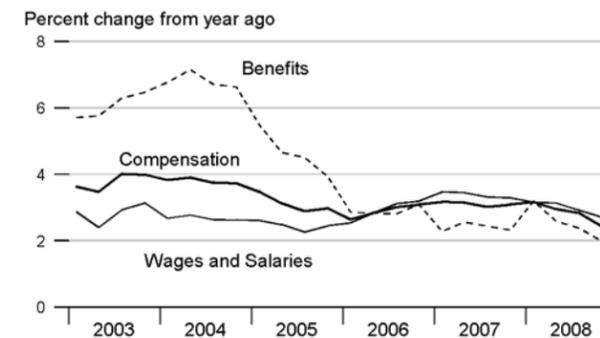
Consumer Price Index



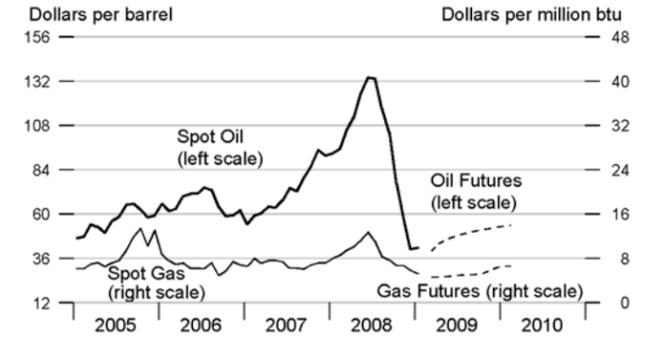
Producer Price Index, Finished Goods



Employment Cost Index

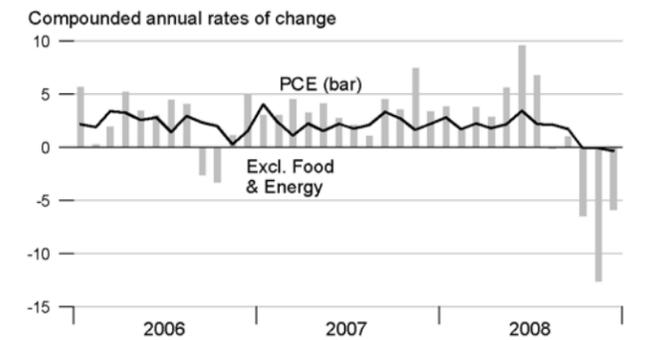


Oil & Natural Gas Prices: Spot & Futures

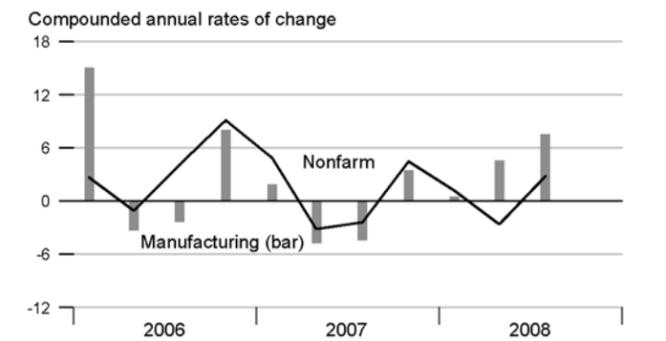


Note: Futures prices as of 2/2/2009.

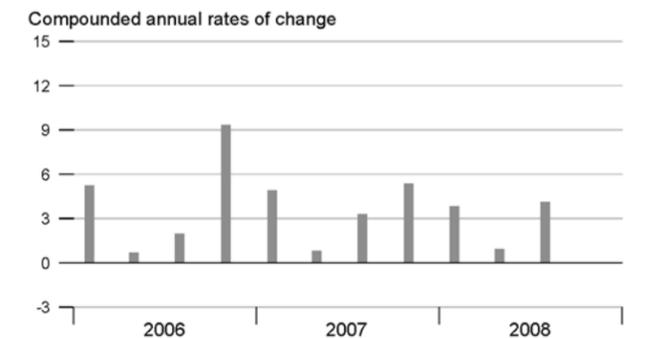
Consumption Chain Price Index



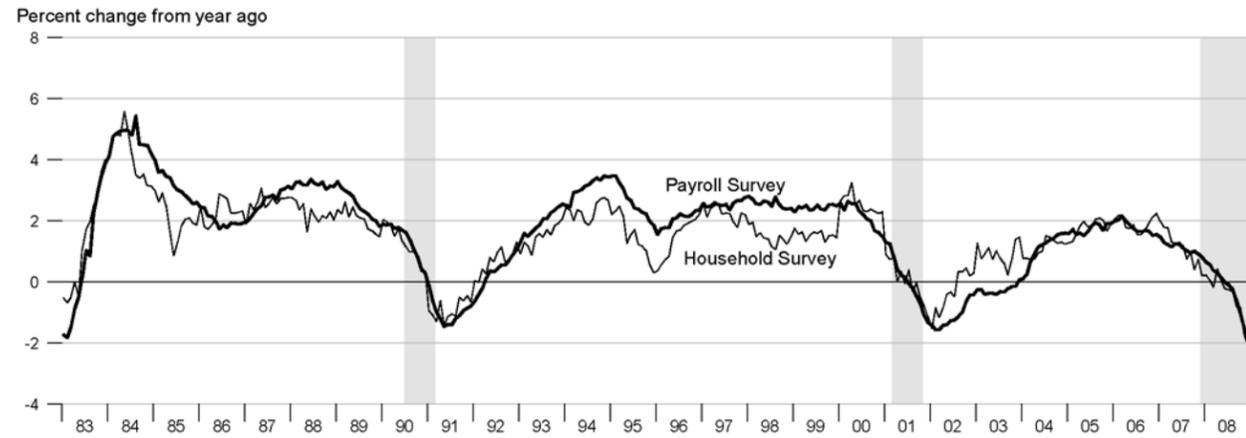
Unit Labor Cost



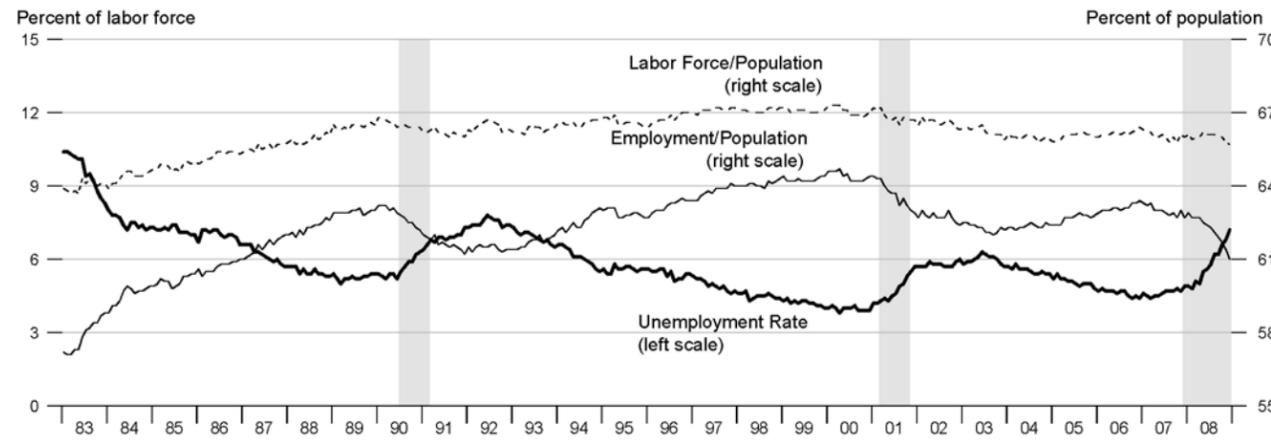
Compensation per Hour



Employment



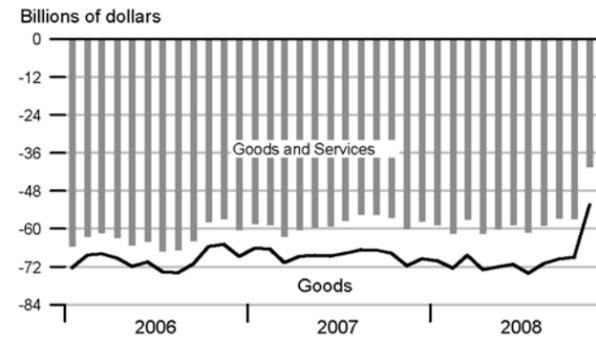
Unemployment, Labor Force Participation, and Employment Rates



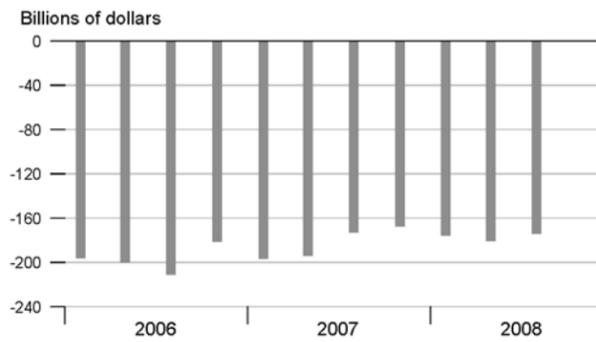
Duration of Unemployment



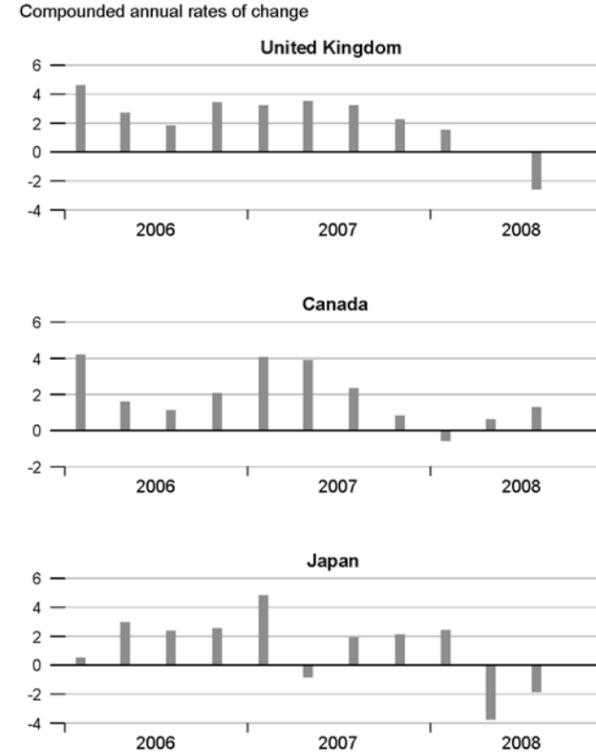
Trade Balance



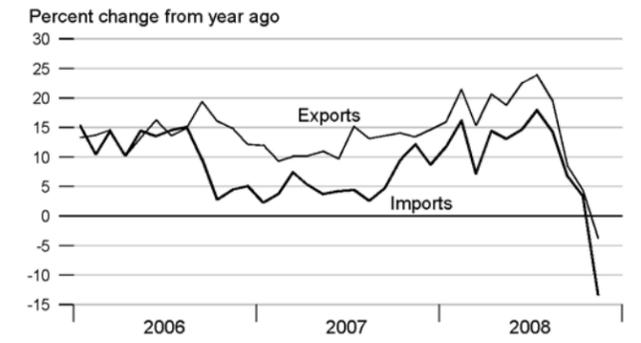
Current Account Balance



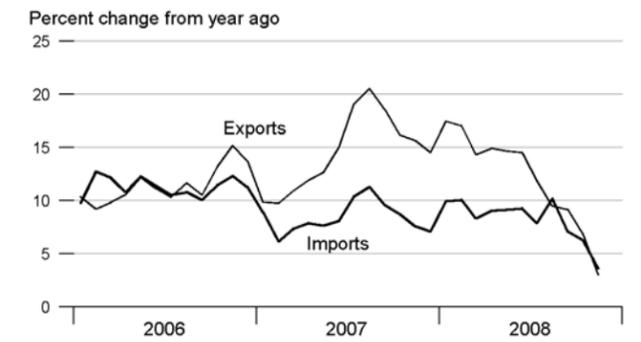
Real GDP Growth of Major Trading Partners



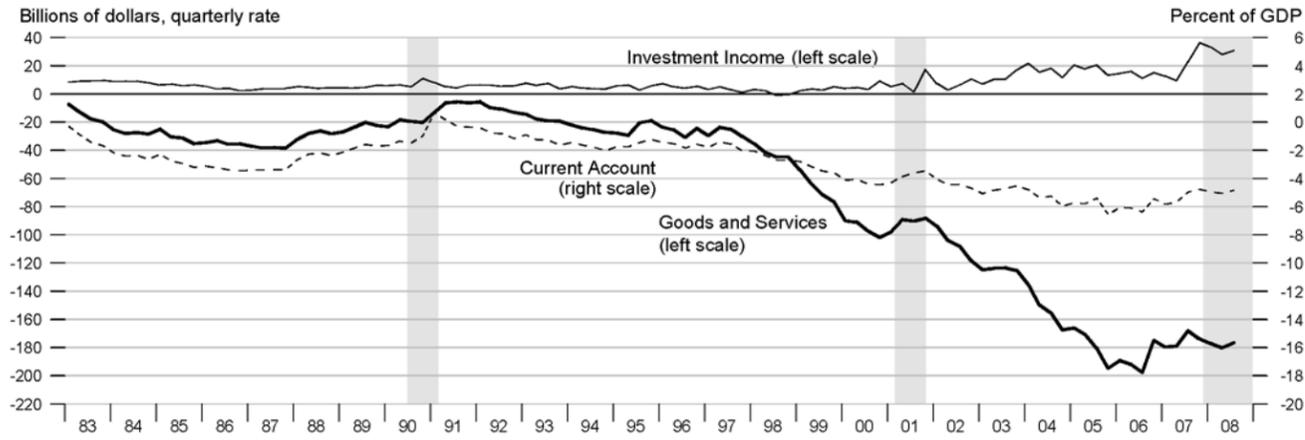
Goods Trade



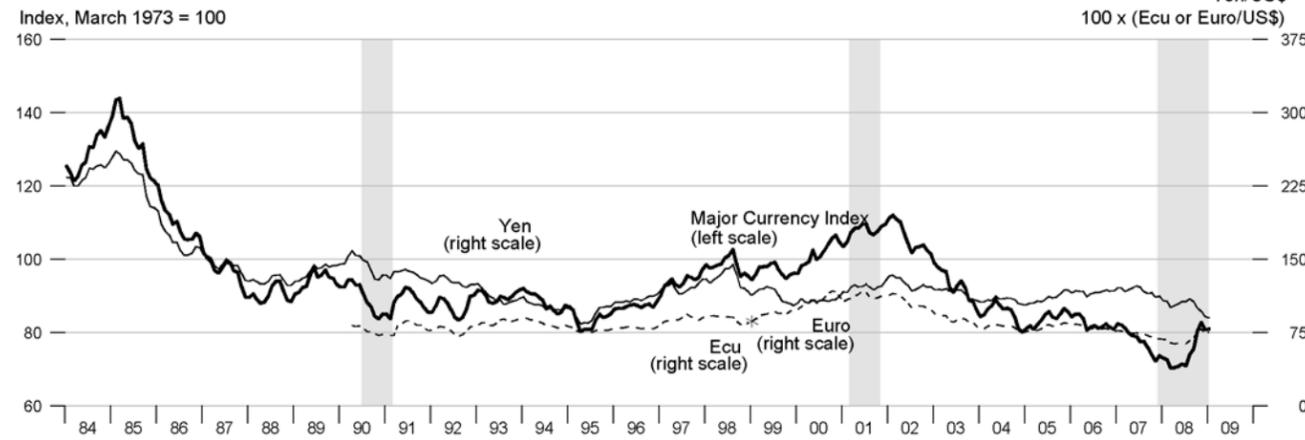
Services Trade



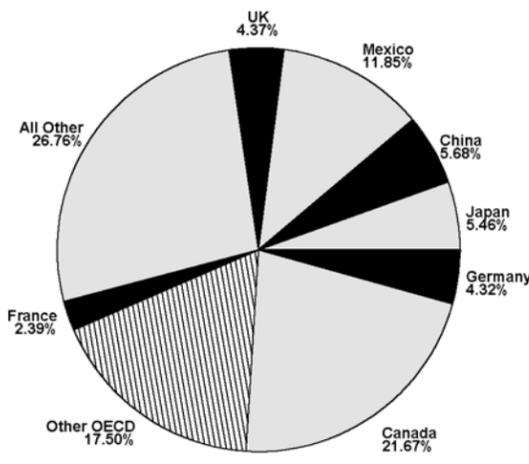
Current Account, Trade and Investment Income Balances



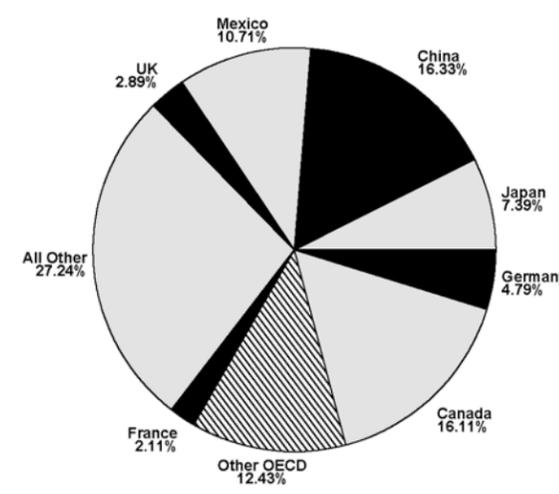
Exchange Rates



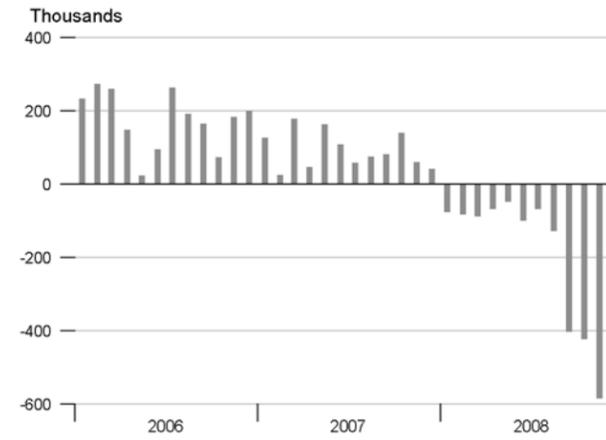
Goods Export Shares, 2007



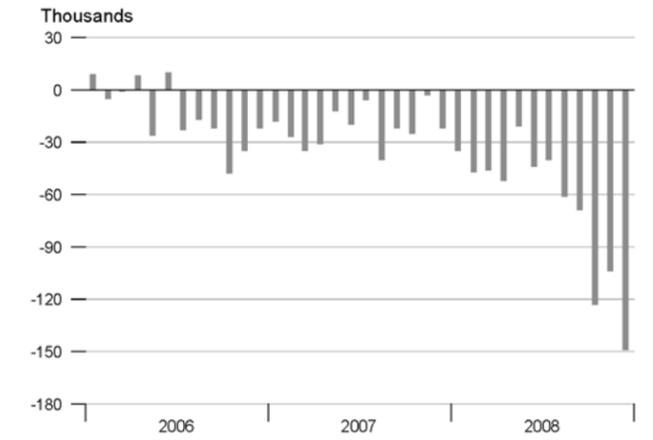
Goods Import Shares, 2007



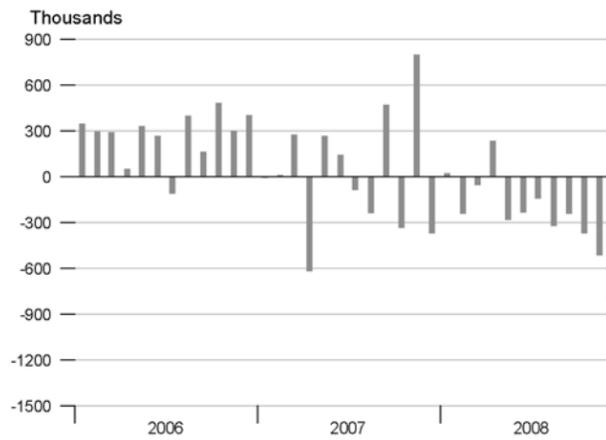
Change in Nonfarm Payrolls



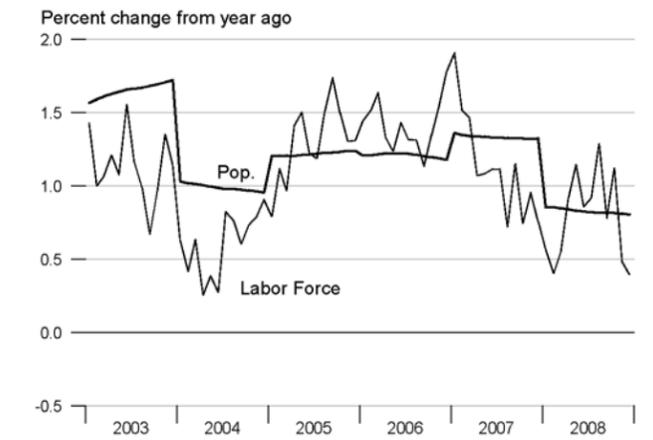
Change in Manufacturing Payrolls



Change in Household Employment



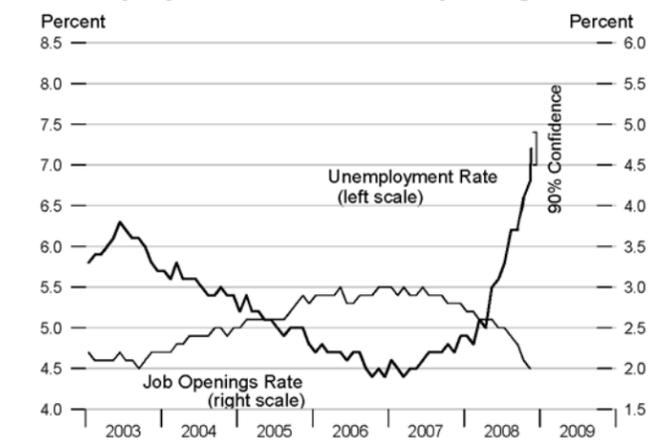
Labor Force and Population



Available Labor Supply and Components

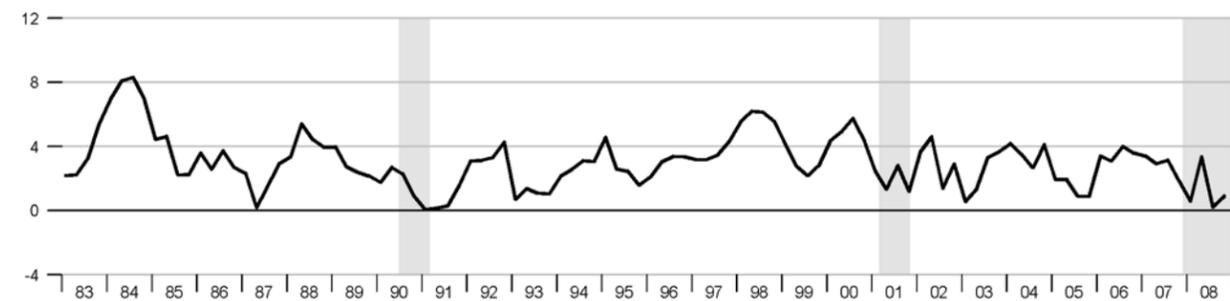


Unemployment Rate & Job Openings Rate



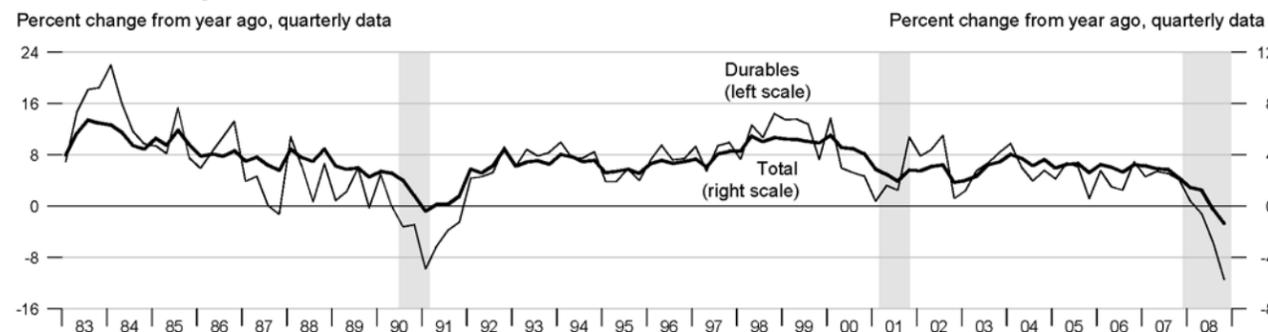
Real Disposable Personal Income

Percent change from year ago, quarterly data



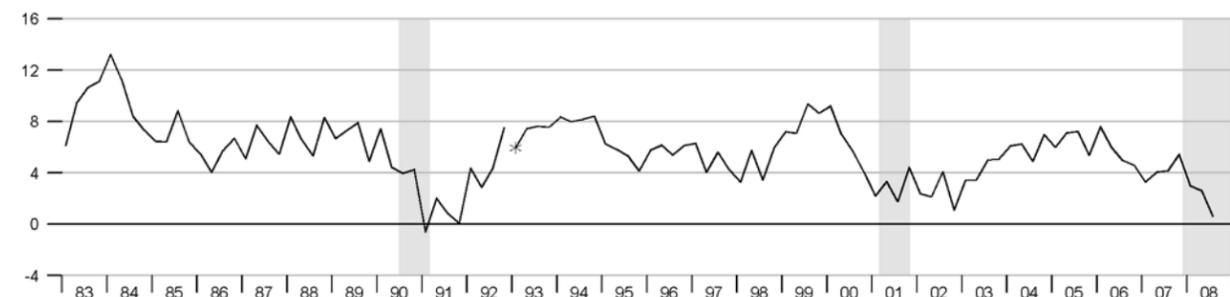
Real Consumption

Percent change from year ago, quarterly data



Retail and Food Services Sales

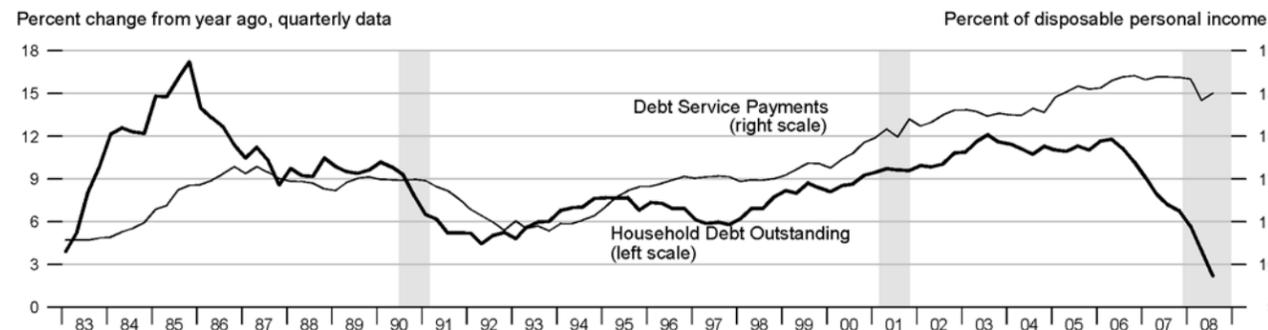
Percent change from year ago, quarterly average



*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).

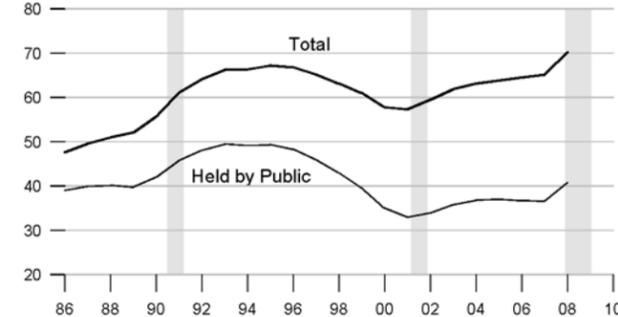
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data



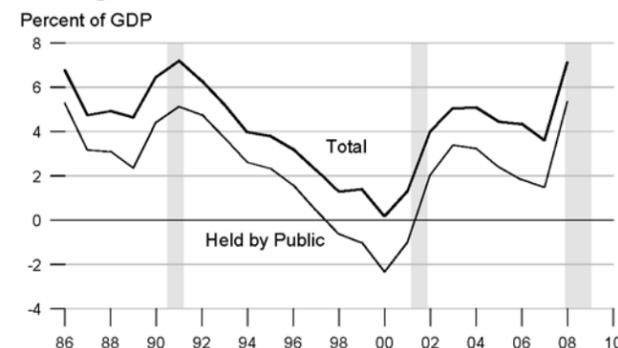
Federal Debt

Percent of GDP



Change in Federal Debt

Percent of GDP



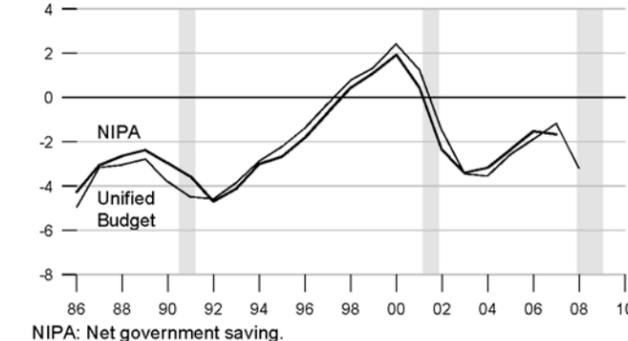
Federal Government Debt

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
2006		8507.0	3663.8	4843.2	768.9	4074.2	2027.3
2007		9007.7	3958.4	5049.2	779.6	4269.7	2237.2
2008		10024.7	4210.5	5814.2	476.6	5344.2	2862.0
2005	March	7776.9	3204.5	4572.4	717.3	3855.4	1956.3
	June	7836.5	3308.9	4527.6	724.7	3803.0	1879.6
	September	7932.7	3331.1	4601.6	736.4	3864.9	1930.6
	December	8170.4	3455.8	4714.6	744.2	3970.6	2036.0
2006	March	8371.2	3498.4	4872.8	758.5	4114.0	2084.5
	June	8420.0	3622.6	4797.5	766.4	4030.8	1979.8
	September	8507.0	3663.8	4843.2	768.9	4074.2	2027.3
	December	8680.2	3779.0	4901.2	778.9	4122.1	2105.0
2007	March	8849.7	3795.4	5054.3	780.9	4273.1	2196.7
	June	8867.7	3924.7	4943.0	790.5	4152.6	2193.9
	September	9007.7	3958.4	5049.2	779.6	4269.7	2237.2
	December	9229.2	4092.9	5136.3	740.6	4395.7	2355.1
2008	March	9437.6	4103.6	5334.0	591.2	4742.9	2515.6
	June	9492.0	4207.0	5285.0	478.8	4806.2	2647.9
	September	10024.7	4210.5	5814.2	476.6	5344.2	2862.0

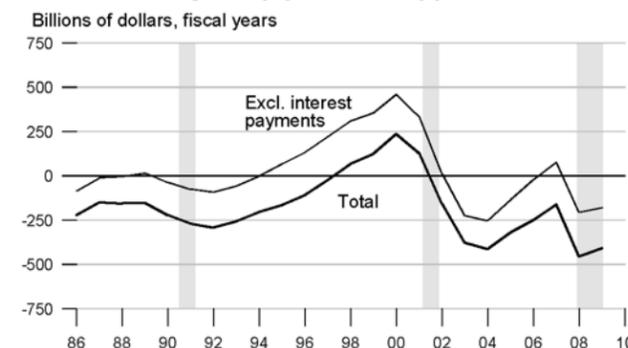
Federal Surplus (+) / Deficit (-)

Percent of GDP

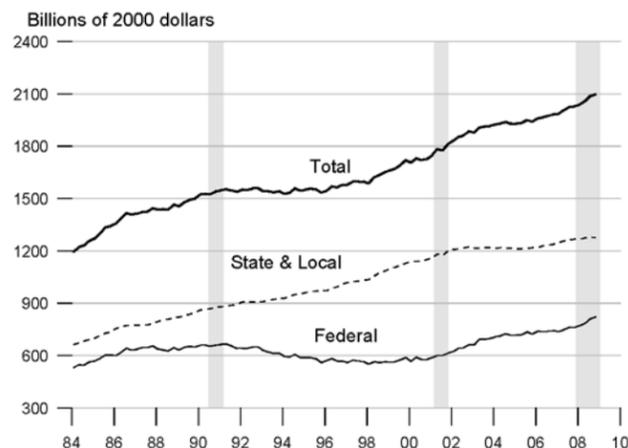


Federal Surplus (+) / Deficit (-), Unified Basis

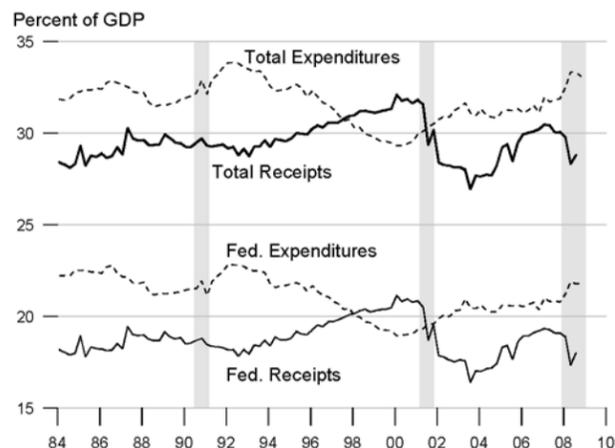
Billions of dollars, fiscal years



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures

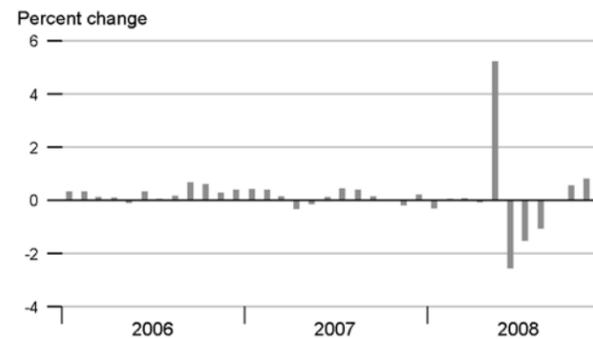


Government Budgets

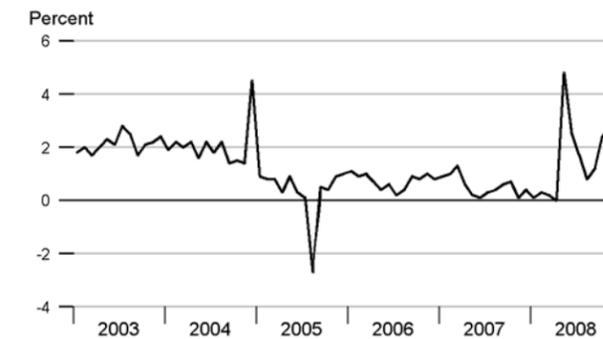
Billions of dollars

	National Income Accounts			Unified Budget		
	Calendar Years			Fiscal Years		
	State and Local		Federal	Federal		
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1992	845.7	845.0	0.7	1147.2	1444.6	-297.4
1993	886.9	886.0	0.9	1222.5	1496.0	-273.5
1994	942.9	932.4	10.5	1320.8	1533.1	-212.3
1995	990.2	978.2	12.0	1406.5	1603.5	-197.0
1996	1043.3	1017.5	25.8	1524.0	1665.8	-141.8
1997	1097.4	1058.3	39.1	1653.1	1708.9	-55.8
1998	1163.2	1111.2	52.0	1773.8	1734.9	38.9
1999	1236.7	1186.3	50.4	1891.2	1787.6	103.6
2000	1319.5	1269.5	50.0	2053.8	1864.4	189.4
2001	1373.0	1368.2	4.8	2016.2	1969.5	46.7
2002	1410.1	1444.3	-34.2	1853.2	2101.1	-247.9
2003	1494.2	1514.5	-20.3	1879.9	2252.1	-372.2
2004	1594.3	1592.8	1.5	2008.9	2379.5	-370.6
2005	1714.4	1684.9	29.5	2266.9	2558.6	-291.7
2006	1811.4	1765.3	46.1	2510.4	2711.6	-201.2
2007	1902.8	1892.4	10.4	2651.2	2880.5	-229.3
2008	.	2015.3	.	.	3094.7	.
2007Q1	1877.5	1854.3	23.2	2612.8	2837.9	-225.1
2007Q2	1909.8	1874.0	35.8	2648.1	2859.5	-211.4
2007Q3	1905.5	1900.7	4.8	2664.9	2909.2	-244.3
2007Q4	1918.4	1940.7	-22.3	2679.2	2915.6	-236.4
2008Q1	1922.9	1975.3	-52.4	2672.5	3003.2	-330.7
2008Q2	1955.4	2022.3	-66.9	2478.8	3128.4	-649.6
2008Q3	1944.9	2048.5	-103.6	2592.1	3139.8	-547.7
2008Q4	.	2015.2	.	.	3107.2	.

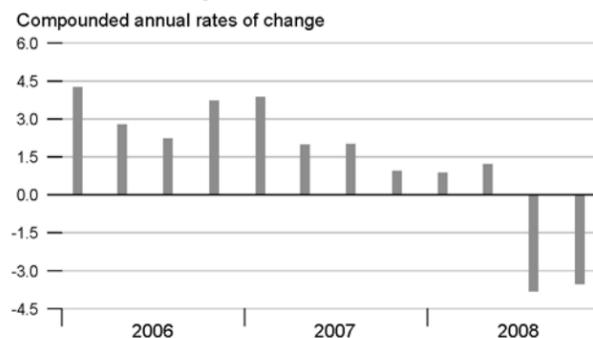
Real Disposable Personal Income



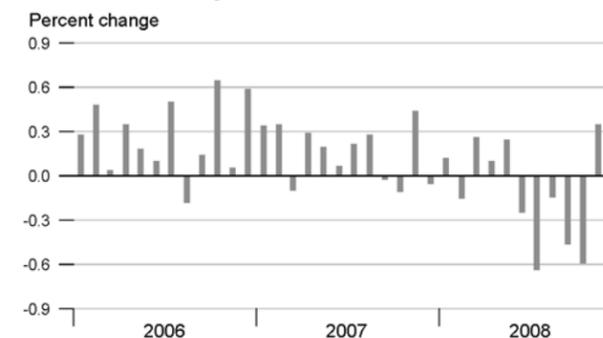
Personal Saving Rate



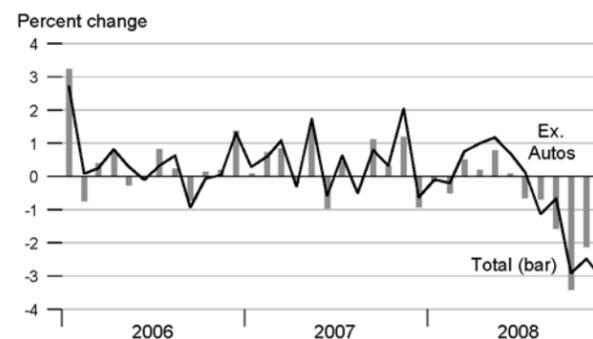
Real Consumption



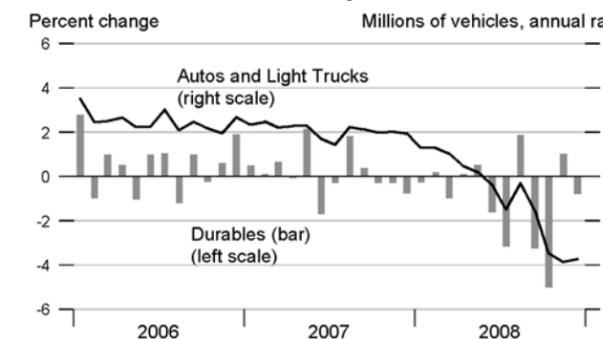
Real Consumption



Retail & Food Services



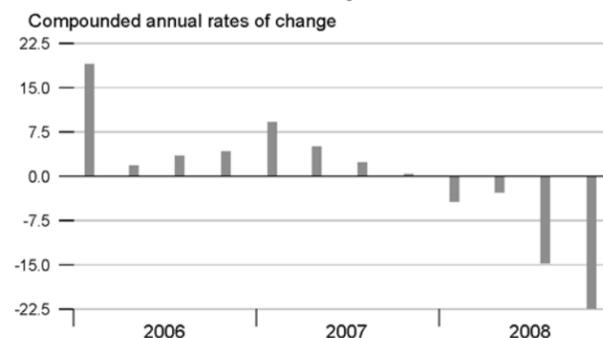
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)



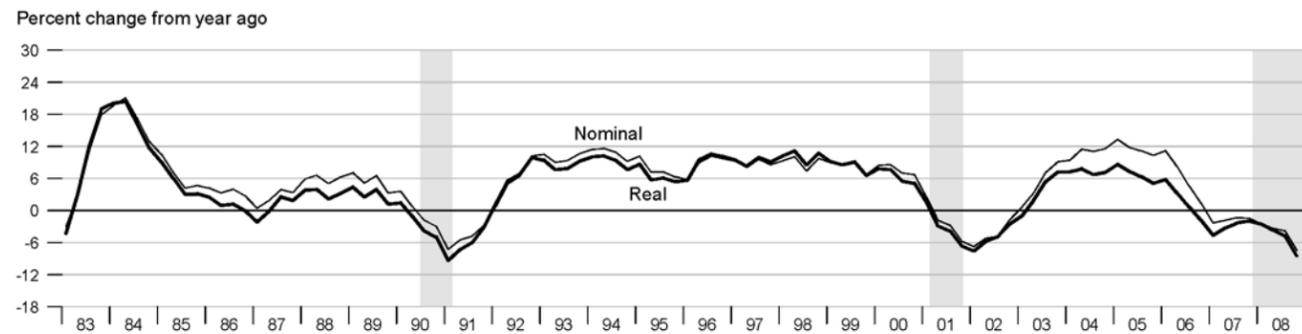
Real Durables Consumption



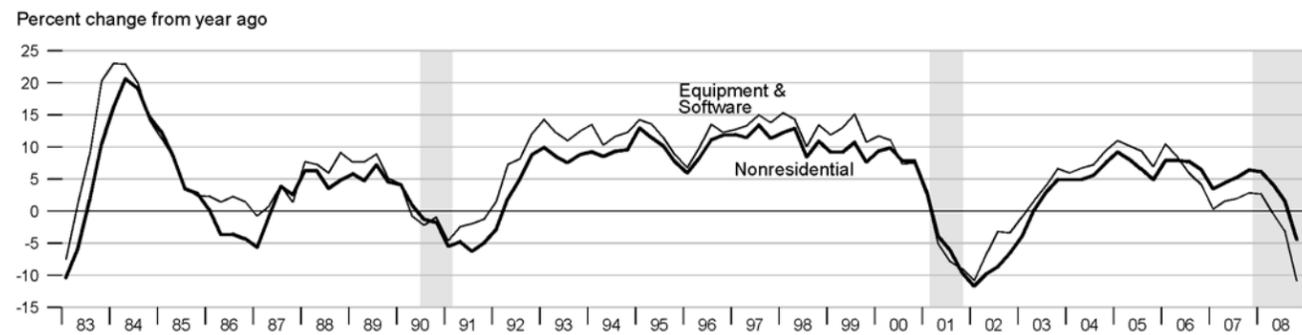
Investment



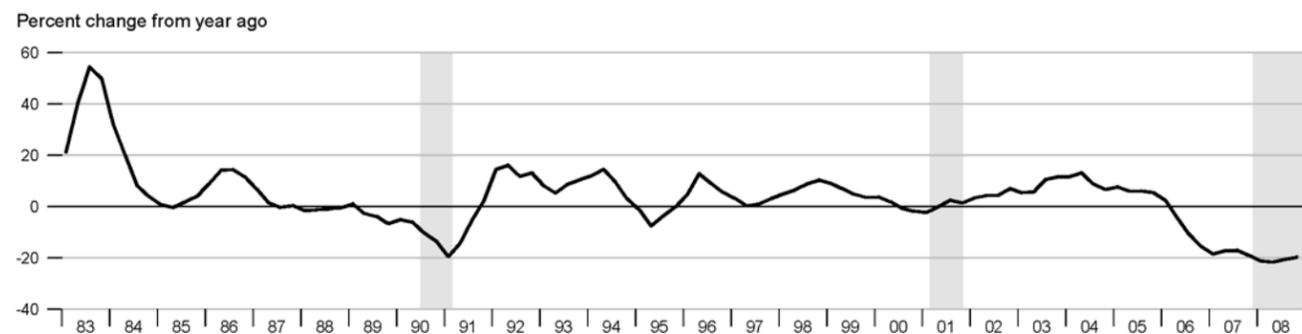
Private Fixed Investment



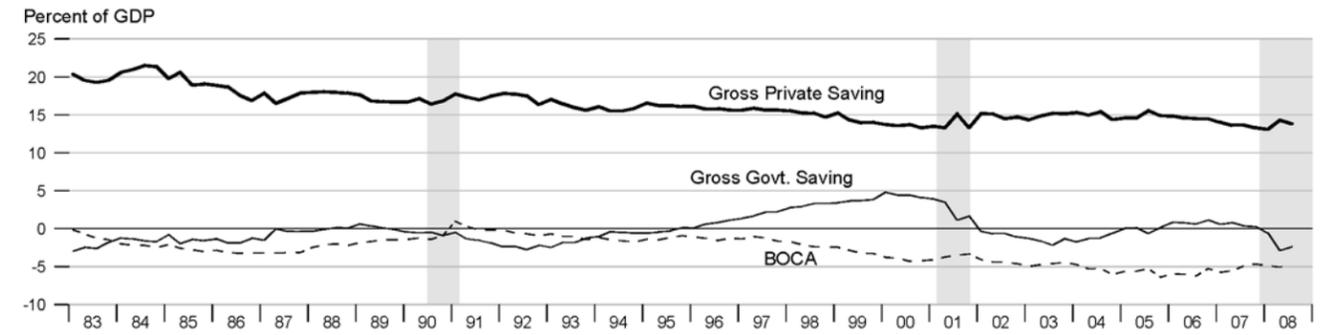
Real Nonresidential Fixed and Equipment & Software Investment



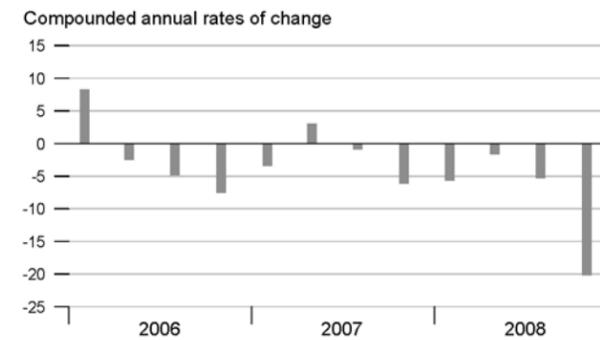
Real Residential Fixed Investment



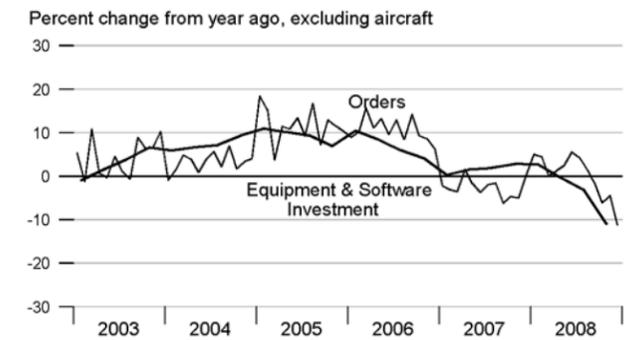
Gross Saving Rates and Balance on Current Account (NIPA)



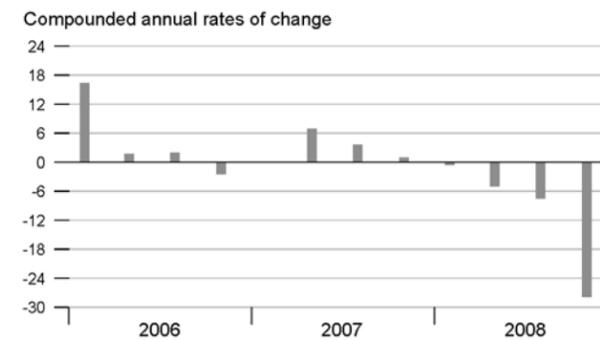
Real Private Fixed Investment



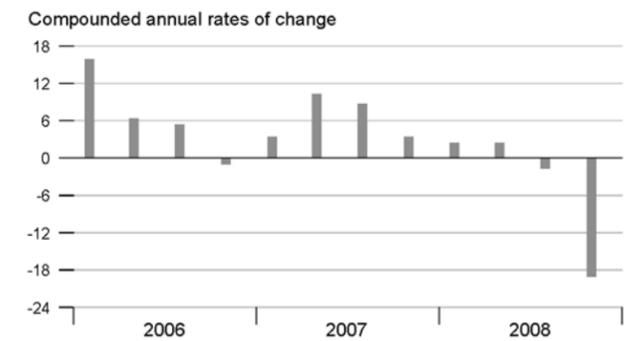
Nondefense Capital Goods Orders



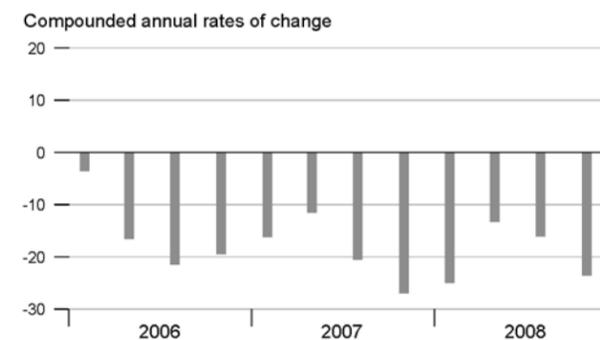
Real Equipment & Software Investment



Real Nonresidential Fixed Investment



Real Residential Fixed Investment



Housing Starts and New Home Sales

