

Index Funds: Hedgers or Speculators?

The commodity futures market has changed dramatically over the past five years. The Goldman Sachs Commodity Index (GSCI) rose from 235 at the end of December 2002 to 787 on the last day of May 2008—an average annual commodity price inflation rate of 25 percent. The price of agricultural commodities rose about 15 percent, and energy prices soared almost twice as fast—at 29 percent. Futures market participants normally include commercial hedgers and speculators. Commercial hedgers are firms that produce the commodity or use it in producing goods and services. For example, wheat farmers sell wheat ahead of the harvest to hedge against a falling price at harvest time. On the other side of the market, the bread and pasta producers buy wheat in advance to hedge against the risk of rising prices in coming months (and years). Speculators bring liquidity to the market and are generally believed to make the market more efficient in discovering the equilibrium price.

One big change in this market is the growth of index funds that invest in long positions. In 2002, only a small percentage of the long positions were held by such funds. Over the past five years, however, the index funds' long positions have grown. They now represent a significant share of the investment in commodity futures. The rise of index funds has been accompanied by a rapid rise in the use of derivatives based on commodity price indices. Note, however, that not all of these investors are speculators. Although it is true that they are not hedging risk in the commodity markets, many large investors, including the employee pension funds for the federal government and the state of California, are using the commodity futures index funds to hedge risk in the stock and bond markets.

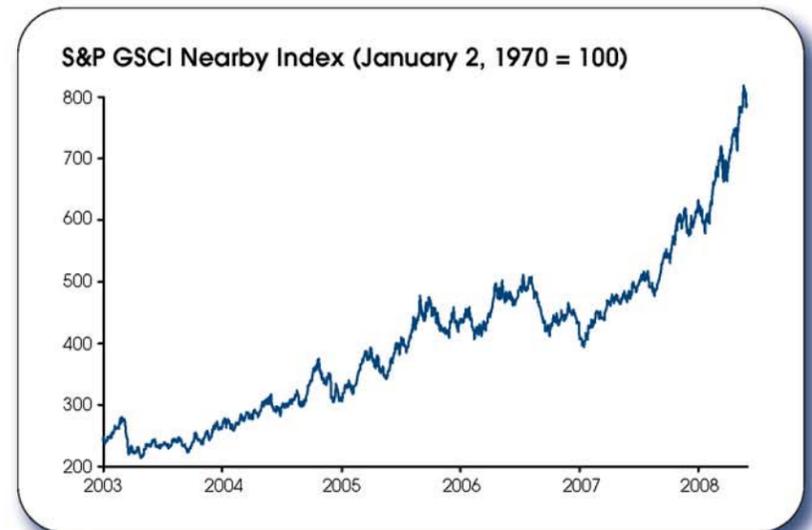
Why the rapid growth in the use of commodity futures to hedge risk in the stock and bond markets? Readers seeking to understand this change are referred to a recent research paper by Gary Gorton and Geert Rouwenhorst in which they develop a data set on commodity futures prices that spans the period from July 1959 to December 2003.¹ They analyze the return an investor would have earned on a long position in an equally weighted portfolio of investments in a broad set of commodity futures. They show that such an investment displays the risk-return characteristics of a similar investment in equities. The most interesting fact they uncover,

however, is that the return to commodity futures was *negatively* correlated with returns in both stocks and bonds. The commodity future returns are positively correlated with inflation, unexpected inflation, and changes in expected inflation. In other words, an investment in commodity futures would have been an effective hedge against the business cycle and inflation risk that had been thought difficult, if not impossible, to hedge. Of course, the history of returns likely would be different if large investors actually had been using commodity markets in this way during the past 47 years.

The recent increase in commodity futures prices has been accompanied by a large increase in volatility that has raised the cost of maintaining margin accounts. Anecdotal evidence from the Eighth Federal Reserve District suggests that the rising costs of maintaining margin accounts have led to less commercial hedging in the cotton and grain markets—at least by the smaller market participants. This development is interesting because the commodity futures market now is being asked to hedge not just the risks to producers and consumers of commodities, but also to hedge risks in the much larger markets for stocks and bonds. This is uncharted territory. It will be interesting to see whether the commodity sector is large enough to effectively insure all this risk.

—William T. Gavin

¹ See Gary B. Gorton and K. Geert Rouwenhorst, "Facts and Fantasies about Commodity Futures," *Financial Analysts Journal*, 2006, 62(2), pp. 47-68.



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*
 Research Division
 Federal Reserve Bank of St. Louis
 P.O. Box 442
 St. Louis, MO 63166-0442

or to:

stlsFRED@stls.frb.org

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.

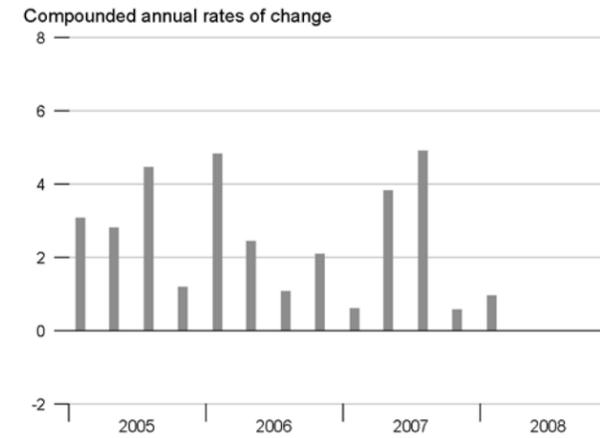
Federal Reserve Board
 Index of industrial production, treasury yields, exchange rates, capacity utilization, household debt.

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

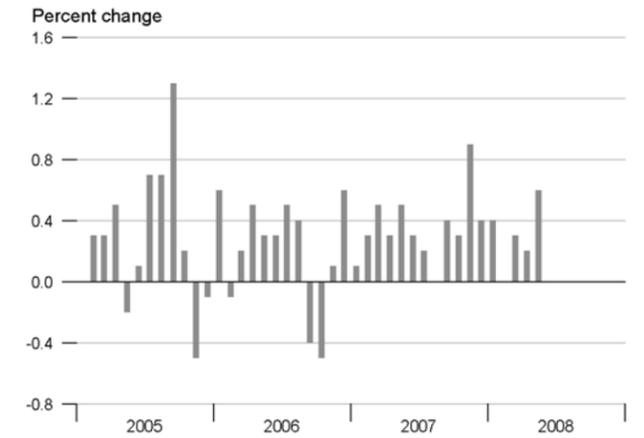
Organization for Economic Cooperation and Development (OECD)
 GDP for major trading partners (not available on FRED).

	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	
2003	184.0			2.3		193.2			1.5		143.3			3.2	
2004	188.9			2.7		196.6			1.8		148.5			3.6	
2005	195.3			3.4		200.9			2.2		155.7			4.9	
2006	201.6			3.2		205.9			2.5		160.3			3.0	
2007	207.3			2.9		210.7			2.3		166.6			3.9	
2006	1	199.4	0.4	1.8	3.7	1.8	203.7	0.6	2.5	2.1	2.5	159.6	0.1	0.6	4.5
	2	201.3	0.9	3.7	3.9	2.7	205.4	0.9	3.4	2.5	3.0	160.8	0.8	3.0	4.3
	3	203.2	1.0	3.9	3.3	3.1	206.9	0.7	2.9	2.8	2.9	161.1	0.2	0.8	2.8
	4	202.4	-0.4	-1.5	1.9	1.9	207.8	0.5	1.8	2.7	2.7	159.8	-0.8	-3.3	0.3
2007	1	204.3	0.9	3.7	2.4	3.7	209.0	0.6	2.3	2.6	2.3	162.7	1.9	7.6	2.0
	2	206.6	1.1	4.6	2.6	4.1	210.0	0.5	2.0	2.3	2.2	166.2	2.1	8.8	3.4
	3	208.0	0.7	2.8	2.4	3.7	211.3	0.6	2.5	2.1	2.3	166.9	0.4	1.6	3.6
	4	210.6	1.2	5.0	4.0	4.0	212.6	0.6	2.5	2.3	2.3	170.5	2.2	9.1	6.7
2008	1	212.8	1.1	4.3	4.2	4.3	213.9	0.6	2.5	2.4	2.5	174.4	2.2	9.3	7.1
2006	May	201.3	0.3	4.3	4.0	3.8	205.4	0.3	3.6	2.4	3.1	160.5	0.1	0.8	4.3
	Jun	201.9	0.3	3.6	4.3	3.8	206.0	0.3	3.6	2.7	3.2	161.4	0.6	6.9	4.8
	Jul	202.9	0.5	6.1	4.1	4.1	206.4	0.2	2.4	2.7	3.1	161.0	-0.2	-2.9	3.8
	Aug	203.8	0.4	5.5	3.9	4.3	206.9	0.2	2.9	2.8	3.0	162.3	0.8	10.1	3.8
	Sep	202.9	-0.4	-5.2	2.1	3.2	207.3	0.2	2.3	2.9	3.0	160.0	-1.4	-15.7	0.9
	Oct	201.9	-0.5	-5.8	1.4	2.2	207.6	0.1	1.8	2.8	2.8	158.1	-1.2	-13.4	-1.2
	Nov	202.1	0.1	1.2	1.9	2.1	207.7	0.0	0.6	2.6	2.6	160.1	1.3	16.3	0.9
	Dec	203.3	0.6	7.4	2.6	2.6	208.1	0.2	2.3	2.6	2.6	161.1	0.6	7.8	1.1
2007	Jan	203.6	0.1	1.5	2.1	1.5	208.6	0.2	3.0	2.7	3.0	160.9	-0.1	-1.5	0.2
	Feb	204.2	0.3	3.6	2.4	2.6	209.1	0.2	2.8	2.7	2.9	162.9	1.2	16.0	2.6
	Mar	205.1	0.5	5.7	2.8	3.6	209.2	0.1	0.9	2.5	2.2	164.4	0.9	11.6	3.2
	Apr	205.8	0.3	3.9	2.6	3.7	209.7	0.2	2.4	2.4	2.3	165.5	0.7	8.3	3.2
	May	206.7	0.5	5.7	2.7	4.1	210.0	0.2	1.9	2.2	2.2	166.5	0.6	7.5	3.7
	Jun	207.2	0.3	3.2	2.6	3.9	210.4	0.2	2.7	2.2	2.3	166.6	0.1	0.7	3.2
	Jul	207.7	0.2	2.7	2.4	3.7	210.9	0.2	2.8	2.2	2.3	167.5	0.5	6.7	4.0
	Aug	207.7	0.0	0.2	1.9	3.3	211.3	0.2	1.9	2.1	2.3	166.1	-0.8	-9.6	2.3
	Sep	208.5	0.4	4.5	2.8	3.4	211.7	0.2	2.7	2.1	2.3	167.0	0.5	6.7	4.4
	Oct	209.1	0.3	3.2	3.5	3.4	212.1	0.2	2.2	2.2	2.3	167.9	0.5	6.7	6.2
	Nov	210.9	0.9	11.3	4.4	4.1	212.6	0.2	2.9	2.4	2.4	172.3	2.6	36.4	7.6
	Dec	211.7	0.4	4.4	4.1	4.1	213.1	0.2	2.7	2.4	2.4	171.4	-0.5	-6.1	6.4
2008	Jan	212.5	0.4	4.8	4.4	4.8	213.8	0.3	3.8	2.5	3.8	173.4	1.2	14.9	7.8
	Feb	212.6	0.0	0.3	4.1	2.6	213.9	0.0	0.5	2.3	2.1	173.9	0.3	3.5	6.8
	Mar	213.3	0.3	4.2	4.0	3.1	214.2	0.2	1.8	2.4	2.0	175.8	1.1	13.9	6.9
	Apr	213.7	0.2	2.5	3.9	3.0	214.4	0.1	1.3	2.3	1.8	176.1	0.2	2.1	6.4
	May	215.1	0.6	8.1	4.1	4.0	214.8	0.2	2.5	2.3	2.0	178.5	1.4	17.6	7.2

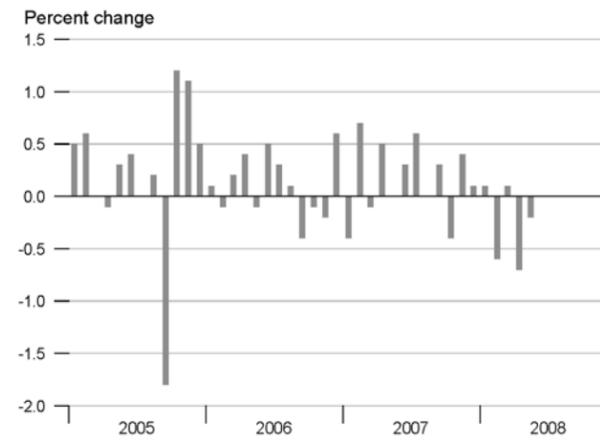
Real GDP Growth



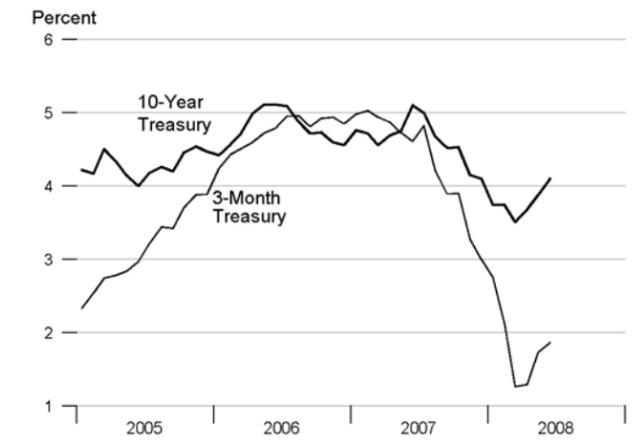
Consumer Price Index



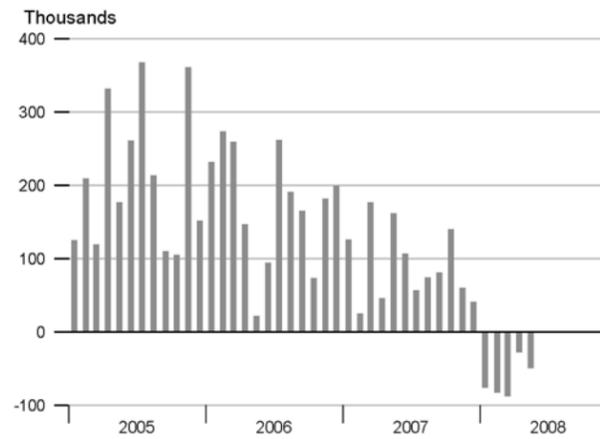
Industrial Production



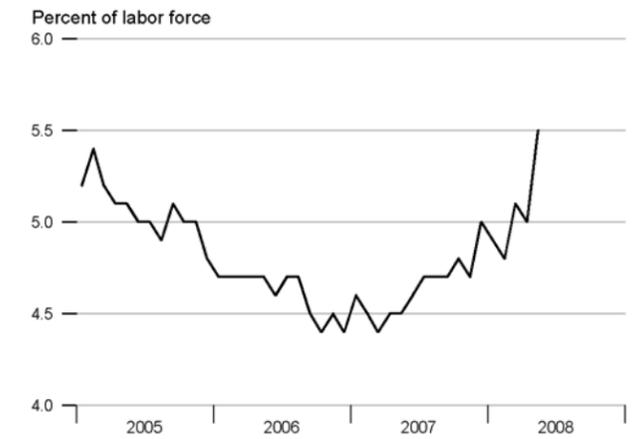
Interest Rates



Change in Nonfarm Payrolls

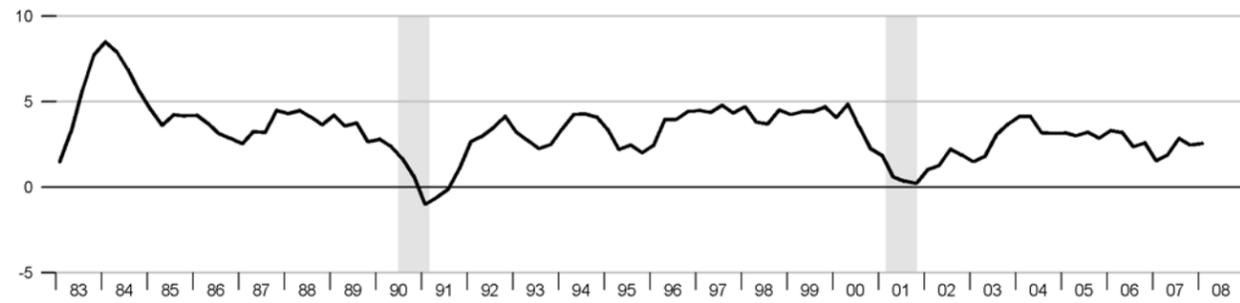


Unemployment Rate



Real Gross Domestic Product

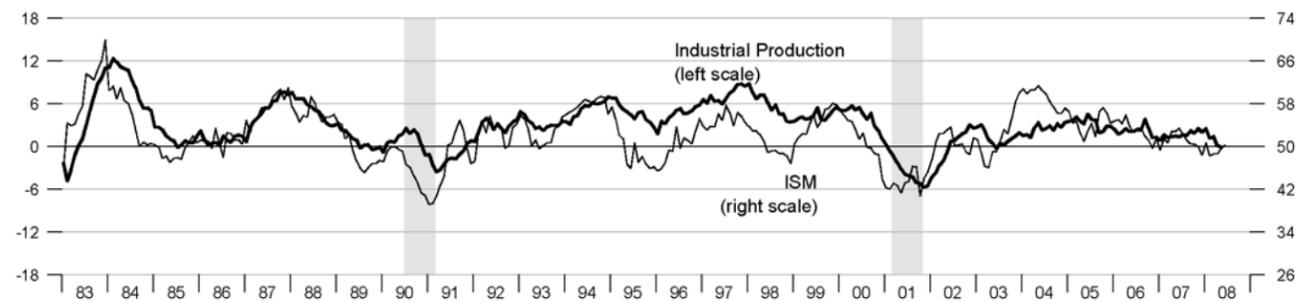
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago

Index



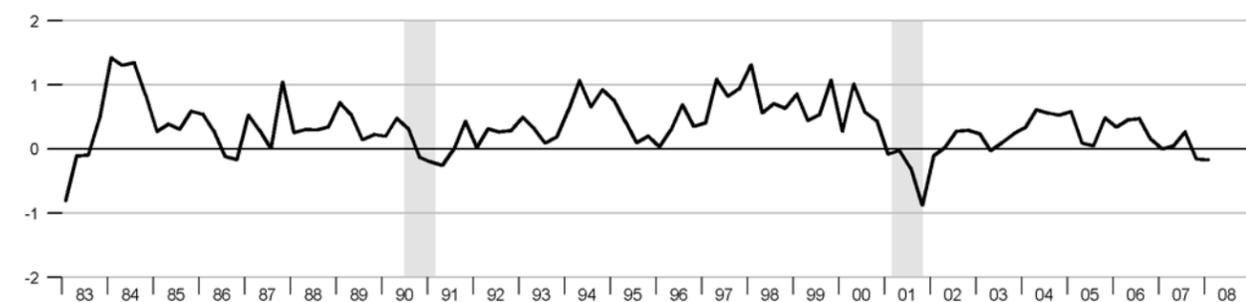
Aggregate Private Nonfarm Hours

Percent change from year ago



Real Change in Private Inventories

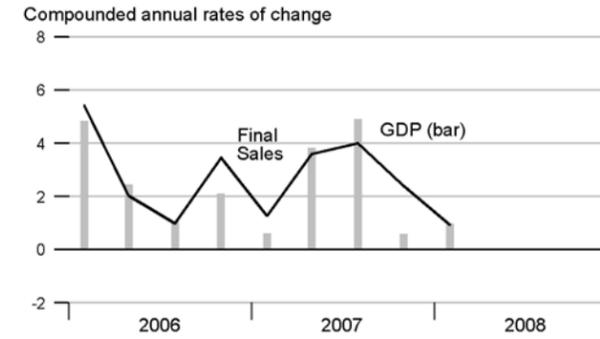
Percent of GDP



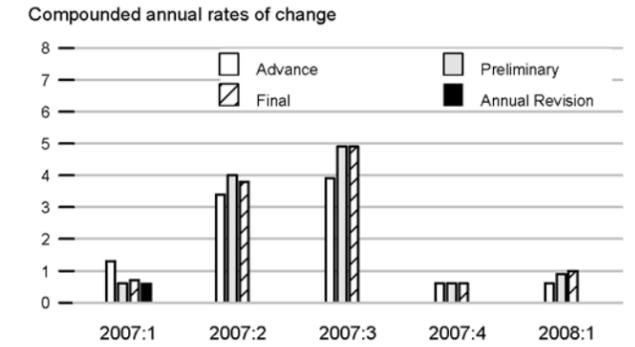
	Unempl. Rate	Retail and Food Services Sales			Industrial Production			Treasury Yields					
		Billions of dollars	Percent change		Index	Percent change		(Percent)					
			Monthly/quarterly	Annual rate	Year ago		Monthly/quarterly	Annual rate	Year ago	3-mo	10-yr		
2003	6.0	3614.120			4.2	101.2448			1.2	1.01	4.02		
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	4485.027			4.0	111.3932			1.7	4.35	4.63		
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	1119.062	1.3	5.1	4.0	111.0922	0.8	3.2	1.4	4.74	4.85		
	3	1124.771	0.5	2.1	3.9	112.0778	0.9	3.6	1.8	4.30	4.73		
	4	1135.991	1.0	4.1	4.7	112.1693	0.1	0.3	2.1	3.39	4.26		
2008	1	1138.145	0.2	0.8	3.0	112.0823	-0.1	-0.3	1.7	2.04	3.66		
	2									1.63	3.89		
2006	Jun	4.6	358.115	-0.1	-1.2	4.6	109.8664	0.5	5.9	2.1	4.79	5.11	
	Jul	4.7	361.048	0.8	10.3	4.1	110.1428	0.3	3.1	2.4	4.95	5.09	
	Aug	4.7	361.877	0.2	2.8	5.8	110.2365	0.1	1.0	2.3	4.96	4.88	
	Sep	4.5	359.224	-0.7	-8.5	5.0	109.8273	-0.4	-4.4	3.8	4.81	4.72	
	Oct	4.4	359.706	0.1	1.6	4.5	109.7437	-0.1	-0.9	2.5	4.92	4.73	
	Nov	4.5	360.428	0.2	2.4	4.0	109.5274	-0.2	-2.3	1.2	4.94	4.60	
	Dec	4.4	365.338	1.4	17.6	5.3	110.1754	0.6	7.3	1.3	4.85	4.56	
	2007	Jan	4.6	365.610	0.1	0.9	2.1	109.7791	-0.4	-4.2	0.9	4.98	4.76
		Feb	4.5	368.271	0.7	9.1	3.6	110.5181	0.7	8.4	1.6	5.03	4.72
		Mar	4.4	371.322	0.8	10.4	4.1	110.4036	-0.1	-1.2	1.3	4.94	4.56
		Apr	4.5	370.568	-0.2	-2.4	3.1	110.9530	0.5	6.1	1.4	4.87	4.69
		May	4.5	376.222	1.5	19.9	5.0	110.9686	0.0	0.2	1.5	4.73	4.75
Jun		4.6	372.272	-1.0	-11.9	4.0	111.3551	0.3	4.3	1.4	4.61	5.10	
Jul		4.7	373.615	0.4	4.4	3.5	112.0024	0.6	7.2	1.7	4.82	5.00	
Aug		4.7	374.336	0.2	2.3	3.4	111.9712	-0.0	-0.3	1.6	4.20	4.67	
Sep		4.7	376.820	0.7	8.3	4.9	112.2598	0.3	3.1	2.2	3.89	4.52	
Oct		4.8	376.802	-0.0	-0.1	4.8	111.8262	-0.4	-4.5	1.9	3.90	4.53	
Nov		4.7	381.280	1.2	15.2	5.8	112.2962	0.4	5.2	2.5	3.27	4.15	
Dec		5.0	377.909	-0.9	-10.1	3.4	112.3855	0.1	1.0	2.0	3.00	4.10	
2008	Jan	4.9	380.019	0.6	6.9	3.9	112.5164	0.1	1.4	2.5	2.75	3.74	
	Feb	4.8	378.106	-0.5	-5.9	2.7	111.7923	-0.6	-7.5	1.2	2.12	3.74	
	Mar	5.1	380.020	0.5	6.2	2.3	111.9382	0.1	1.6	1.4	1.26	3.51	
	Apr	5.0	381.563	0.4	5.0	3.0	111.1016	-0.7	-8.6	0.1	1.29	3.68	
	May	5.5	385.448	1.0	12.9	2.5	110.9051	-0.2	-2.1	-0.1	1.73	3.88	
	Jun										1.86	4.10	

	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
2003	137729	1248		0.9	129996	-344		-0.3	98.6			-1.4
2004	139242	1512		1.1	131419	1423		1.1	100.2			1.6
2005	141716	2474		1.8	133695	2276		1.7	102.8			2.6
2006	144421	2706		1.9	136092	2397		1.8	105.7			2.9
2007	146049	1628		1.1	137618	1527		1.1	107.2			1.4
2006	1	143356	704	2.0	135383	722	2.2	2.1	104.9	0.9	3.8	3.2
	2	144083	727	2.0	135840	457	1.4	1.9	105.6	0.7	2.7	3.1
	3	144604	521	1.5	136354	514	1.5	1.7	106.0	0.4	1.7	2.8
	4	145642	1038	2.9	136789	434	1.3	1.6	106.4	0.3	1.4	2.4
2007	1	145983	340	0.9	137184	395	1.2	1.3	106.6	0.2	0.8	1.6
	2	145904	-78	-0.2	137500	316	0.9	1.2	107.2	0.5	2.1	1.5
	3	146019	115	0.3	137758	259	0.8	1.0	107.5	0.3	1.1	1.4
	4	146291	272	0.7	138031	272	0.8	0.9	107.7	0.2	1.0	1.3
2008	1	146070	-221	-0.6	137917	-113	-0.3	0.5	107.4	-0.3	-1.1	0.8
2006	May	144088	297	2.5	135816	22	0.2	1.9	105.4	-0.2	-2.2	3.1
	Jun	144369	281	2.4	135910	94	0.8	1.7	105.8	0.4	4.7	3.1
	Jul	144295	-74	-0.6	136172	262	2.3	1.7	106.0	0.2	2.3	3.1
	Aug	144671	376	3.2	136363	191	1.7	1.6	106.2	0.2	2.3	3.1
	Sep	144846	175	1.5	136528	165	1.5	1.7	105.9	-0.3	-3.3	2.3
	Oct	145395	549	4.6	136601	73	0.6	1.7	106.3	0.4	4.6	2.6
2007	Jan	145915	-34	-0.3	137108	126	1.1	1.5	106.5	-0.2	-2.2	1.6
	Feb	145888	-27	-0.2	137133	25	0.2	1.3	106.2	-0.3	-3.3	1.3
	Mar	146145	257	2.1	137310	177	1.6	1.2	107.1	0.8	10.7	1.9
	Apr	145713	-432	-3.5	137356	46	0.4	1.2	106.8	-0.3	-3.3	1.1
	May	145913	200	1.7	137518	162	1.4	1.3	107.1	0.3	3.4	1.6
	Jun	146087	174	1.4	137625	107	0.9	1.3	107.6	0.5	5.7	1.7
	Jul	146045	-42	-0.3	137682	57	0.5	1.1	107.4	-0.2	-2.2	1.3
	Aug	145753	-292	-2.4	137756	74	0.6	1.0	107.4	0.0	0.0	1.1
	Sep	146260	507	4.3	137837	81	0.7	1.0	107.6	0.2	2.3	1.6
	Oct	146016	-244	-2.0	137977	140	1.2	1.0	107.7	0.1	1.1	1.3
	Nov	146647	631	5.3	138037	60	0.5	0.9	107.7	0.0	0.0	1.4
	Dec	146211	-436	-3.5	138078	41	0.4	0.8	107.8	0.1	1.1	1.0
2008	Jan	146248	37	0.3	138002	-76	-0.7	0.7	107.4	-0.4	-4.4	0.8
	Feb	145993	-255	-2.1	137919	-83	-0.7	0.6	107.3	-0.1	-1.1	1.0
	Mar	145969	-24	-0.2	137831	-88	-0.8	0.4	107.6	0.3	3.4	0.5
	Apr	146331	362	3.0	137803	-28	-0.2	0.3	107.2	-0.4	-4.4	0.4
	May	146046	-285	-2.3	137754	-49	-0.4	0.2	107.1	-0.1	-1.1	0.0

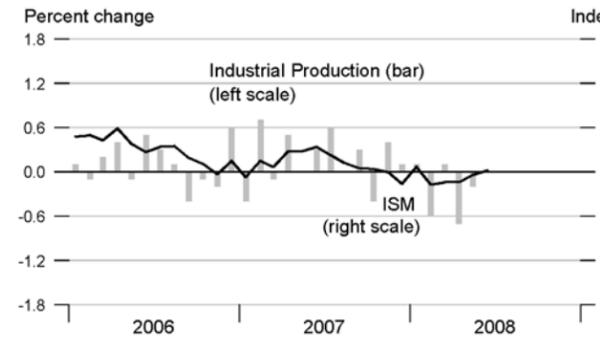
Real Final Sales and GDP



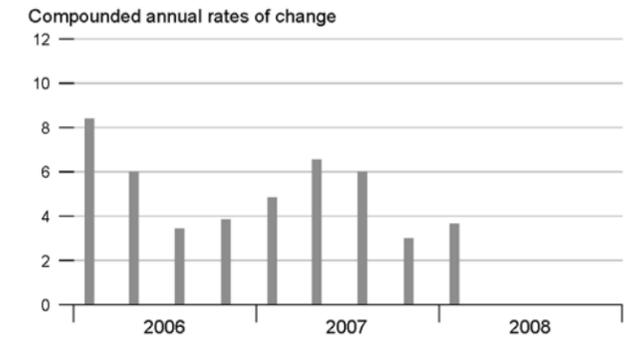
Real GDP Revisions



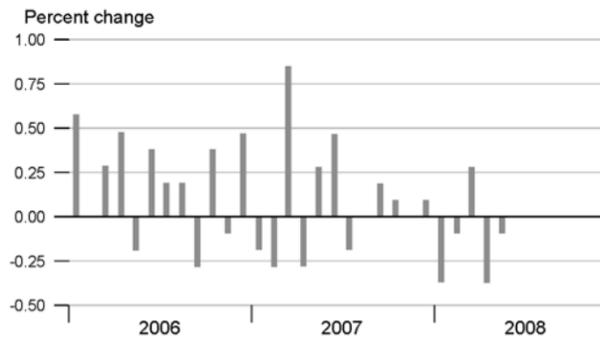
Industrial Production and ISM Index



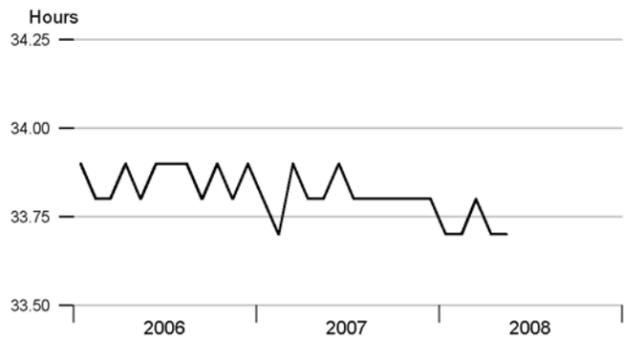
Nominal Gross Domestic Product



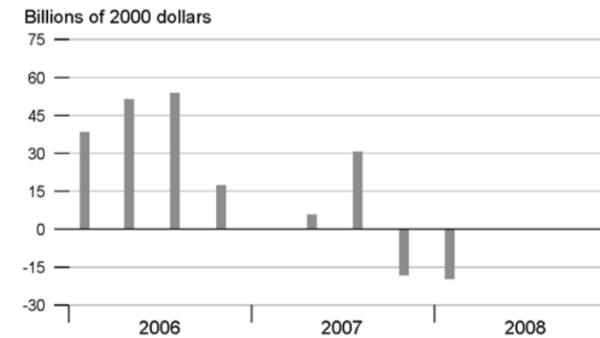
Aggregate Private Nonfarm Hours



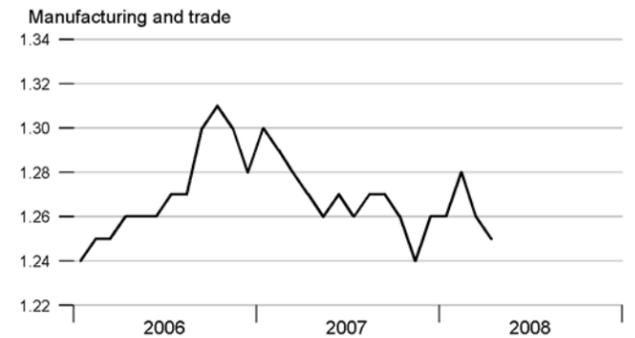
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

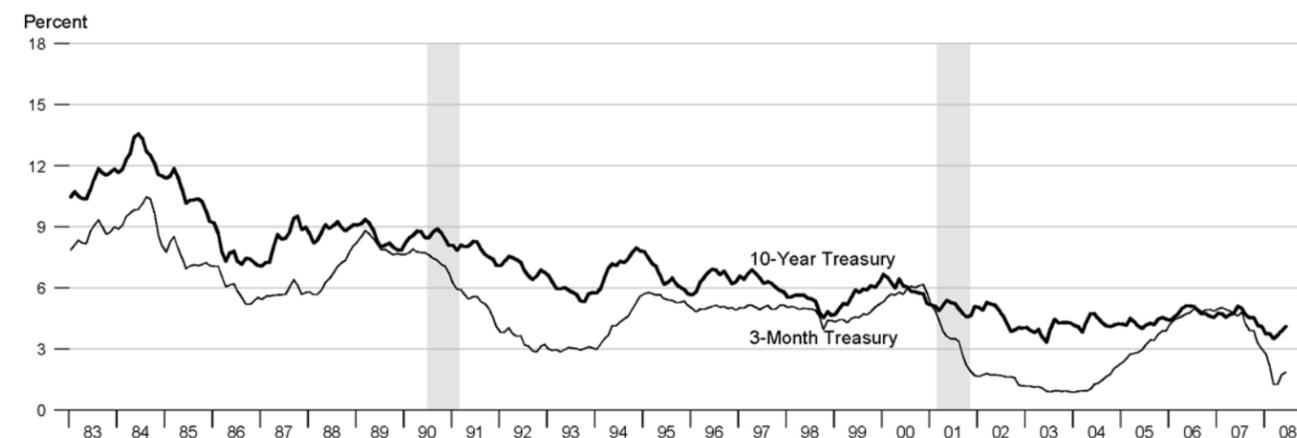


Inventory-Sales Ratio

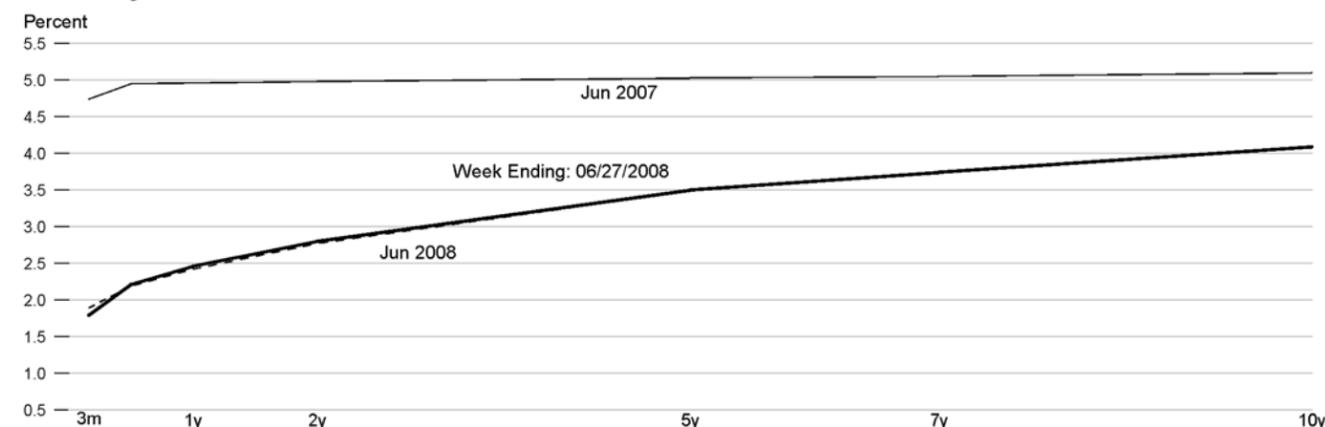


	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories		
	Billions of \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago	
2004	11685.9		6.6	10675.757		3.6	10619.790		3.3		54.268	
2005	12433.9		6.4	11003.448		3.1	10966.873		3.3		33.237	
2006	13194.7		6.1	11319.358		2.9	11275.890		2.8		40.289	
2007	13841.3		4.9	11566.844		2.2	11561.481		2.5		4.538	
2005 1	12154.0	7.1	6.6	10878.380	3.1	3.2	10812.950	2.9	2.9	63.393	61.378	
2005 2	12317.4	5.5	6.1	10954.069	2.8	3.0	10940.422	4.8	3.5	10.070	47.675	
2005 3	12558.8	8.1	6.6	11074.326	4.5	3.2	11064.771	4.6	3.7	5.906	34.137	
2005 4	12705.5	4.8	6.3	11107.213	1.2	2.9	11049.544	-0.5	2.9	53.580	33.237	
2006 1	12964.6	8.4	6.7	11238.662	4.8	3.3	11196.147	5.4	3.5	38.422	26.995	
2006 2	13155.0	6.0	6.8	11306.694	2.4	3.2	11252.074	2.0	2.8	51.390	37.325	
2006 3	13266.9	3.4	5.6	11336.734	1.1	2.4	11279.696	1.0	1.9	53.944	49.334	
2006 4	13392.3	3.8	5.4	11395.538	2.1	2.6	11375.837	3.5	3.0	17.401	40.289	
2007 1	13551.9	4.9	4.5	11412.619	0.6	1.5	11411.560	1.3	1.9	0.097	30.708	
2007 2	13768.8	6.6	4.7	11520.115	3.8	1.9	11512.777	3.6	2.3	5.762	19.301	
2007 3	13970.5	6.0	5.3	11658.927	4.9	2.8	11626.389	4.0	3.1	30.638	13.475	
2007 4	14074.2	3.0	5.1	11675.714	0.6	2.5	11695.200	2.4	2.8	-18.344	4.538	
2008 1	14201.1	3.7	4.8	11703.594	1.0	2.5	11722.529	0.9	2.7	-19.614	-0.390	
	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
2004	7561.380		3.6	1084.786		6.3	1712.757		7.3	1144.264		5.8
2005	7803.593		3.2	1137.415		4.9	1831.427		6.9	1225.790		7.1
2006	8044.054		3.1	1180.469		3.8	1874.694		2.4	1306.762		6.6
2007	8277.843		2.9	1235.391		4.7	1819.494		-2.9	1368.354		4.7
2005 1	7709.377	2.4	3.1	1116.030	2.2	4.7	1785.306	4.0	8.3	1199.486	3.3	9.1
2005 2	7775.220	3.5	3.4	1146.298	11.3	7.0	1819.775	7.9	7.1	1214.147	5.0	7.7
2005 3	7852.791	4.1	3.5	1163.548	6.2	6.6	1854.949	8.0	6.8	1239.503	8.6	6.8
2005 4	7876.850	1.2	2.8	1123.791	-13.0	1.2	1865.645	2.3	5.5	1250.025	3.4	5.1
2006 1	7961.901	4.4	3.3	1167.761	16.6	4.6	1901.356	7.9	6.5	1289.723	13.3	7.5
2006 2	8009.279	2.4	3.0	1170.169	0.8	2.1	1892.290	-1.9	4.0	1303.165	4.2	7.3
2006 3	8063.801	2.8	2.7	1186.322	5.6	2.0	1869.607	-4.7	0.8	1319.428	5.1	6.4
2006 4	8141.236	3.9	3.4	1197.606	3.9	6.6	1835.541	-7.1	-1.6	1314.758	-1.4	5.2
2007 1	8215.706	3.7	3.2	1223.160	8.8	4.7	1815.191	-4.4	-4.5	1321.732	2.1	2.5
2007 2	8244.349	1.4	2.9	1228.366	1.7	5.0	1829.345	3.2	-3.3	1356.624	11.0	4.1
2007 3	8302.240	2.8	3.0	1241.912	4.5	4.7	1825.987	-0.7	-2.3	1387.278	9.3	5.1
2007 4	8349.078	2.3	2.6	1248.128	2.0	4.2	1807.451	-4.0	-1.5	1407.780	6.0	7.1
2008 1	8372.868	1.1	1.9	1229.126	-6.0	0.5	1775.332	-6.9	-2.2	1409.714	0.6	6.7

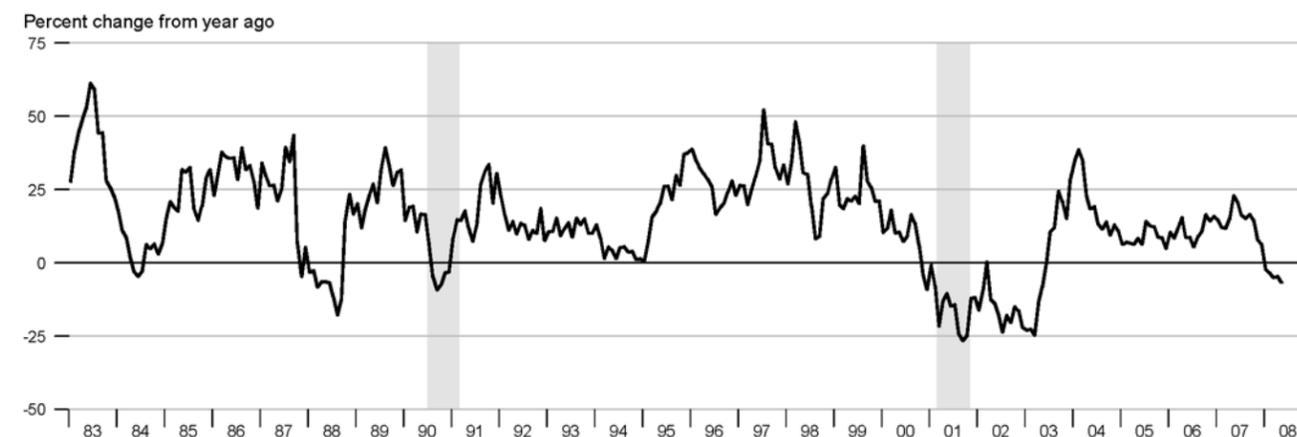
Interest Rates



Treasury Yield Curve

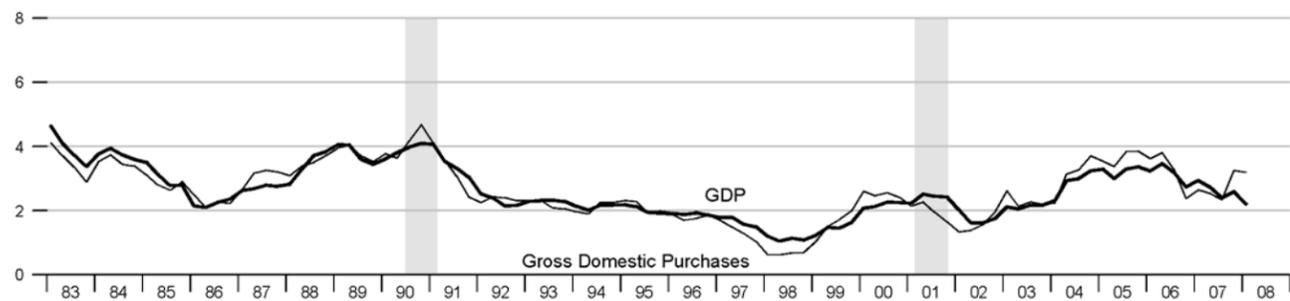


Standard and Poor's 500 Index with Reinvested Dividends



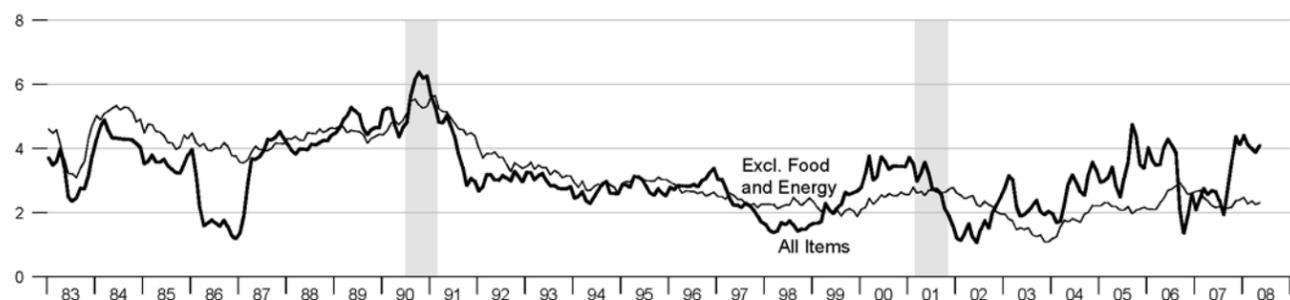
NIPA Chain Price Indexes

Percent change from year ago



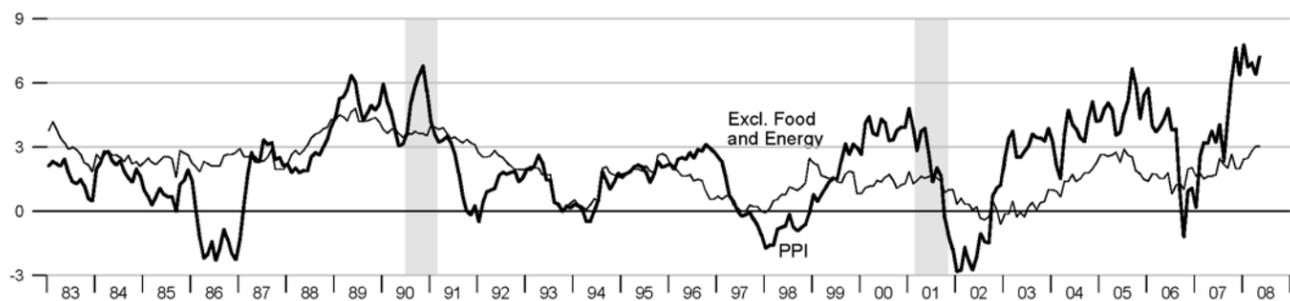
Consumer Price Index

Percent change from year ago



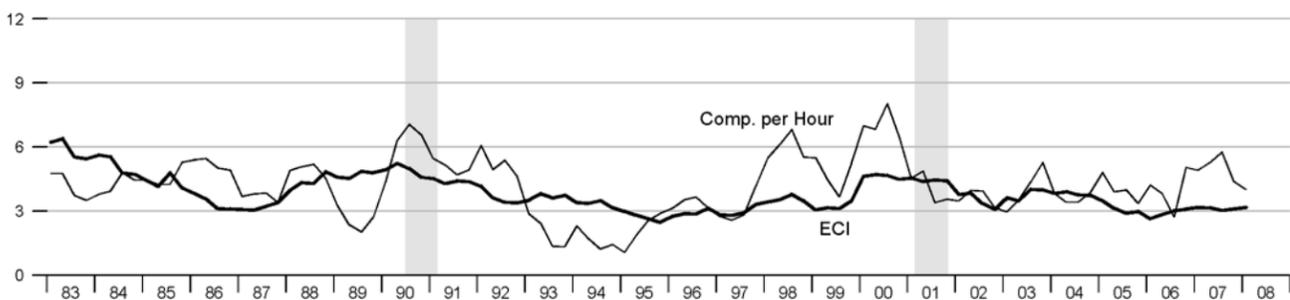
Producer Price Index, Finished Goods

Percent change from year ago



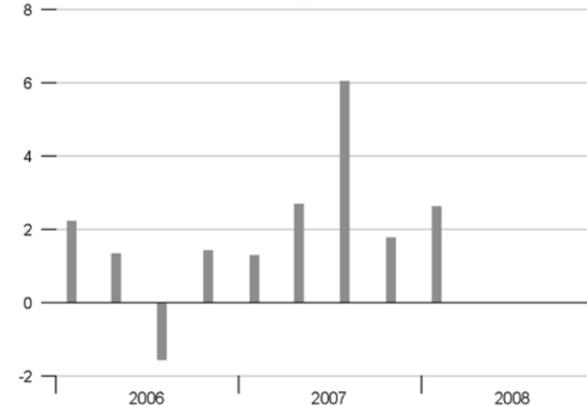
Employment Cost Index and Compensation per Hour

Percent change from year ago



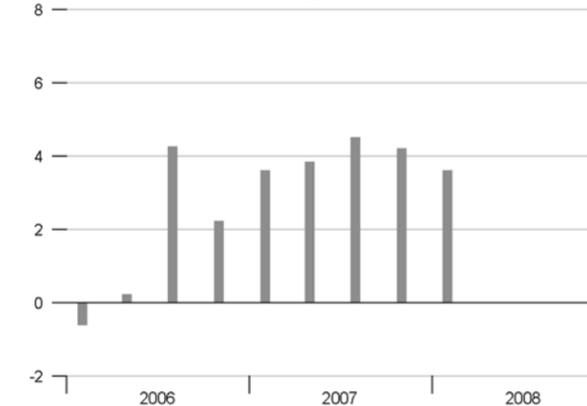
Nonfarm Output per Hour

Compounded annual rates of change

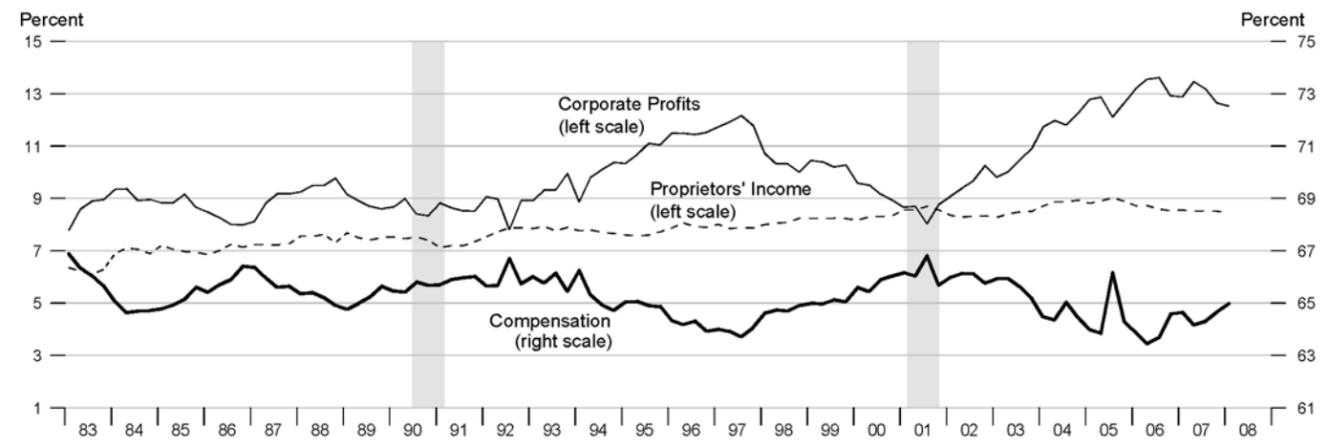


Manufacturing Output per Hour

Compounded annual rates of change

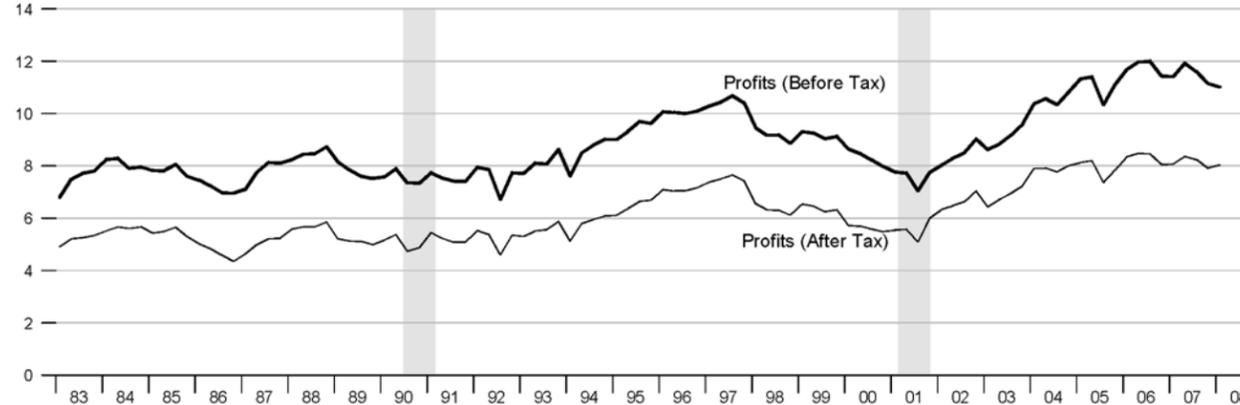


Selected Component Shares of National Income

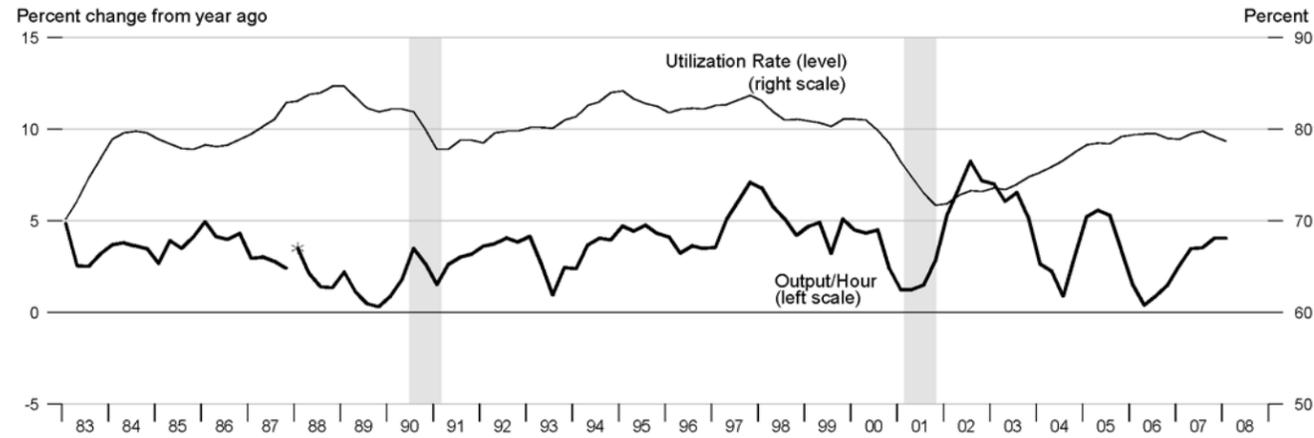


Corporate Profits

Percent of GDP

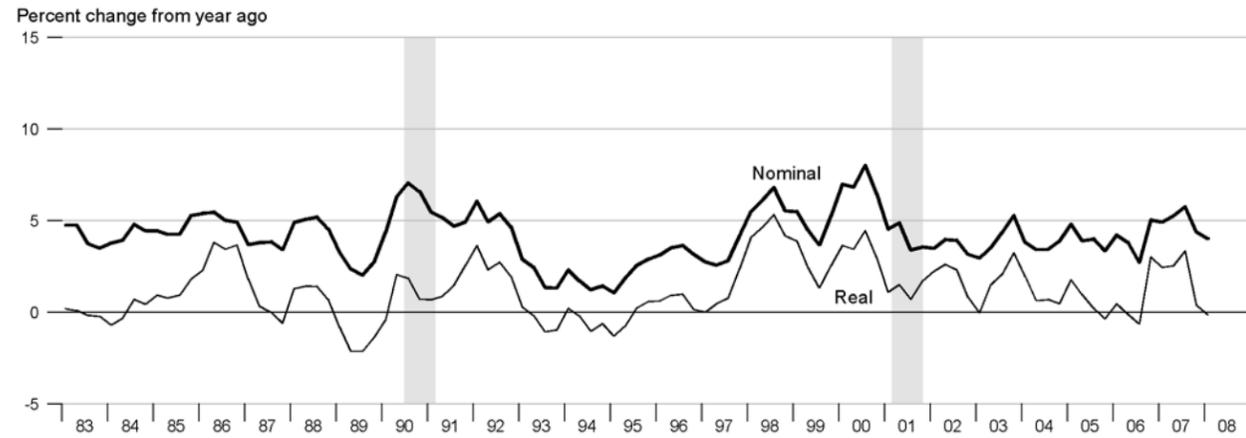


Output per Hour and Capacity Utilization, Manufacturing

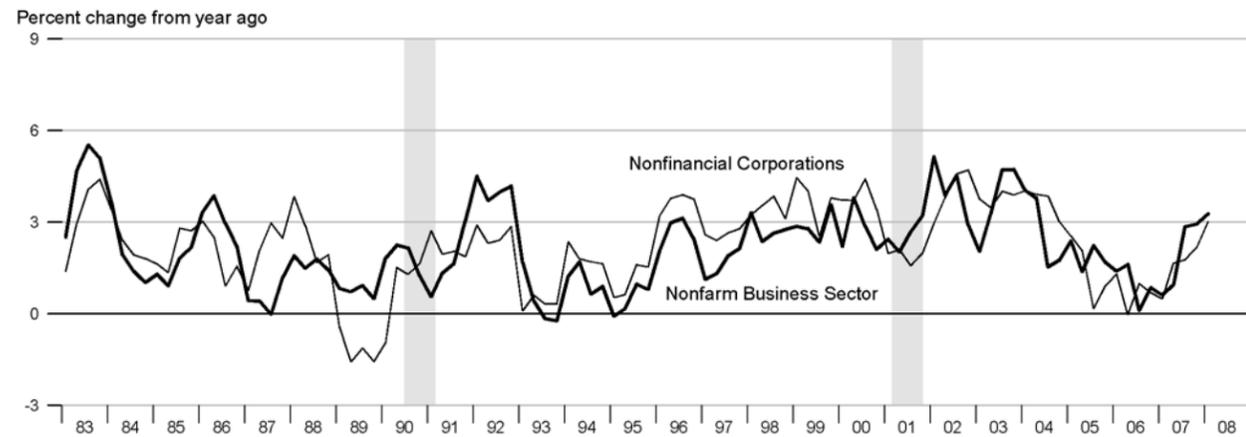


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

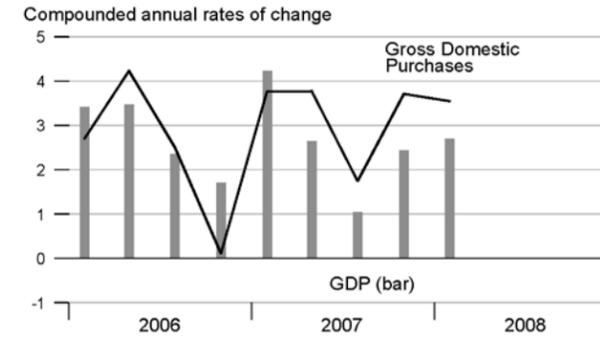
Nonfarm Compensation per Hour



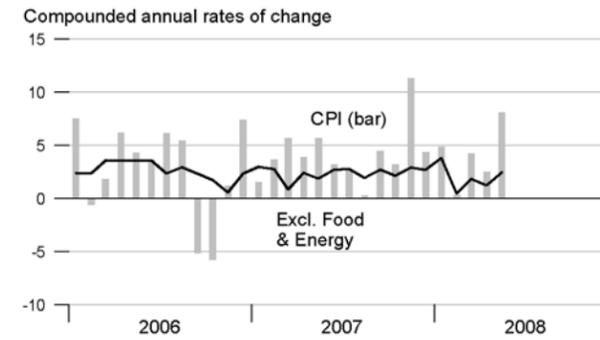
Output per Hour, Nonfarm Business and Nonfinancial Corporations



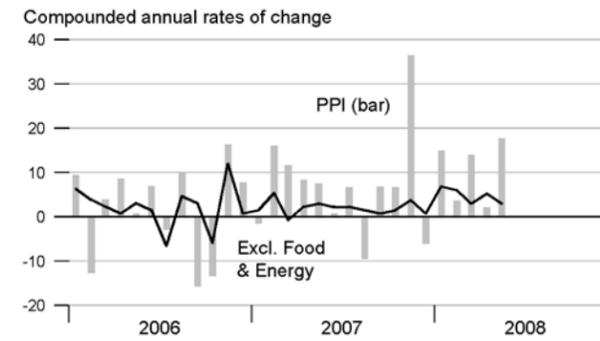
NIPA Chain Price Indexes



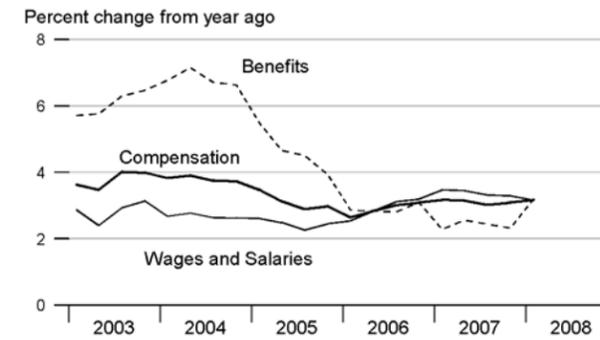
Consumer Price Index



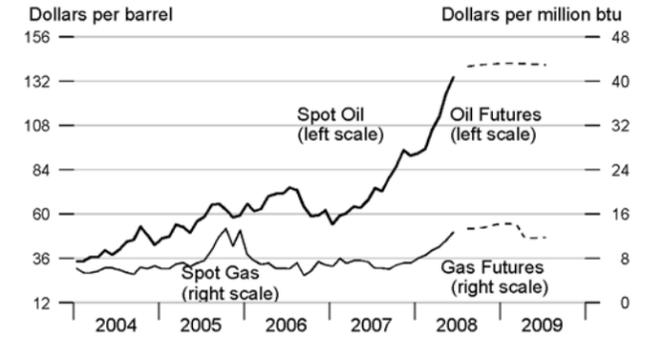
Producer Price Index, Finished Goods



Employment Cost Index

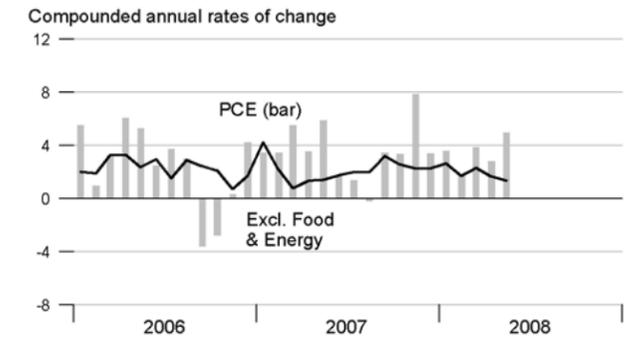


Oil & Natural Gas Prices: Spot & Futures

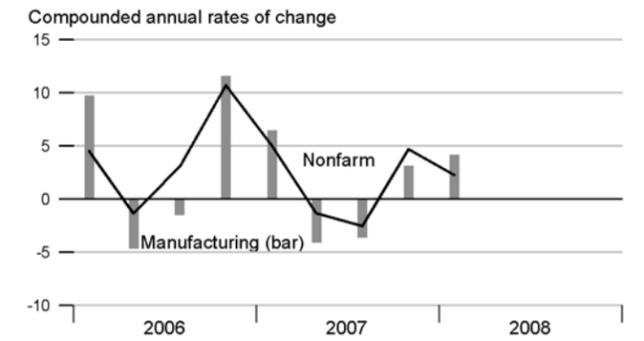


Note: Futures prices as of 06/30/2008.

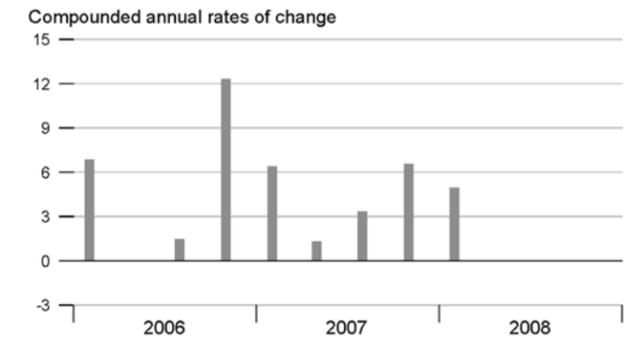
Consumption Chain Price Index



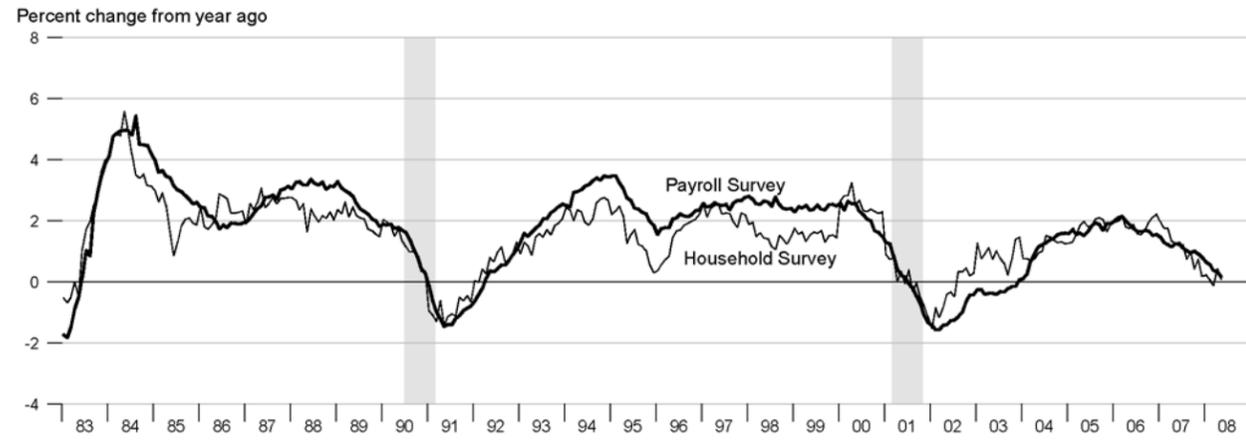
Unit Labor Cost



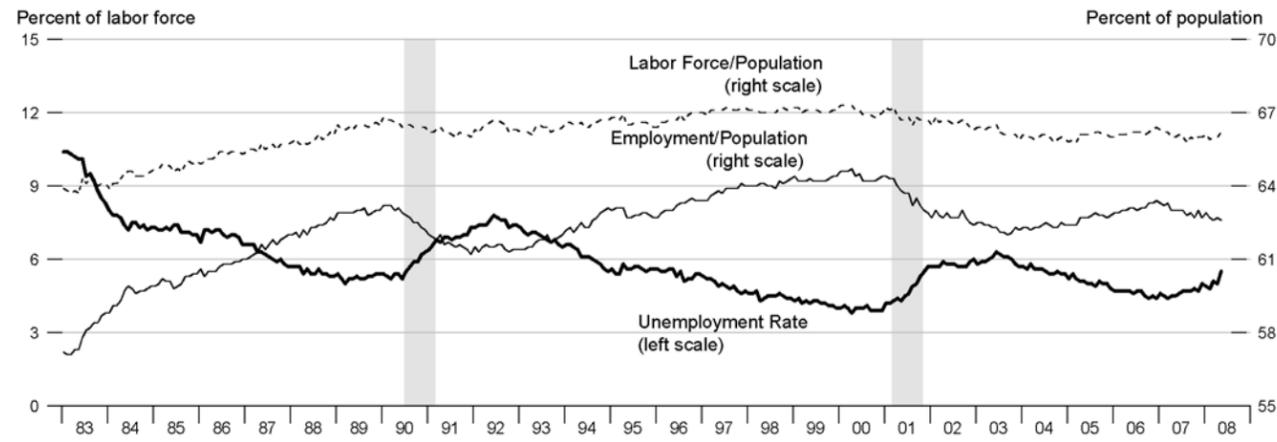
Compensation per Hour



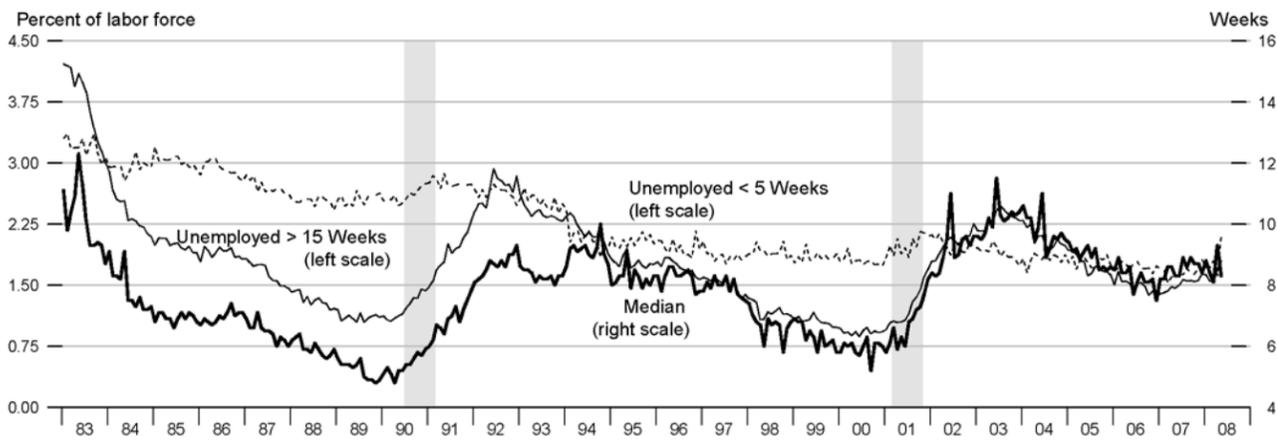
Employment



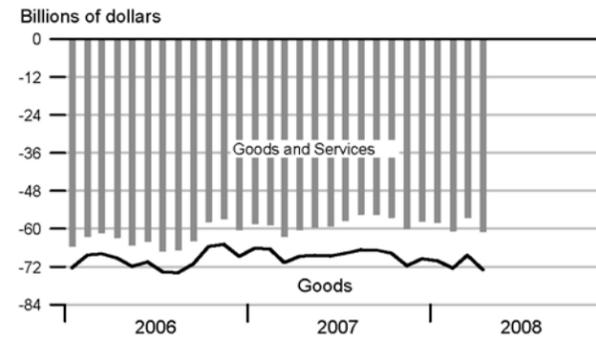
Unemployment, Labor Force Participation, and Employment Rates



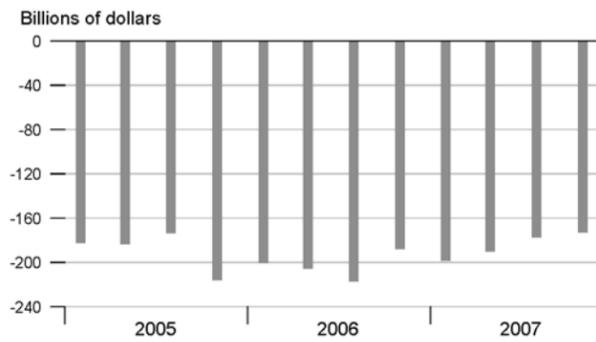
Duration of Unemployment



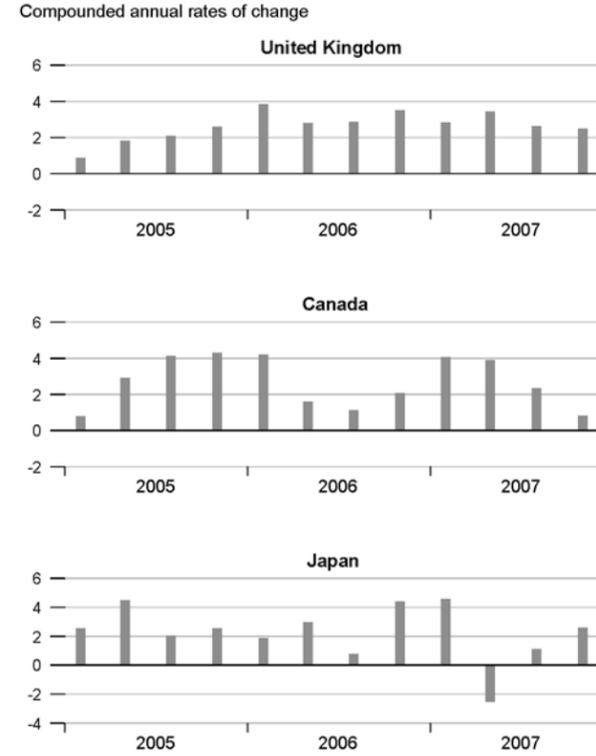
Trade Balance



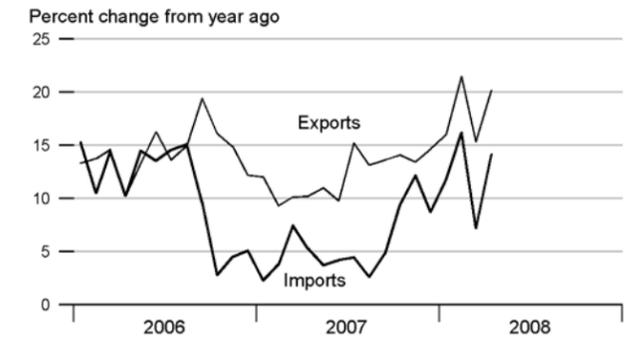
Current Account Balance



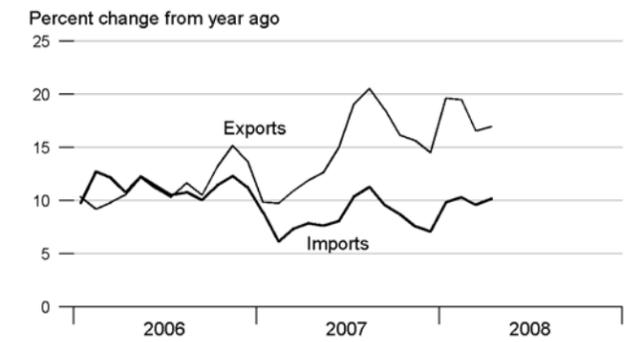
Real GDP Growth of Major Trading Partners



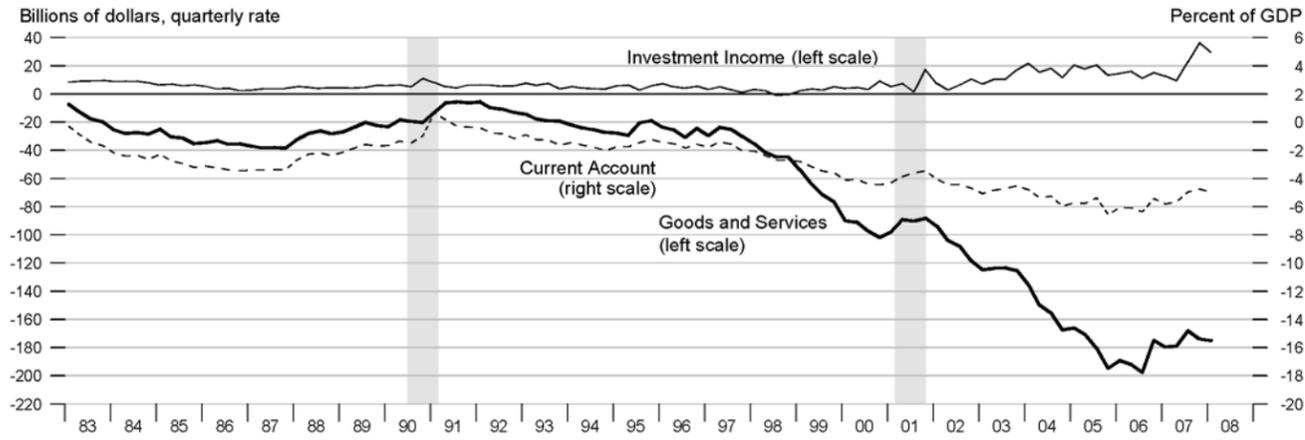
Goods Trade



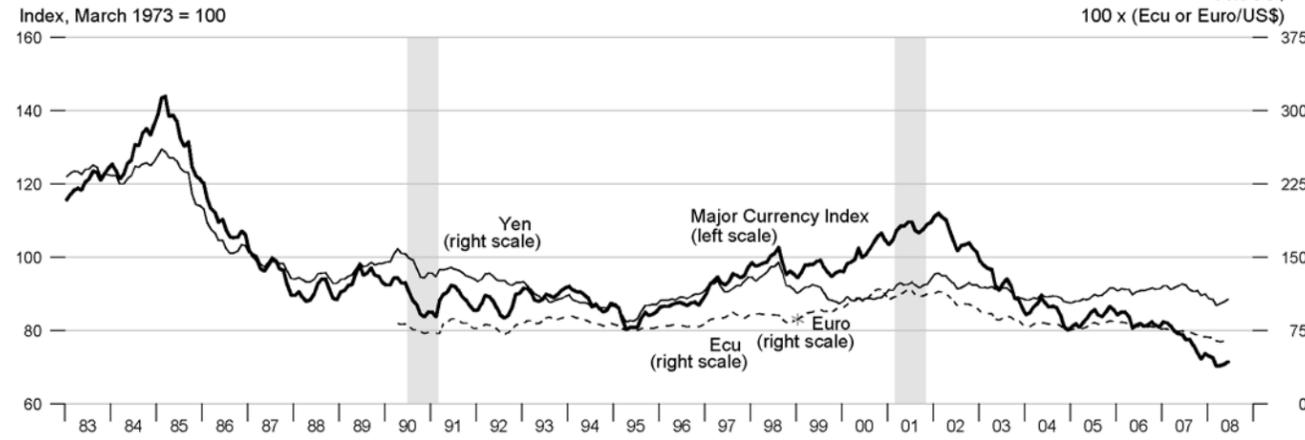
Services Trade



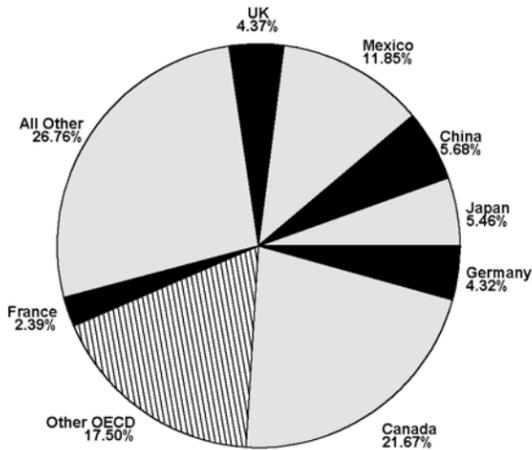
Current Account, Trade and Investment Income Balances



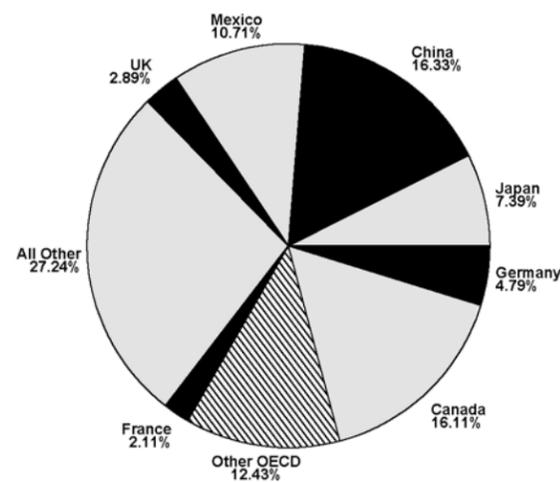
Exchange Rates



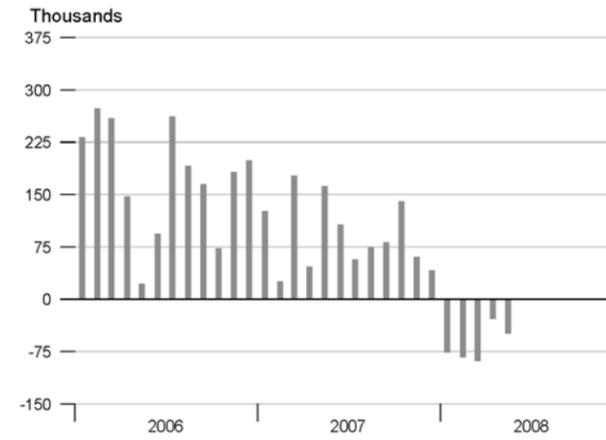
Goods Export Shares, 2007



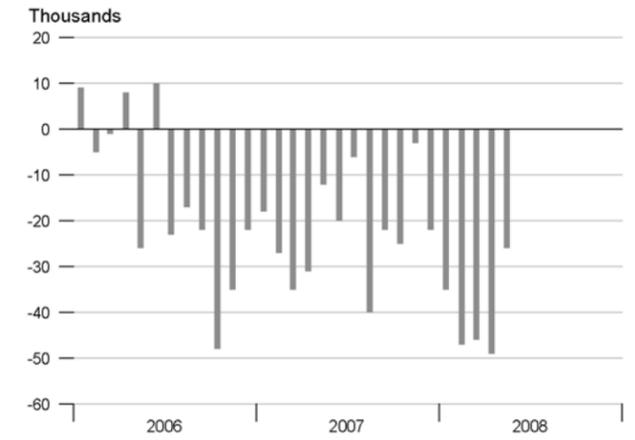
Goods Import Shares, 2007



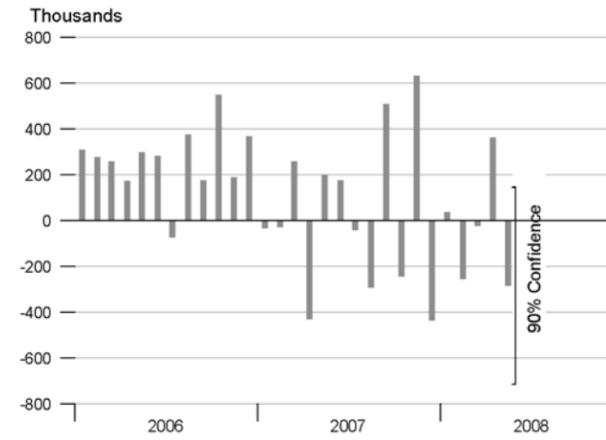
Change in Nonfarm Payrolls



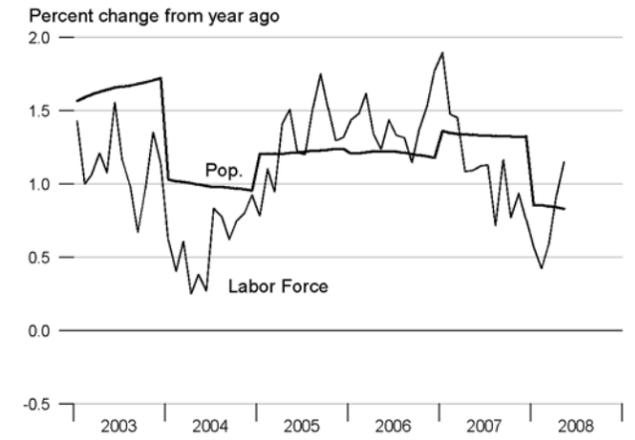
Change in Manufacturing Payrolls



Change in Household Employment



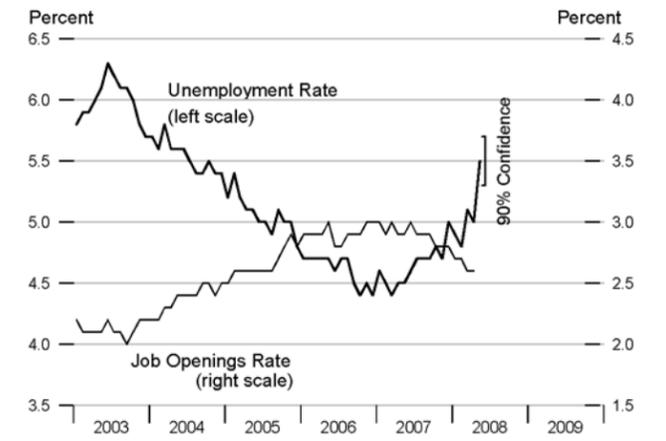
Labor Force and Population



Available Labor Supply and Components

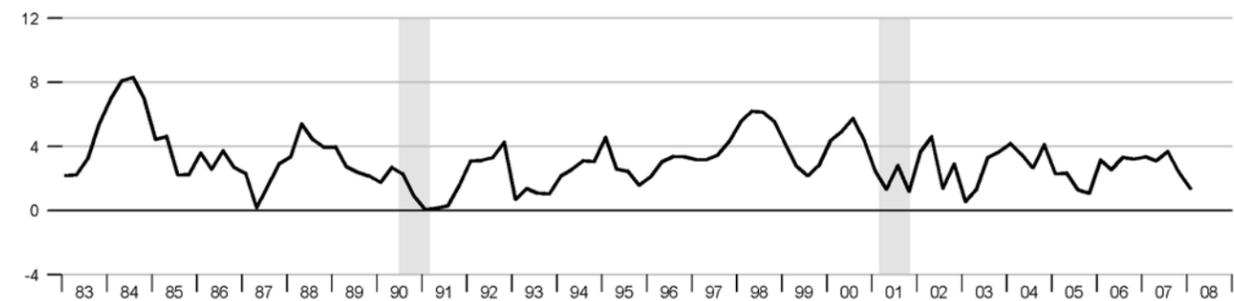


Unemployment Rate & Job Openings Rate



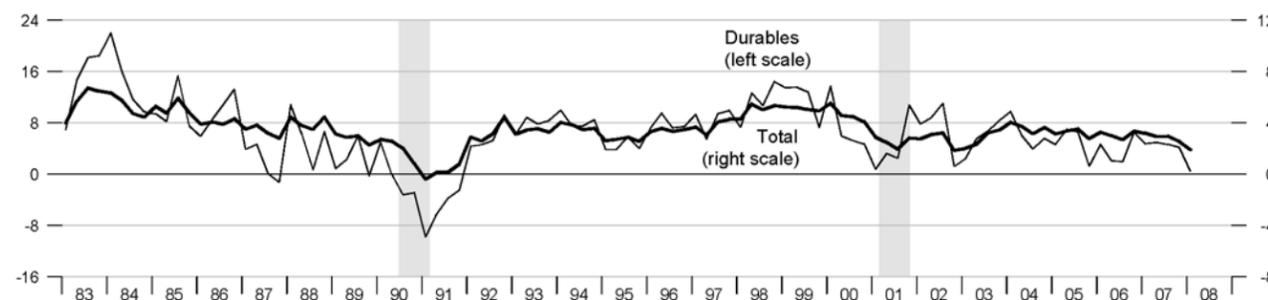
Real Disposable Personal Income

Percent change from year ago, quarterly data



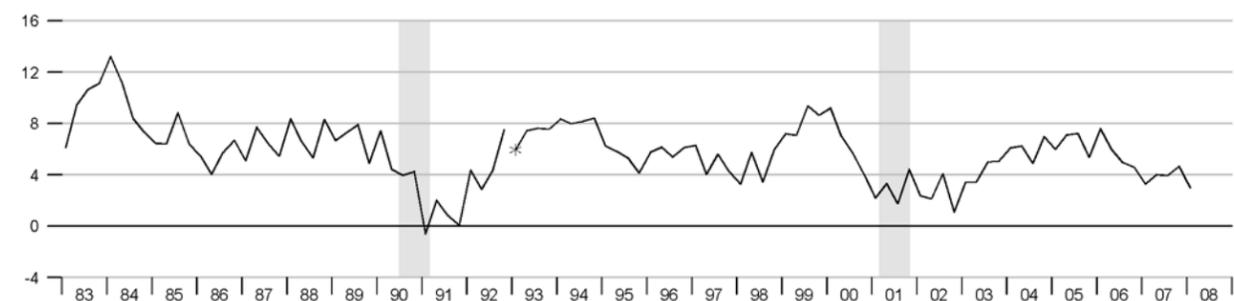
Real Consumption

Percent change from year ago, quarterly data



Retail and Food Services Sales

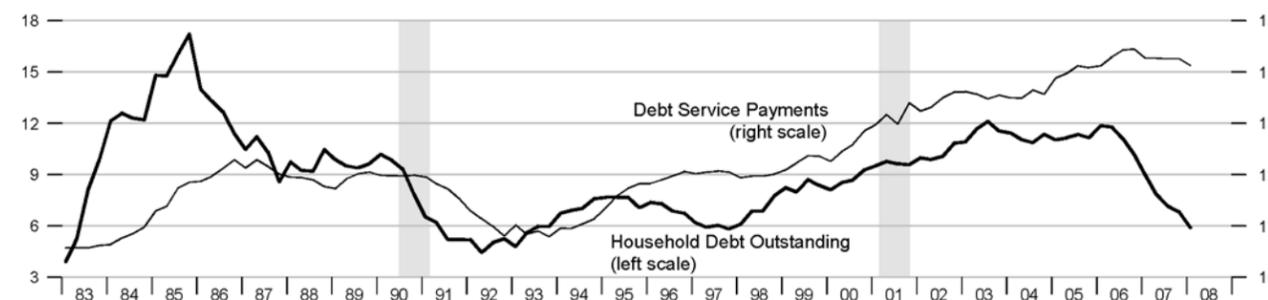
Percent change from year ago, quarterly average



*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).

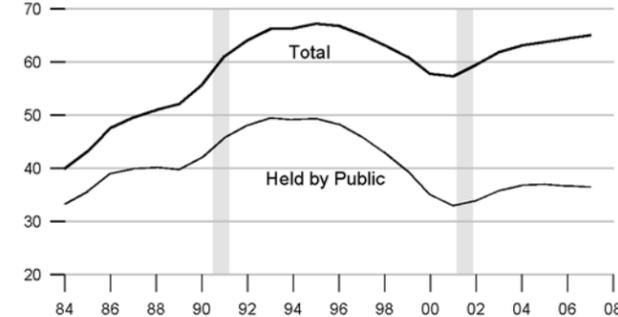
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data



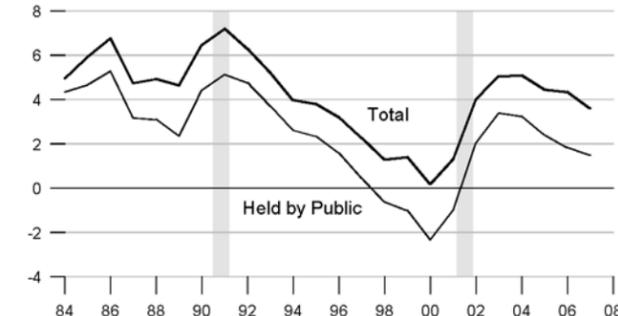
Federal Debt

Percent of GDP



Change in Federal Debt

Percent of GDP



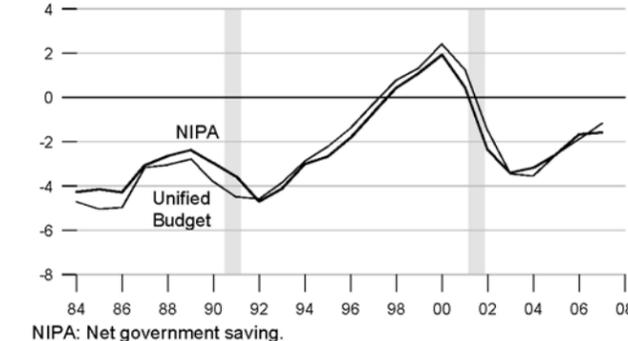
Federal Government Debt

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
2005		7932.7	3331.1	4601.6	736.4	3864.9	1930.6
2006		8507.0	3663.8	4843.2	768.9	4074.2	2027.3
2007		9007.7	3958.4	5049.2	779.6	4269.7	2240.3
2004	March	7131.1	2954.4	4176.7	674.1	3502.8	1677.1
	June	7274.3	3055.6	4218.7	687.4	3531.5	1739.6
	September	7379.1	3075.7	4303.4	700.3	3607.0	1798.7
	December	7596.1	3189.8	4406.4	717.8	3690.6	1853.4
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	2193.4
	September	9007.7	3958.4	5049.2	779.6	4269.7	2240.3
	December	9229.2	4092.9	5136.3	740.6	4395.7	2335.3

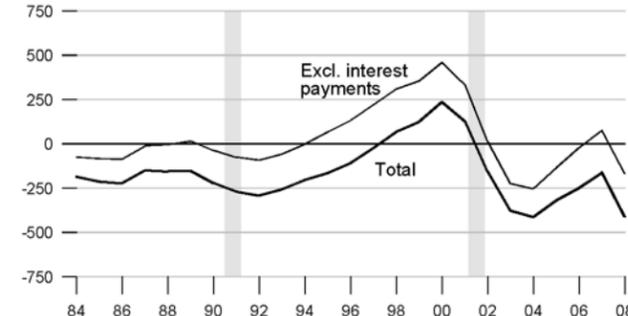
Federal Surplus (+) / Deficit (-)

Percent of GDP

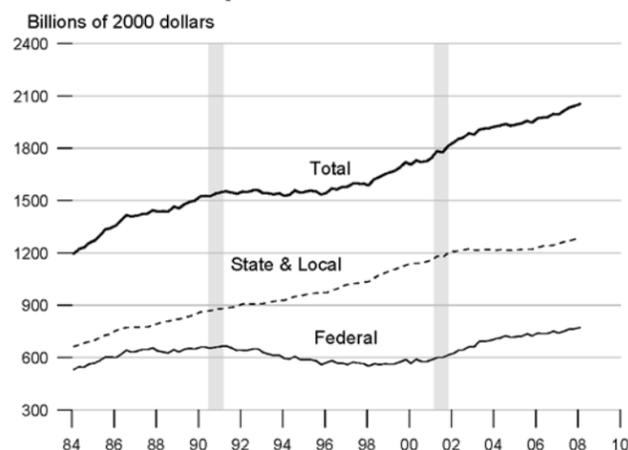


Federal Surplus (+) / Deficit (-), Unified Basis

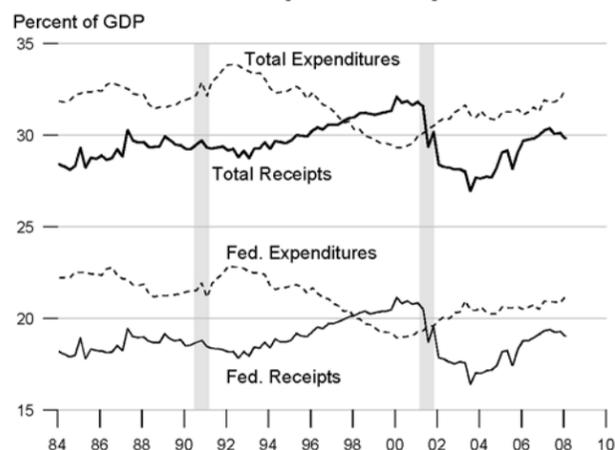
Billions of dollars, fiscal years



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures

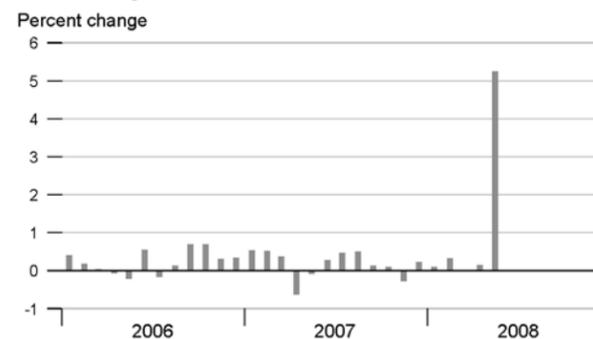


Government Budgets

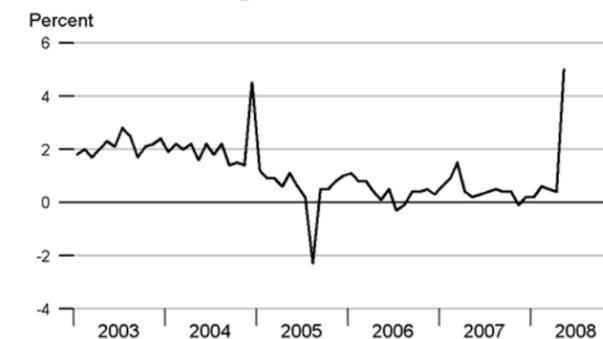
Billions of dollars

Calendar Years	National Income Accounts			Unified Budget			Fiscal Years		
	State and Local	Federal		Federal		Federal			
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1991	789.2	793.3	-4.1	1101.3	1315.0	-213.7	1055.1	1324.3	-269.2
1992	845.7	845.0	0.7	1147.2	1444.6	-297.4	1091.3	1381.6	-290.3
1993	886.9	886.0	0.9	1222.5	1496.0	-273.5	1154.5	1409.5	-255.1
1994	942.9	932.4	10.5	1320.8	1533.1	-212.3	1258.7	1461.9	-203.2
1995	990.2	978.2	12.0	1406.5	1603.5	-197.0	1351.9	1515.9	-164.0
1996	1043.3	1017.5	25.8	1524.0	1665.8	-141.8	1453.2	1560.6	-107.4
1997	1097.4	1058.3	39.1	1653.1	1708.9	-55.8	1579.4	1601.3	-21.9
1998	1163.2	1111.2	52.0	1773.8	1734.9	38.9	1722.0	1652.7	69.3
1999	1236.7	1186.3	50.4	1891.2	1787.6	103.6	1827.6	1702.0	125.6
2000	1319.5	1269.5	50.0	2053.8	1864.4	189.4	2025.5	1789.2	236.2
2001	1373.0	1368.2	4.8	2016.2	1969.5	46.7	1991.4	1863.2	128.2
2002	1410.1	1444.3	-34.2	1853.2	2101.1	-247.9	1853.4	2011.2	-157.8
2003	1494.2	1514.5	-20.3	1879.9	2252.1	-372.2	1782.5	2160.1	-377.6
2004	1594.3	1592.8	1.5	2008.9	2379.5	-370.6	1880.3	2293.0	-412.7
2005	1706.9	1691.7	15.2	2243.4	2561.6	-318.2	2153.9	2472.2	-318.3
2006	1797.7	1773.0	24.7	2495.8	2715.8	-220.0	2407.3	2655.4	-248.2
2007	1886.4	1898.2	-11.8	2673.5	2892.0	-218.5	2568.2	2730.2	-162.0
2006Q2	1803.7	1760.9	42.8	2471.5	2711.4	-239.9	772.1	675.7	96.5
2006Q3	1806.7	1794.4	12.3	2513.1	2752.3	-239.2	596.9	638.7	-41.7
2006Q4	1812.4	1804.8	7.6	2561.9	2743.4	-181.5	573.5	653.9	-80.4
2007Q1	1856.6	1862.4	-5.8	2619.7	2838.2	-218.5	547.4	725.4	-178.0
2007Q2	1889.9	1876.5	13.4	2670.1	2876.9	-206.8	824.4	686.9	137.5
2007Q3	1892.8	1905.8	-13.0	2689.4	2919.7	-230.3	622.3	664.2	-41.8
2007Q4	1906.2	1948.1	-41.9	2714.7	2933.2	-218.5	606.2	713.0	-106.8
2008Q1	1917.5	1985.1	-67.6	2701.6	3010.0	-308.4	539.8	745.7	-205.9

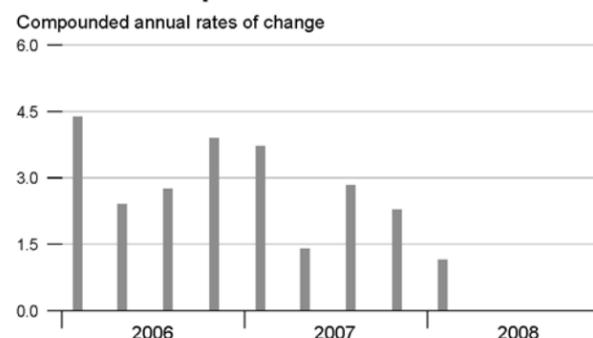
Real Disposable Personal Income



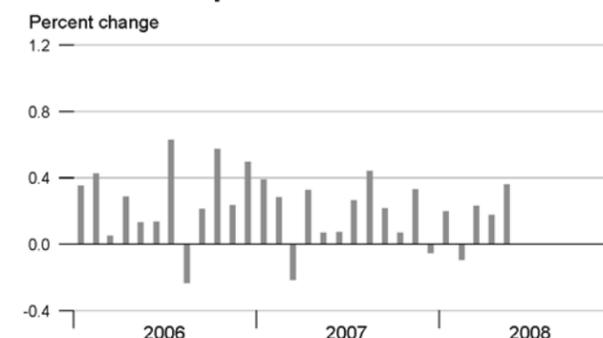
Personal Saving Rate



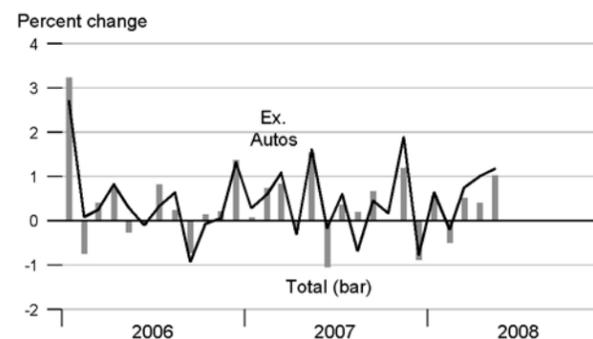
Real Consumption



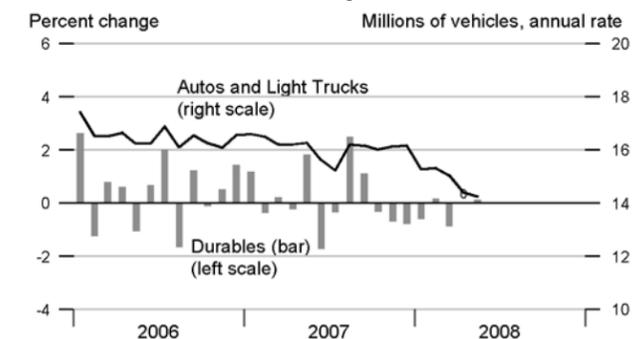
Real Consumption



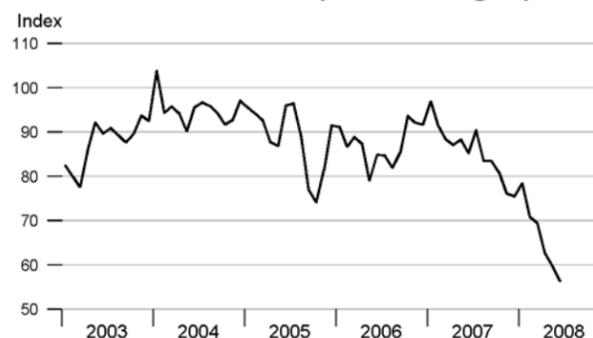
Retail & Food Services



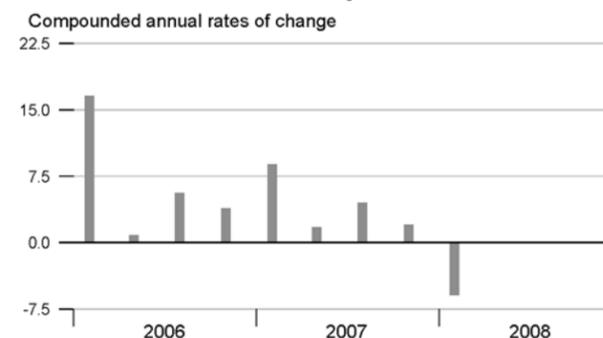
Real Durables Consumption & Vehicle Sales



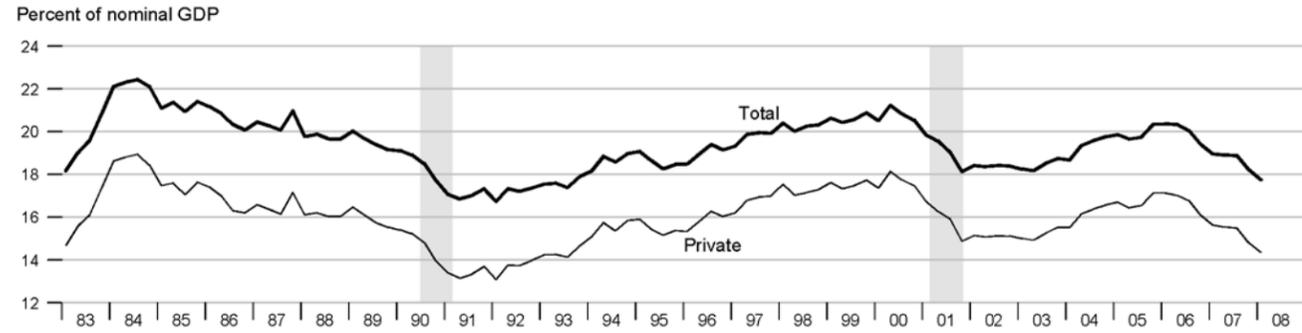
Consumer Sentiment (U. of Michigan)



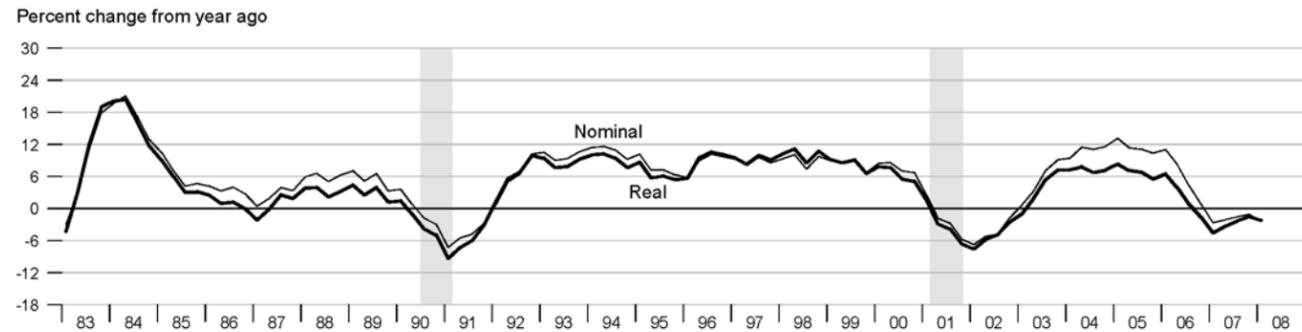
Real Durables Consumption



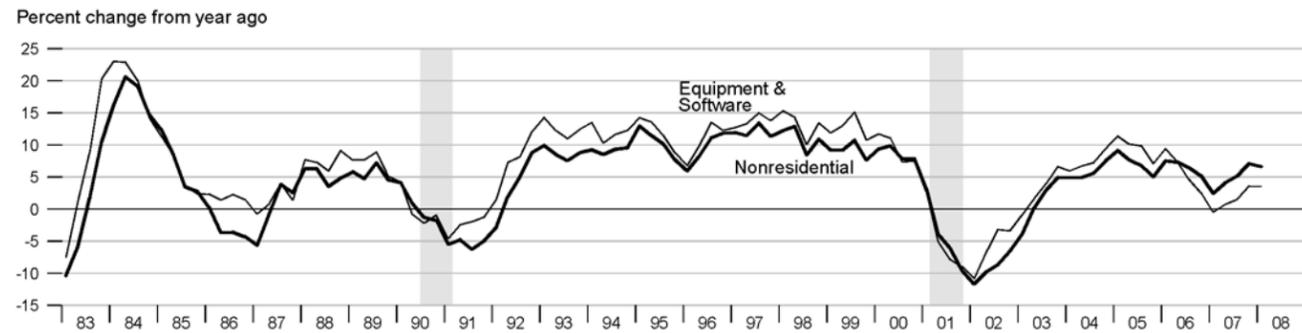
Investment



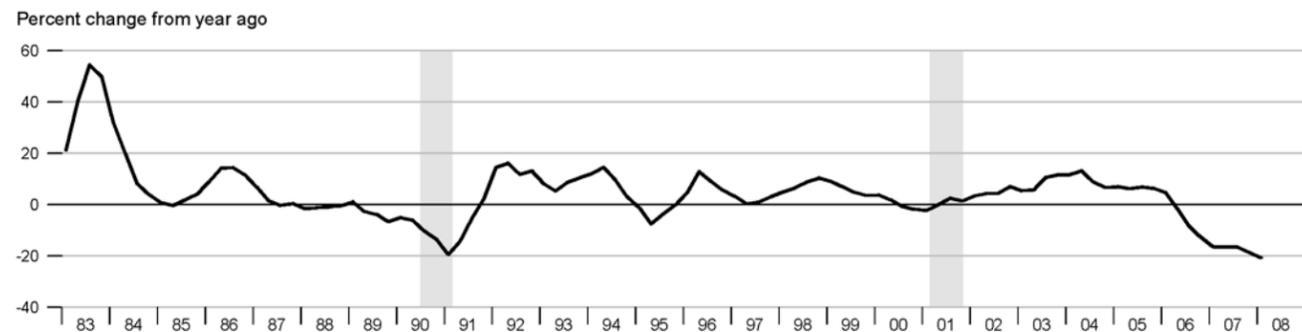
Private Fixed Investment



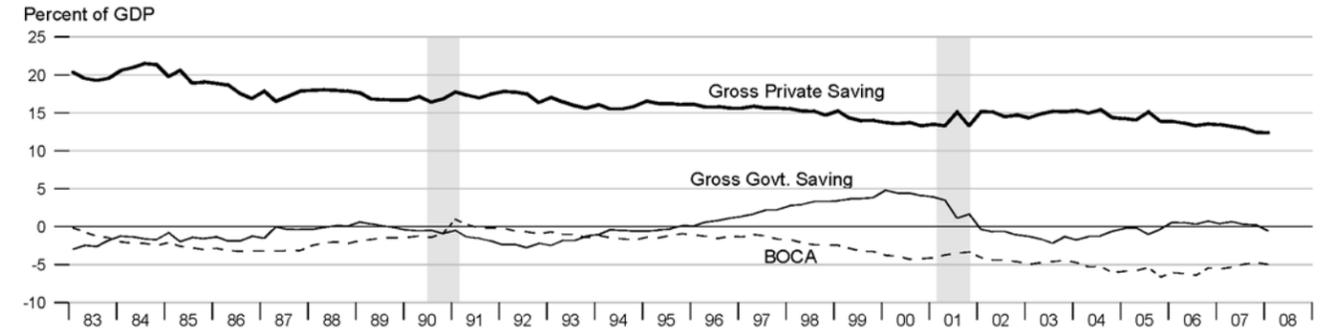
Real Nonresidential Fixed and Equipment & Software Investment



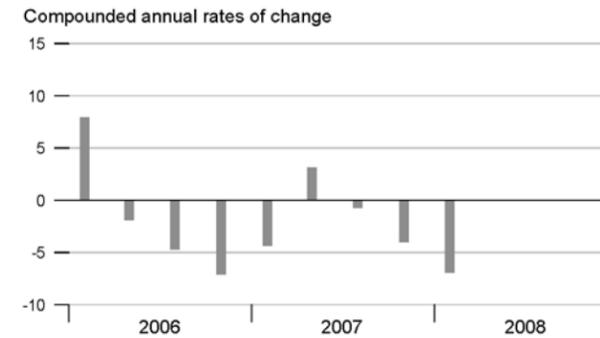
Real Residential Fixed Investment



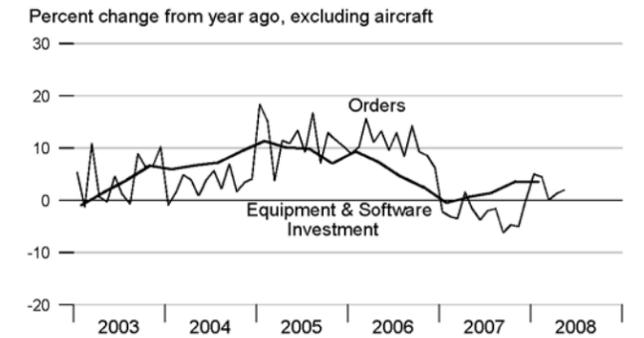
Gross Saving Rates and Balance on Current Account (NIPA)



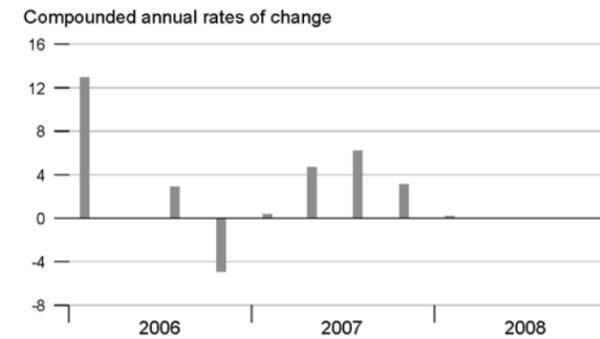
Real Private Fixed Investment



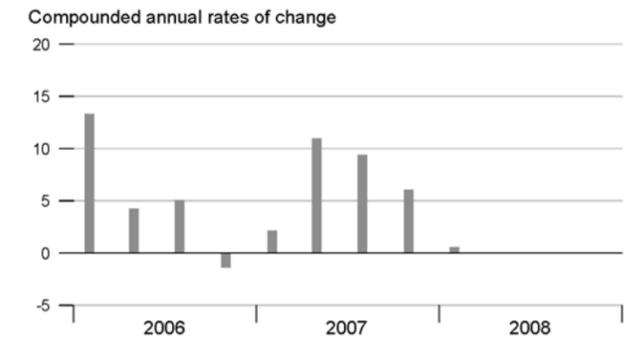
Nondefense Capital Goods Orders



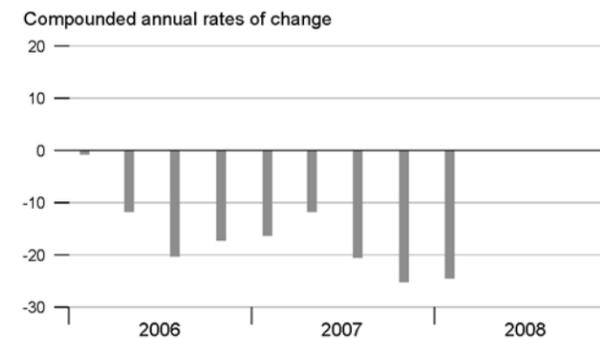
Real Equipment & Software Investment



Real Nonresidential Fixed Investment



Real Residential Fixed Investment



Housing Starts and New Home Sales

