

Is the Business Cycle Still an Inventory Cycle?

Changes in inventories held by businesses draw considerable attention from economists because of the prominent role they play in the business cycle. Indeed, the shedding of unwanted inventories often accounts for a large portion of the decline in gross domestic product (GDP) during economic recessions, despite the fact that changes in inventories are quite small relative to overall production.

However, in recent years businesses have improved inventory management. For example, advances in information technology allow sales results to be more rapidly incorporated into production decisions, which has the potential to mitigate the amount of inventory accumulation (and subsequent shedding) that occurs when sales slow. These improvements in inventory management may moderate the business cycle in at least two ways. First, to the extent that inventory mismanagement has caused past recessions, it is possible that improved inventory management may have contributed to a decrease in the number of recession episodes in recent years. Second, if inventories fluctuate less violently during the recessions that do occur, the severity of output declines during these recessions will be lessened.

In this note I investigate this latter possibility by asking whether inventory investment has contributed less to the slowdowns in production observed in the two most recent business cycle episodes, the 1990-91 and 2001 recessions, as compared with recessions in the 1950s through the 1980s. The table shows historical data on the percentage change in real GDP from the beginning to the end of recessions. The table also shows the respective amounts of this change that can be attributed to the change in sales compared with the change in inventory stocks, with these two contributions summing to the total change in real GDP. The table makes clear that inventory investment played an important role in pre-1990 recessions. For example, in these seven recessions, inventory investment accounted for 1.4 percentage points

of the average 2 percent peak-to-trough decline in real GDP. That is, if inventory levels had remained constant during these recessions, the declines in real GDP would have been much less severe.

Is there evidence that inventories played a smaller role in the past two recessions? The answer for the 1990-91 recession is most likely yes. Indeed, although the decline in final sales in this recession was about the same size as the average of past recessions, the decline in inventories was smaller. In other words, the decline in real GDP in the 1990-91 recession was smaller than would have been expected given the decline in final sales and historical experience. For the 2001 recession the decline in inventories was again less severe than the average decline for pre-1990 recessions and similar to that seen in 1990-91. Also, the nature of this inventory decline was quite different from that of past recessions. In particular, a large portion of the inventory decline occurred in response to an unexpected surge in sales in the months immediately following the September 11 terrorist attacks.¹ Thus, unlike past recessions, most of the inventory decline observed in the 2001 recession was not due to businesses attempting to shed an undesirably high level of inventories. Overall, then, the evidence is consistent with a smaller role for inventories in the two most recent recessions.

—Jeremy M. Piger

¹For more details see James A. Kahn and Margaret M. McConnell, "Has Inventory Volatility Returned? A Look at the Current Cycle," Federal Reserve Bank of New York *Current Issues in Economics and Finance*, May 2002, 8(5).

Inventories and Recessions: The Historical Record

Recession episodes	Peak-trough change in real GDP	Change in GDP due to inventory investment	Change in GDP due to final sales
1952-53 through 1981-82	-2.0%	-1.4%	-0.6%
1990-91	-1.3%	-0.8%	-0.5%
2001	0.3%	-0.7%	1.1%

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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.

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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 May 2003 **Employment Situation**, the establishment survey data for employment, hours, and earnings have been converted from the 1987 SIC system to the 2002 NAICS system. All published NAICS-based labor series have been revised back to at least 1990. For more information see <http://www.bls.gov/ces/>. **Nonfarm Payroll Employment** is counted in a survey of about 400,000 establishments (Current Employment Survey). 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 ($\pm 290,000$) 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/.

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

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

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

transactions involving existing assets; (2) NIPA outlays exclude government investment and include consumption of government capital, while unified budget outlays do the reverse; (3) NIPA accounts exclude Puerto Rico and U.S. territories; and (4) various timing issues are handled differently. **Outlays and Receipts** are from the NIPAs, except as noted. Since 1977, the federal **Fiscal Year** starts on October 1. Excluded agency debt was 0.6 percent of federal debt at the end of fiscal 1997. **Federal Debt Held by the Public** includes holdings of the Federal Reserve System and excludes holdings of the social security and other federal trust funds. Federal grants in aid to state and local governments appear in both state and local receipts and federal outlays.

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

Pages 20, 21: **Output per Hour (Y/H)**, **Unit Labor Cost (C/Y)**, and **Compensation per Hour (C/H)** are indexes which approximately obey the following relationship: $\%(Y/H) + \%(C/Y) = \%(C/H)$ with $\%(C/H)$ 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 76 percent of the value of GDP in 1996, while nonfinancial corporations accounted for about 54 percent. **Inventory Valuation Adjustments (IVA)** remove the effect of changes in the value of existing inventories from corporate profits and proprietors' income. (This change in value does not correspond to current production and therefore is not part of GDP). **Capital Consumption Adjustments (CCAdj)** increase profits and proprietors' income by the difference between estimates of economic depreciation and depreciation allowed by the tax code. Components of national income not shown are rental income of persons and net interest.

NOTE: Most measures of economic activity are now based on the 2002 North American Industry Classification System (NAICS), which replaces the 1987 Standard Industry Classification (SIC) system.

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.

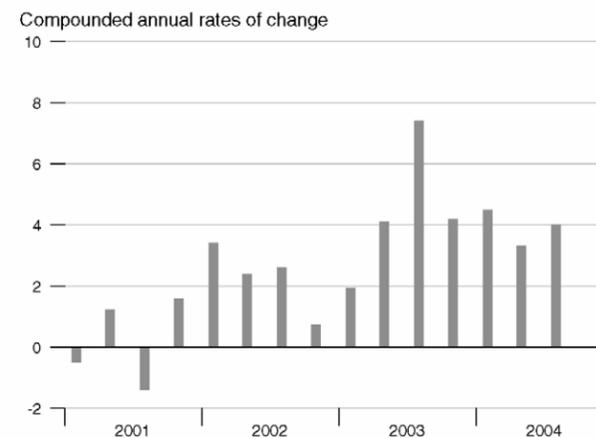
The Survey Research Center, The University of Michigan
 Consumer sentiment index.

The Conference Board
 Help-wanted advertising index.

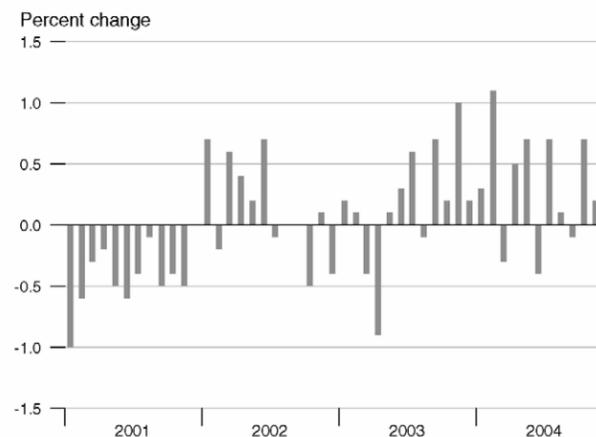
Organization for Economic Cooperation and Development (OECD)
 GDP for major trading partners (not available on FRED).

	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	
1999	166.6			2.2		177.0			2.1		132.8			1.7	
2000	172.2			3.4		181.3			2.4		138.0			3.9	
2001	177.0			2.8		186.1			2.7		140.7			2.0	
2002	179.9			1.6		190.4			2.3		138.9			-1.3	
2003	184.0			2.3		193.2			1.5		143.3			3.2	
2002	1	178.0	0.3	1.3	1.2	1.3	188.9	0.5	2.1	2.5	2.1	138.3	-0.0	-0.2	-2.4
	2	179.5	0.9	3.5	1.3	2.4	190.0	0.5	2.2	2.4	2.2	138.8	0.4	1.5	-2.3
	3	180.5	0.6	2.2	1.6	2.3	191.0	0.5	2.2	2.2	2.2	138.7	-0.0	-0.2	-1.4
	4	181.4	0.5	1.9	2.2	2.2	191.8	0.4	1.6	2.0	2.0	139.7	0.7	2.7	0.9
2003	1	183.1	1.0	3.9	2.9	3.9	192.4	0.3	1.3	1.8	1.3	142.8	2.3	9.4	3.3
	2	183.4	0.1	0.6	2.2	2.2	192.9	0.3	1.1	1.5	1.2	142.4	-0.3	-1.3	2.6
	3	184.5	0.6	2.3	2.2	2.3	193.6	0.3	1.4	1.3	1.3	143.4	0.7	2.8	3.3
	4	184.8	0.2	0.7	1.9	1.9	194.0	0.2	1.0	1.2	1.2	144.7	0.9	3.7	3.6
2004	1	186.4	0.9	3.6	1.8	3.6	194.9	0.4	1.8	1.3	1.8	146.1	1.0	3.9	2.3
	2	188.6	1.2	4.7	2.8	4.2	196.3	0.7	3.0	1.8	2.4	148.2	1.5	6.0	4.1
	3	189.5	0.5	1.9	2.7	3.4	197.1	0.4	1.5	1.8	2.1	148.4	0.1	0.5	3.5
2002	Nov	181.4	0.1	1.3	2.2	2.6	191.8	0.2	1.9	2.0	2.0	139.7	-0.2	-2.5	0.9
	Dec	181.6	0.1	1.3	2.5	2.5	192.0	0.1	1.3	2.0	2.0	139.3	-0.3	-3.4	1.2
2003	Jan	182.2	0.3	4.0	2.6	4.0	192.2	0.1	1.3	1.9	1.3	141.1	1.3	16.7	2.5
	Feb	183.2	0.5	6.8	3.0	5.4	192.4	0.1	1.3	1.8	1.3	142.8	1.2	15.5	3.4
	Mar	184.0	0.4	5.4	3.1	5.4	192.5	0.1	0.6	1.7	1.0	144.6	1.3	16.2	4.0
	Apr	183.4	-0.3	-3.8	2.2	3.0	192.6	0.1	0.6	1.5	0.9	142.5	-1.5	-16.1	2.4
	May	183.3	-0.1	-0.7	2.1	2.3	193.0	0.2	2.5	1.6	1.3	141.9	-0.4	-4.9	2.5
	Jun	183.5	0.1	1.3	2.1	2.1	193.1	0.1	0.6	1.5	1.1	142.7	0.6	7.0	2.8
	Jul	183.8	0.2	2.0	2.1	2.1	193.4	0.2	1.9	1.5	1.3	142.8	0.1	0.8	3.0
	Aug	184.5	0.4	4.7	2.2	2.4	193.6	0.1	1.2	1.3	1.3	143.5	0.5	6.0	3.5
	Sep	185.1	0.3	4.0	2.3	2.6	193.7	0.1	0.6	1.2	1.2	143.8	0.2	2.5	3.5
	Oct	184.9	-0.1	-1.3	2.0	2.2	194.0	0.2	1.9	1.3	1.3	144.7	0.6	7.8	3.4
	Nov	184.6	-0.2	-1.9	1.8	1.8	194.0	0.0	0.0	1.1	1.1	144.5	-0.1	-1.6	3.4
	Dec	184.9	0.2	2.0	1.8	1.8	194.1	0.1	0.6	1.1	1.1	144.8	0.2	2.5	3.9
2004	Jan	185.8	0.5	6.0	2.0	6.0	194.4	0.2	1.9	1.1	1.9	145.7	0.6	7.7	3.3
	Feb	186.3	0.3	3.3	1.7	4.6	194.8	0.2	2.5	1.2	2.2	145.8	0.1	0.8	2.1
	Mar	187.2	0.5	6.0	1.7	5.1	195.5	0.4	4.4	1.6	2.9	146.7	0.6	7.7	1.5
	Apr	187.6	0.2	2.6	2.3	4.4	196.0	0.3	3.1	1.8	3.0	147.7	0.7	8.5	3.6
	May	188.8	0.6	8.0	3.0	5.1	196.4	0.2	2.5	1.8	2.9	148.6	0.6	7.6	4.7
	Jun	189.4	0.3	3.9	3.2	4.9	196.6	0.1	1.2	1.8	2.6	148.3	-0.2	-2.4	3.9
	Jul	189.3	-0.1	-0.6	3.0	4.1	196.8	0.1	1.2	1.8	2.4	148.3	0.0	0.0	3.9
	Aug	189.4	0.1	0.6	2.7	3.7	196.9	0.1	0.6	1.7	2.2	148.4	0.1	0.8	3.4
	Sep	189.7	0.2	1.9	2.5	3.5	197.5	0.3	3.7	2.0	2.3	148.5	0.1	0.8	3.3
	Oct	190.9	0.6	7.9	3.2	3.9	197.9	0.2	2.5	2.0	2.4	151.0	1.7	22.2	4.4
	Nov	191.2	0.2	1.9	3.6	3.7	198.2	0.2	1.8	2.2	2.3	151.8	0.5	6.5	5.1

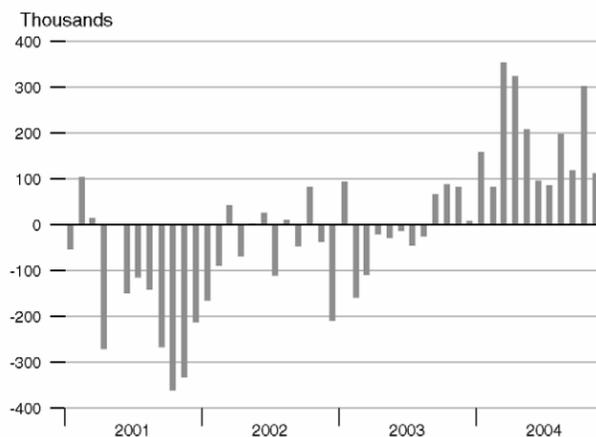
Real GDP Growth



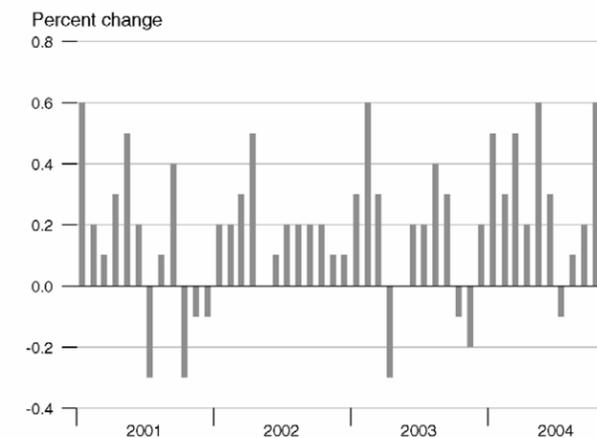
Industrial Production



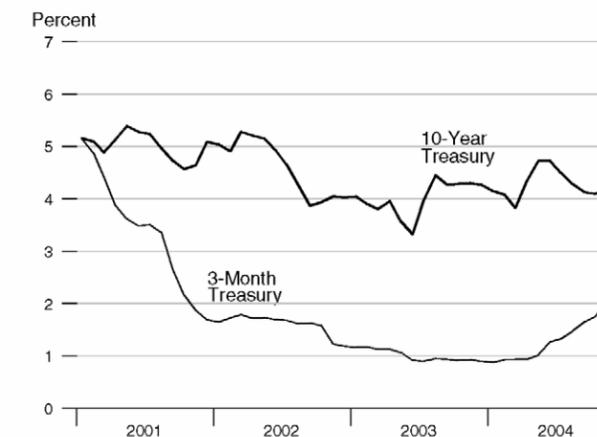
Change in Nonfarm Payrolls



Consumer Price Index



Interest Rates

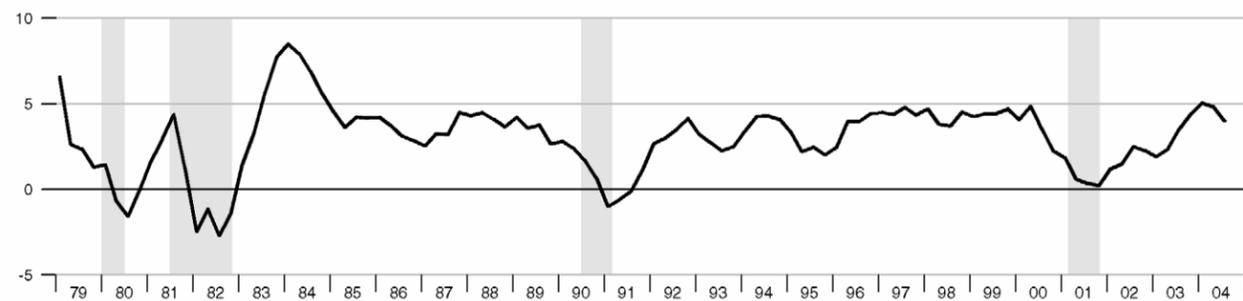


Unemployment Rate



Real Gross Domestic Product

Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago

Index



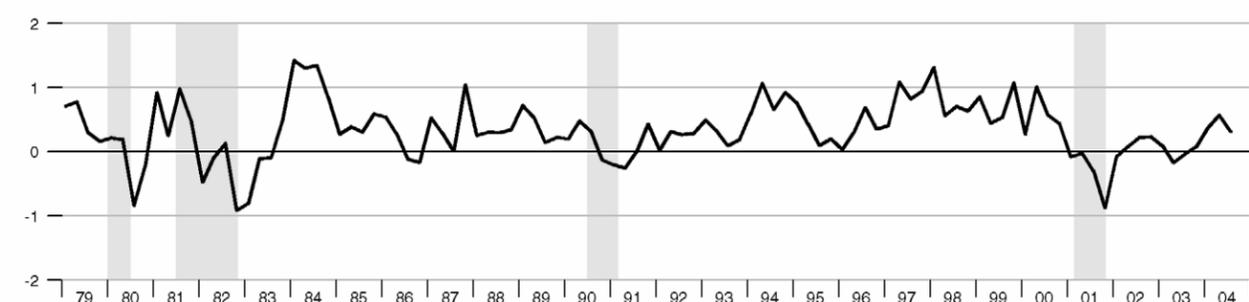
Aggregate Private Nonfarm Hours

Percent change from year ago



Real Change in Private Inventories

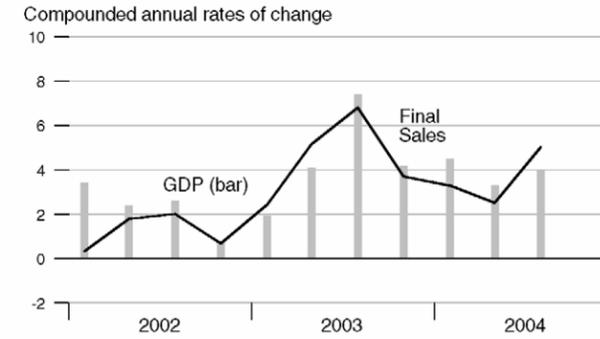
Percent of GDP



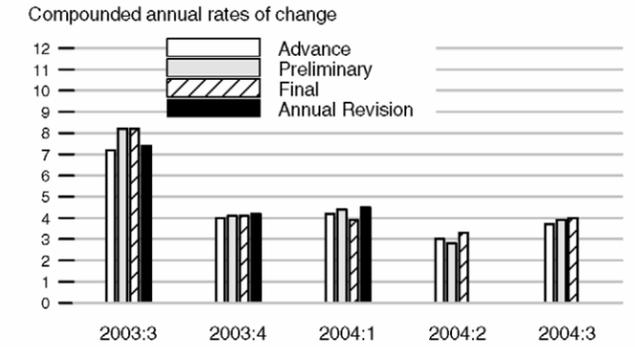
	Unempl. Rate	Retail and Food Services Sales			Industrial Production			Treasury Yields			
		Billions of dollars	Percent change		Index	Percent change		(Percent)			
			Monthly/quarterly	Annual rate	Year ago		Monthly/quarterly	Annual rate	Year ago	3-mo	10-yr
2000	4.0	3372.438			6.6	115.380			4.3	5.82	6.03
2001	4.8	3475.898			3.1	111.266			-3.6	3.39	5.02
2002	5.8	3564.420			2.5	110.959			-0.3	1.60	4.61
2003	6.0	3754.832			5.3	110.932			-0.0	1.01	4.02
2004										1.37	4.27
2002	1	878.111	-1.2	-4.7	2.4	109.994	0.6	2.3	-2.9	1.72	5.08
	2	888.077	1.1	4.6	2.3	111.188	1.1	4.4	-0.6	1.72	5.10
	3	896.786	1.0	4.0	4.1	111.648	0.4	1.7	1.0	1.64	4.26
	4	901.446	0.5	2.1	1.4	111.007	-0.6	-2.3	1.5	1.33	4.01
2003	1	913.320	1.3	5.4	4.0	110.825	-0.2	-0.7	0.8	1.16	3.92
	2	927.858	1.6	6.5	4.5	109.707	-1.0	-4.0	-1.3	1.04	3.62
	3	952.983	2.7	11.3	6.3	110.825	1.0	4.1	-0.7	0.93	4.23
	4	960.671	0.8	3.3	6.6	112.369	1.4	5.7	1.2	0.92	4.29
2004	1	984.732	2.5	10.4	7.8	113.920	1.4	5.6	2.8	0.92	4.02
	2	1000.594	1.6	6.6	7.8	115.130	1.1	4.3	4.9	1.08	4.60
	3	1014.464	1.4	5.7	6.5	115.948	0.7	2.9	4.6	1.49	4.30
	4									2.01	4.17
2002	Dec	302.970	1.0	12.7	3.7	110.709	-0.4	-5.2	1.4	1.19	4.03
2003	Jan	304.711	0.6	7.1	4.6	110.891	0.2	2.0	0.9	1.17	4.05
	Feb	301.347	-1.1	-12.5	2.7	111.034	0.1	1.6	1.2	1.17	3.90
	Mar	307.262	2.0	26.3	4.8	110.551	-0.4	-5.1	0.2	1.13	3.81
	Apr	308.132	0.3	3.5	3.6	109.538	-0.9	-10.5	-1.1	1.13	3.96
	May	307.397	-0.2	-2.8	4.6	109.640	0.1	1.1	-1.2	1.07	3.57
	Jun	312.329	1.6	21.0	5.2	109.942	0.3	3.4	-1.7	0.92	3.33
	Jul	315.123	0.9	11.3	5.2	110.616	0.6	7.6	-1.0	0.90	3.98
	Aug	320.843	1.8	24.1	6.7	110.528	-0.1	-1.0	-1.0	0.95	4.45
	Sep	317.017	-1.2	-13.4	6.8	111.331	0.7	9.1	-0.3	0.94	4.27
	Oct	317.127	0.0	0.4	6.2	111.559	0.2	2.5	0.4	0.92	4.29
	Nov	321.202	1.3	16.6	7.1	112.657	1.0	12.5	1.3	0.93	4.30
	Dec	322.342	0.4	4.3	6.4	112.892	0.2	2.5	2.0	0.90	4.27
2004	Jan	323.918	0.5	6.0	6.3	113.223	0.3	3.6	2.1	0.88	4.15
	Feb	326.996	1.0	12.0	8.5	114.426	1.1	13.5	3.1	0.93	4.08
	Mar	333.818	2.1	28.1	8.6	114.110	-0.3	-3.3	3.2	0.94	3.83
	Apr	331.131	-0.8	-9.2	7.5	114.736	0.5	6.8	4.7	0.94	4.35
	May	335.920	1.4	18.8	9.3	115.534	0.7	8.7	5.4	1.02	4.72
	Jun	333.543	-0.7	-8.2	6.8	115.120	-0.4	-4.2	4.7	1.27	4.73
	Jul	336.944	1.0	12.9	6.9	115.930	0.7	8.8	4.8	1.33	4.50
	Aug	336.059	-0.3	-3.1	4.7	116.036	0.1	1.1	5.0	1.48	4.28
	Sep	341.461	1.6	21.1	7.7	115.878	-0.1	-1.6	4.1	1.65	4.13
	Oct	344.040	0.8	9.4	8.5	116.740	0.7	9.3	4.6	1.76	4.10
	Nov	344.375	0.1	1.2	7.2	116.956	0.2	2.2	3.8	2.07	4.19
	Dec									2.19	4.23

	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
1999	133501	2025		1.5	128992	3068		2.4	101.6			2.1
2000	136902	3401		2.5	131791	2800		2.2	103.5			1.8
2001	136944	42		0.0	131837	46		0.0	102.1			-1.3
2002	136487	-456		-0.3	130343	-1494		-1.1	100.0			-2.1
2003	137739	1252		0.9	129937	-406		-0.3	98.6			-1.3
2002	1	136061	-192	-0.6	130448	-463	-1.4	-1.5	100.3	-0.3	-1.2	-3.0
	2	136318	257	0.8	130389	-60	-0.2	-1.4	100.2	-0.0	-0.1	-2.3
	3	136875	557	1.6	130287	-102	-0.3	-1.1	99.8	-0.4	-1.6	-2.0
	4	136694	-181	-0.5	130248	-39	-0.1	-0.5	99.5	-0.4	-1.5	-1.1
2003	1	137355	661	1.9	130047	-200	-0.6	-0.3	99.0	-0.5	-1.9	-1.3
	2	137585	230	0.7	129878	-170	-0.5	-0.4	98.5	-0.5	-2.0	-1.7
	3	137647	62	0.2	129820	-58	-0.2	-0.4	98.2	-0.3	-1.1	-1.6
	4	138369	722	2.1	130002	182	0.6	-0.2	98.7	0.5	1.9	-0.8
2004	1	138388	19	0.1	130367	365	1.1	0.2	99.3	0.6	2.3	0.3
	2	138793	405	1.2	131125	758	2.3	1.0	99.8	0.5	2.2	1.3
	3	139607	814	2.4	131515	390	1.2	1.3	100.6	0.8	3.1	2.4
2002	Nov	136545	-534	-4.6	130305	-37	-0.3	-0.4	99.5	-0.1	-1.2	-1.0
	Dec	136459	-86	-0.8	130096	-209	-1.9	-0.4	99.3	-0.2	-2.4	-1.3
2003	Jan	137447	988	9.0	130190	94	0.9	-0.2	99.3	0.0	0.0	-1.0
	Feb	137318	-129	-1.1	130031	-159	-1.5	-0.3	98.8	-0.5	-5.9	-1.4
	Mar	137300	-18	-0.2	129921	-110	-1.0	-0.4	98.9	0.1	1.2	-1.4
	Apr	137578	278	2.5	129901	-20	-0.2	-0.4	98.3	-0.6	-7.0	-2.1
	May	137505	-73	-0.6	129873	-28	-0.3	-0.4	98.6	0.3	3.7	-1.3
	Jun	137673	168	1.5	129859	-14	-0.1	-0.4	98.6	0.0	0.0	-1.8
	Jul	137604	-69	-0.6	129814	-45	-0.4	-0.4	98.2	-0.4	-4.8	-1.5
	Aug	137693	89	0.8	129789	-25	-0.2	-0.4	98.2	0.0	0.0	-1.7
	Sep	137644	-49	-0.4	129856	67	0.6	-0.3	98.3	0.1	1.2	-1.6
	Oct	138095	451	4.0	129944	88	0.8	-0.3	98.7	0.4	5.0	-0.9
	Nov	138533	438	3.9	130027	83	0.8	-0.2	99.0	0.3	3.7	-0.5
	Dec	138479	-54	-0.5	130035	8	0.1	-0.0	98.4	-0.6	-7.0	-0.9
2004	Jan	138566	87	0.8	130194	159	1.5	0.0	99.1	0.7	8.9	-0.2
	Feb	138301	-265	-2.3	130277	83	0.8	0.2	99.2	0.1	1.2	0.4
	Mar	138298	-3	-0.0	130630	353	3.3	0.5	99.5	0.3	3.7	0.6
	Apr	138576	278	2.4	130954	324	3.0	0.8	99.5	0.0	0.0	1.2
	May	138772	196	1.7	131162	208	1.9	1.0	100.2	0.7	8.8	1.6
	Jun	139031	259	2.3	131258	96	0.9	1.1	99.7	-0.5	-5.8	1.1
	Jul	139660	629	5.6	131343	85	0.8	1.2	100.5	0.8	10.1	2.3
	Aug	139681	21	0.2	131541	198	1.8	1.3	100.4	-0.1	-1.2	2.2
	Sep	139480	-201	-1.7	131660	119	1.1	1.4	100.8	0.4	4.9	2.5
	Oct	139778	298	2.6	131963	303	2.8	1.6	101.1	0.3	3.6	2.4
	Nov	140261	483	4.2	132075	112	1.0	1.6	100.9	-0.2	-2.3	1.9

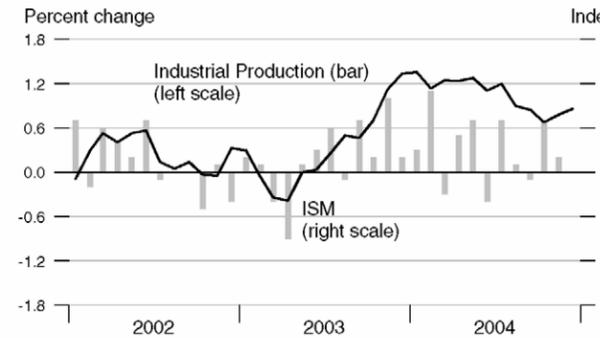
Real Final Sales and GDP



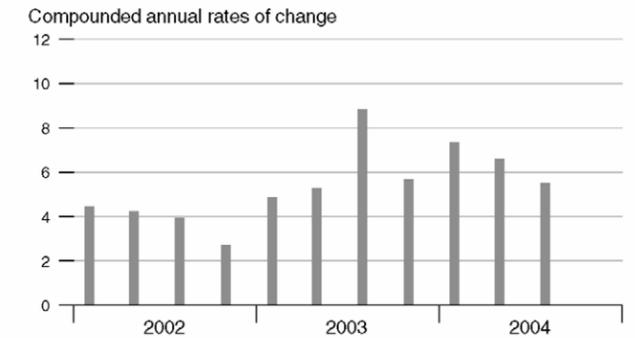
Real GDP Revisions



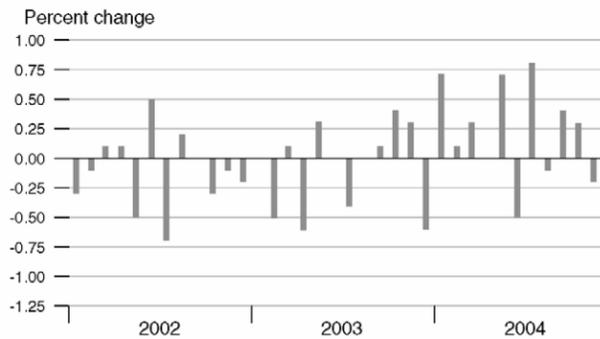
Industrial Production and ISM Index



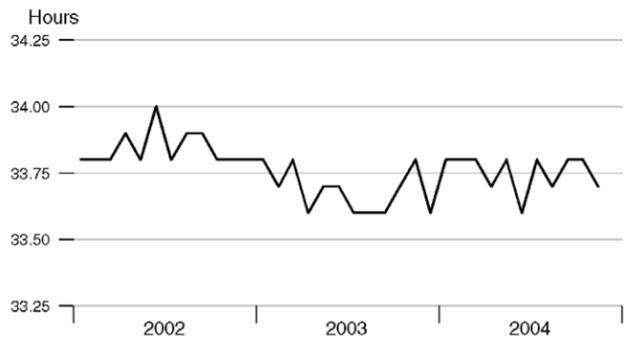
Nominal Gross Domestic Product



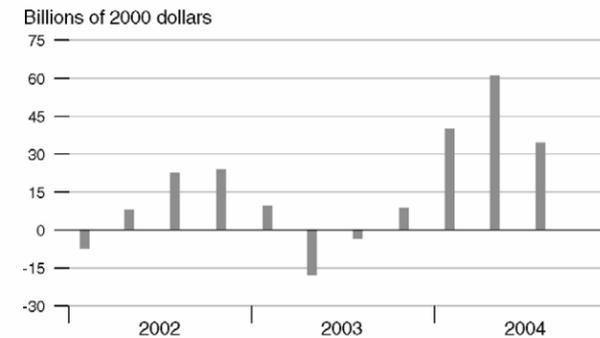
Aggregate Private Nonfarm Hours



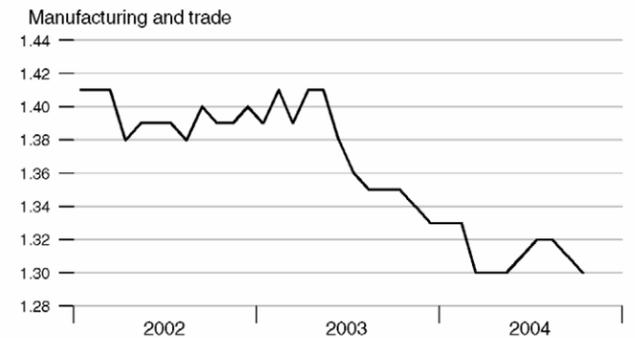
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

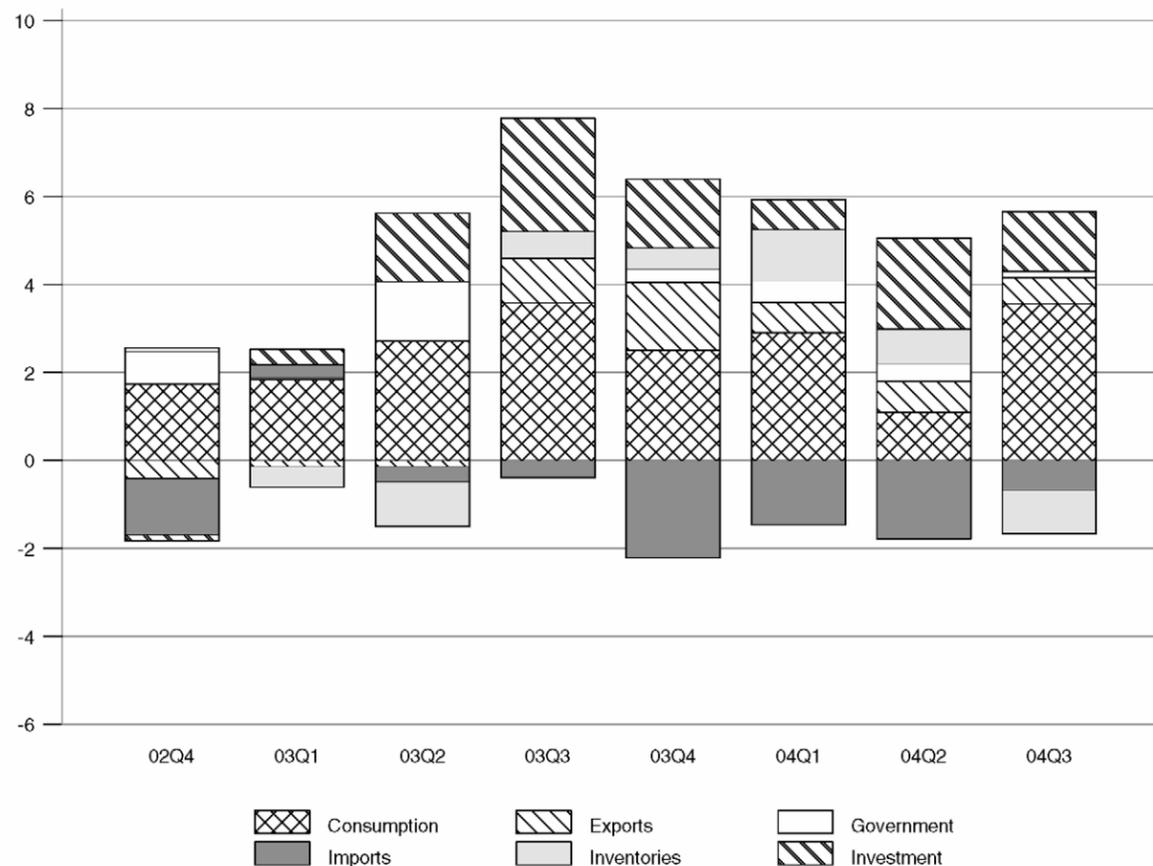


Inventory-Sales Ratio



Contribution of Components to Real GDP Growth

Percentage points at compounded annual rates



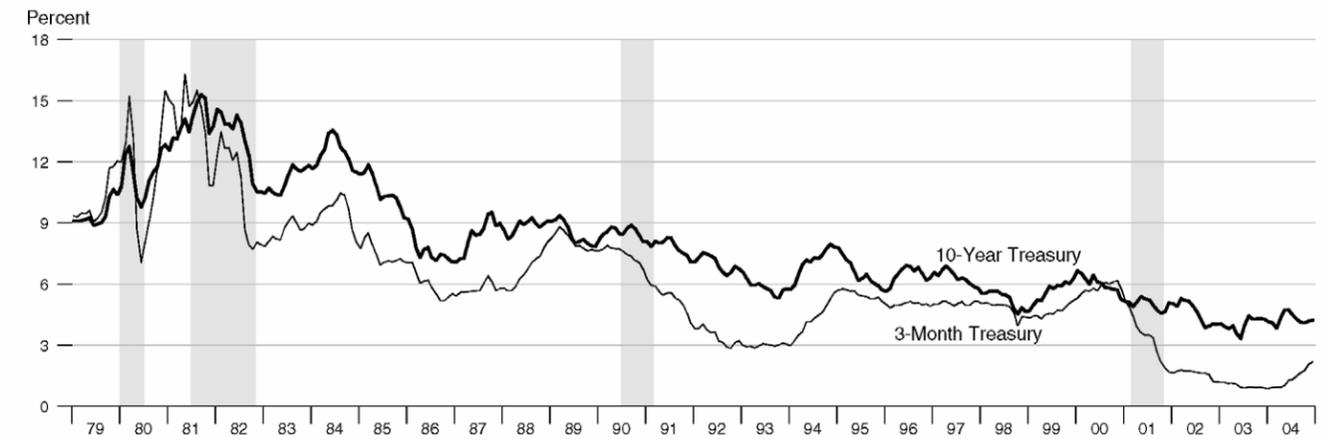
Contributions to Real GDP Growth Rate

	2002				2003			2004				
	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Final Sales	0.67	2.38	5.12	6.84	3.72	3.32	2.52	4.97				
Consumption	1.74	1.84	2.72	3.58	2.50	2.90	1.10	3.57				
Fixed Investment	-0.13	0.35	1.55	2.59	1.57	0.69	2.07	1.37				
Nonresidential	-0.33	-0.01	1.10	1.50	1.07	0.42	1.21	1.27				
Residential	0.20	0.36	0.44	1.09	0.50	0.27	0.86	0.09				
Federal	0.58	0.04	1.40	-0.23	0.33	0.48	0.18	0.33				
Government	0.75	0.05	1.35	0.03	0.31	0.48	0.41	0.13				
State and Local	0.17	0.02	-0.05	0.26	-0.02	0.00	0.23	-0.20				
Imports	-1.27	0.29	-0.34	-0.39	-2.22	-1.46	-1.77	-0.69				
Change in Inventory	0.07	-0.45	-1.01	0.57	0.47	1.17	0.78	-0.97				
Exports	-0.42	-0.15	-0.15	1.02	1.55	0.70	0.70	0.59				
Net Exports	-1.69	0.14	-0.50	0.64	-0.66	-0.76	-1.06	-0.10				
Residual	0.13	0.09	0.05	-0.10	0.02	0.02	0.01	-0.10				
Real GDP Growth	0.74	1.93	4.11	7.41	4.19	4.49	3.30	4.00				

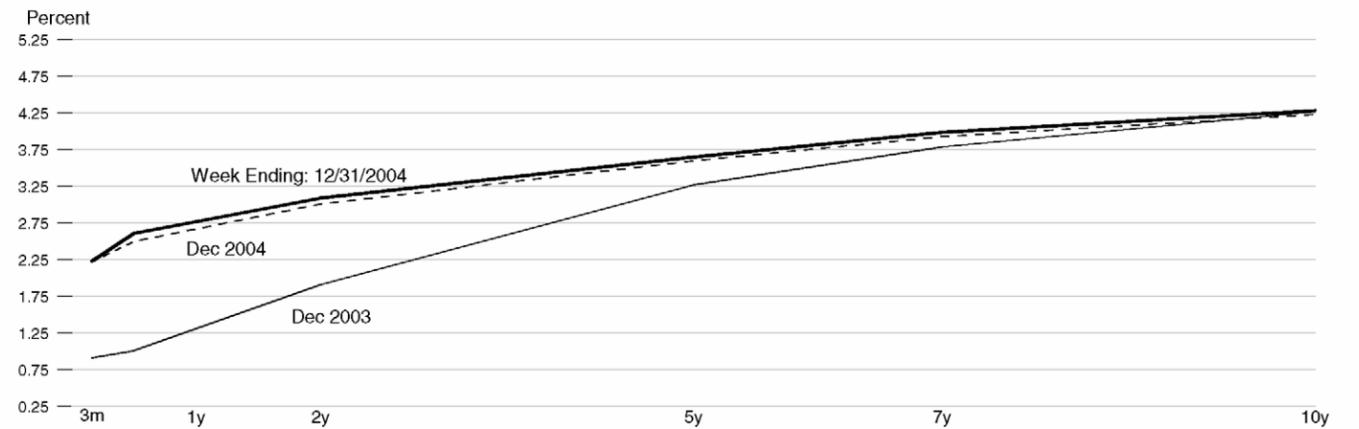
	GDP Chain Price Index			Employment Cost Index			ECI: Wages			ECI: Benefits			
	Index	Percent change		Index	Percent change		Index	Percent change		Index	Percent change		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	
2000	100.000		2.2	148.9		4.6	146.0		4.1	156.0		5.7	
2001	102.376		2.4	155.0		4.1	151.4		3.7	163.7		4.9	
2002	103.949		1.5	160.9		3.8	156.4		3.3	171.7		4.9	
2003	105.686		1.7	167.3		4.0	161.0		2.9	182.5		6.3	
2001 1	101.507	3.3	2.2	152.7	4.3	4.2	149.4	4.1	3.8	160.7	4.6	5.0	
2	102.290	3.1	2.5	154.2	4.0	4.0	150.8	3.8	3.7	162.5	4.6	4.8	
3	102.690	1.6	2.4	155.7	3.9	3.9	152.0	3.2	3.6	164.7	5.5	4.9	
4	103.122	1.7	2.4	157.4	4.4	4.2	153.5	4.0	3.8	167.0	5.7	5.1	
2002 1	103.470	1.4	1.9	158.8	3.6	4.0	154.8	3.4	3.6	168.4	3.4	4.8	
2	103.853	1.5	1.5	160.5	4.4	4.1	156.2	3.7	3.6	170.8	5.8	5.1	
3	104.280	1.7	1.5	161.5	2.5	3.7	156.9	1.8	3.2	172.6	4.3	4.8	
4	104.786	2.0	1.6	162.8	3.3	3.4	157.7	2.1	2.7	175.0	5.7	4.8	
2003 1	105.490	2.7	2.0	165.0	5.5	3.9	159.3	4.1	2.9	178.6	8.5	6.1	
2	105.780	1.1	1.9	166.4	3.4	3.7	160.3	2.5	2.6	181.1	5.7	6.0	
3	106.158	1.4	1.8	168.2	4.4	4.1	161.7	3.5	3.1	183.8	6.1	6.5	
4	106.586	1.6	1.7	169.5	3.1	4.1	162.5	2.0	3.0	186.3	5.6	6.5	
2004 1	107.314	2.8	1.7	171.3	4.3	3.8	163.5	2.5	2.6	191.2	10.9	7.1	
2	108.169	3.2	2.3	173.0	4.0	4.0	164.4	2.2	2.6	194.5	7.1	7.4	
3	108.551	1.4	2.3	174.5	3.5	3.7	165.8	3.5	2.5	196.4	4.0	6.9	
		Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
		Percent change		Percent change		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	
2000	1096.300		8.7	1475.800		13.1	115.3		2.8	133.7		7.0	
2001	1039.000		-5.2	1437.100		-2.6	117.8		2.2	138.9		3.9	
2002	1014.200		-2.4	1484.700		3.3	123.6		4.9	142.1		2.3	
2003	1034.700		2.0	1543.800		4.0	129.1		4.4	147.1		3.5	
2001 1	1097.200	-5.3	3.4	1495.400	-3.7	5.9	116.5	-0.3	2.5	138.1	6.6	4.5	
2	1060.600	-12.7	-2.9	1445.800	-12.6	-1.4	118.1	5.6	2.0	138.9	2.3	4.8	
3	1008.700	-18.2	-9.9	1407.100	-10.3	-7.2	118.5	1.4	2.6	139.6	2.0	3.3	
4	980.300	-10.8	-11.9	1394.900	-3.4	-7.6	120.4	6.6	3.3	140.7	3.2	3.5	
2002 1	991.600	4.7	-9.6	1436.500	12.5	-3.9	122.4	6.8	5.1	142.6	5.5	3.3	
2	1017.800	11.0	-4.0	1475.900	11.4	2.1	122.8	1.3	4.0	143.8	3.4	3.5	
3	1025.500	3.1	1.7	1495.300	5.4	6.3	124.1	4.3	4.7	144.3	1.4	3.4	
4	1014.500	-4.2	3.5	1529.800	9.6	9.7	124.6	1.6	3.5	144.7	1.1	2.8	
2003 1	1010.600	-1.5	1.9	1522.300	-1.9	6.0	125.8	3.9	2.8	146.6	5.4	2.8	
2	1006.500	-1.6	-1.1	1531.700	2.5	3.8	127.8	6.5	4.1	148.7	5.9	3.4	
3	1033.800	11.3	0.8	1542.500	2.9	3.2	130.6	9.1	5.2	150.9	6.1	4.6	
4	1076.200	17.4	6.1	1604.500	17.1	4.9	131.7	3.4	5.7	152.5	4.3	5.4	
2004 1	1095.400	7.3	8.4	1645.500	10.6	8.1	132.8	3.4	5.6	153.3	2.1	4.6	
2	1114.800	7.3	10.8	1695.100	12.6	10.7	134.1	4.0	4.9	155.5	5.9	4.6	
3	1131.100	6.0	9.4	1714.300	4.6	11.1	134.7	1.8	3.1	156.9	3.7	4.0	

	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 \$		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago	
2000	9817.0		5.9	9817.000		3.7	9760.500		3.8		56.500	
2001	10100.8		2.9	9866.600		0.5	9901.100		1.4		-36.000	
2002	10480.8		3.8	10083.000		2.2	10076.900		1.8		5.700	
2003	10987.9		4.8	10398.000		3.1	10395.000		3.2		-0.700	
2001 1	10021.5	2.8	4.1	9875.600	-0.5	1.9	9883.200	1.6	2.2	-7.800	47.800	
2	10128.9	4.4	3.1	9905.900	1.2	0.6	9908.700	1.0	1.6	-2.500	22.350	
3	10135.1	0.2	2.8	9871.100	-1.4	0.4	9899.900	-0.4	1.2	-29.900	0.825	
4	10226.3	3.6	2.7	9910.000	1.6	0.2	9992.300	3.8	1.5	-86.700	-31.725	
2002 1	10338.2	4.4	3.2	9993.500	3.4	1.2	10000.400	0.3	1.2	-7.400	-31.625	
2	10445.7	4.2	3.1	10052.600	2.4	1.5	10044.900	1.8	1.4	7.900	-29.025	
3	10546.5	3.9	4.1	10117.300	2.6	2.5	10095.200	2.0	2.0	22.700	-15.875	
4	10617.5	2.7	3.8	10135.900	0.7	2.3	10112.500	0.7	1.2	23.800	11.750	
2003 1	10744.6	4.9	3.9	10184.400	1.9	1.9	10173.300	2.4	1.7	9.600	16.000	
2	10884.0	5.3	4.2	10287.400	4.1	2.3	10302.500	5.2	2.6	-17.600	9.625	
3	11116.7	8.8	5.4	10472.800	7.4	3.5	10473.900	6.8	3.8	-3.500	3.075	
4	11270.9	5.7	6.2	10580.700	4.2	4.4	10569.600	3.7	4.5	8.600	-0.725	
2004 1	11472.6	7.4	6.8	10697.500	4.5	5.0	10655.800	3.3	4.7	40.000	6.875	
2	11657.5	6.6	7.1	10784.700	3.3	4.8	10722.300	2.5	4.1	61.100	26.550	
3	11814.9	5.5	6.3	10891.000	4.0	4.0	10854.700	5.0	3.6	34.500	36.050	
	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
2000	6739.400		4.7	863.300		7.3	1679.000		6.5	1232.100		8.7
2001	6904.600		2.5	899.100		4.1	1625.700		-3.2	1176.800		-4.5
2002	7140.400		3.4	957.200		6.5	1565.800		-3.7	1092.600		-7.2
2003	7365.200		3.1	1027.500		7.3	1635.200		4.4	1125.500		3.0
2001 1	6853.100	1.7	2.9	879.500	6.7	0.8	1678.200	-2.6	1.6	1234.400	-4.3	3.2
2	6870.300	1.0	2.5	878.900	-0.3	3.2	1640.500	-8.7	-2.9	1190.200	-13.6	-3.9
3	6900.500	1.8	2.0	885.600	3.1	2.5	1621.900	-4.5	-3.8	1169.300	-6.8	-6.1
4	7017.600	7.0	2.8	958.700	37.3	10.8	1577.000	-10.6	-6.7	1128.200	-13.3	-9.6
2002 1	7049.700	1.8	2.9	937.800	-8.4	6.6	1559.600	-4.3	-7.1	1099.800	-9.7	-10.9
2	7099.200	2.8	3.3	947.800	4.3	7.8	1545.900	-3.5	-5.8	1072.400	-9.6	-9.9
3	7149.900	2.9	3.6	979.300	14.0	10.6	1546.600	0.2	-4.6	1069.500	-1.1	-8.5
4	7194.600	2.5	2.5	973.400	-2.4	1.5	1543.500	-0.8	-2.1	1060.900	-3.2	-6.0
2003 1	7242.200	2.7	2.7	973.200	-0.1	3.8	1552.700	2.4	-0.4	1060.500	-0.2	-3.6
2	7311.400	3.9	3.0	1020.000	20.7	7.6	1593.400	10.9	3.1	1090.600	11.8	1.7
3	7401.700	5.0	3.5	1059.600	16.5	8.2	1660.600	18.0	7.4	1131.100	15.7	5.8
4	7466.800	3.6	3.8	1069.700	3.9	9.9	1702.700	10.5	10.3	1161.000	11.0	9.4
2004 1	7543.000	4.1	4.2	1075.500	2.2	10.5	1721.400	4.5	10.9	1173.000	4.2	10.6
2	7572.400	1.6	3.6	1074.700	-0.3	5.4	1778.300	13.9	11.6	1207.900	12.4	10.8
3	7667.800	5.1	3.6	1118.300	17.2	5.5	1816.100	8.8	9.4	1245.300	13.0	10.1

Interest Rates



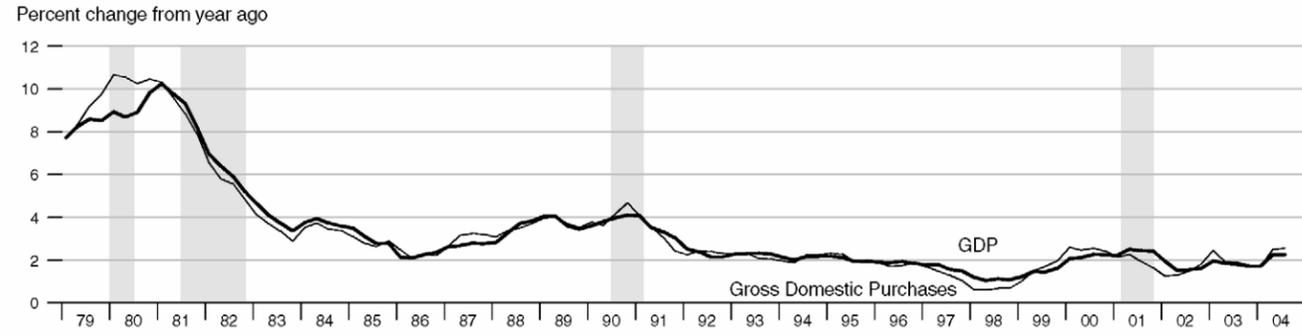
Treasury Yield Curve



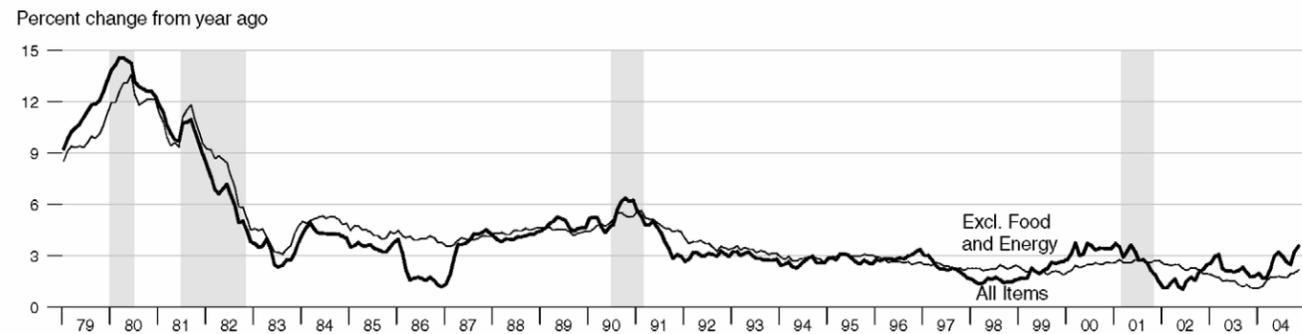
Standard and Poor's 500 Index with Reinvested Dividends



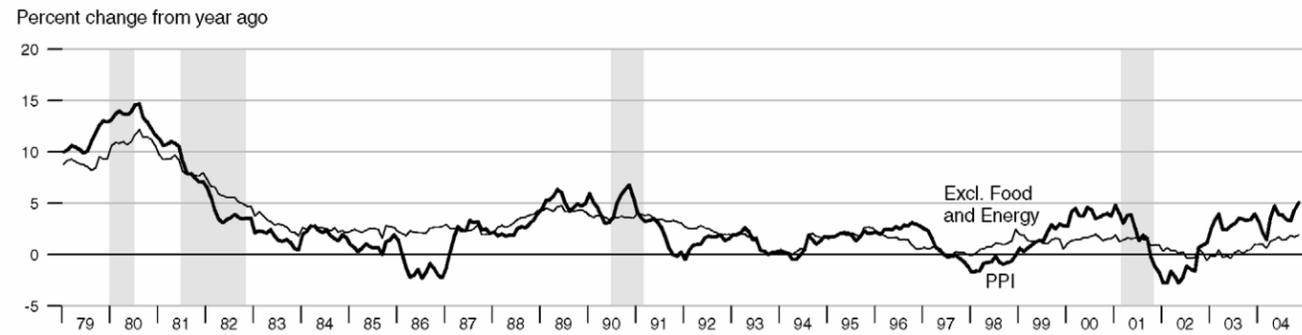
NIPA Chain Price Indexes



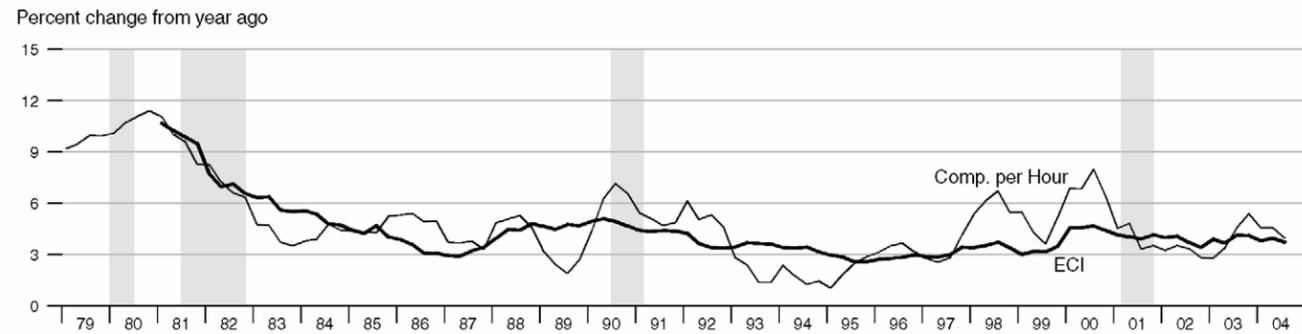
Consumer Price Index



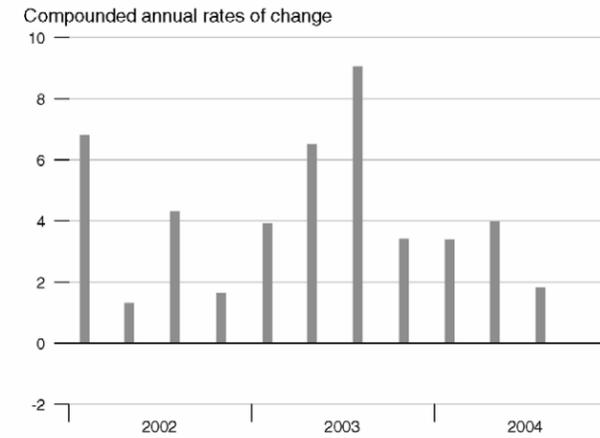
Producer Price Index, Finished Goods



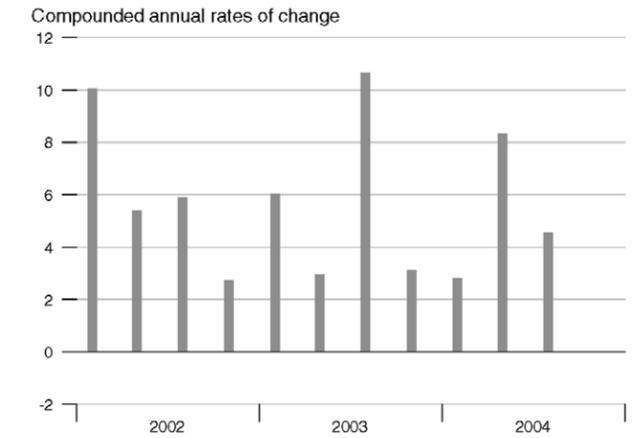
Employment Cost Index and Compensation per Hour



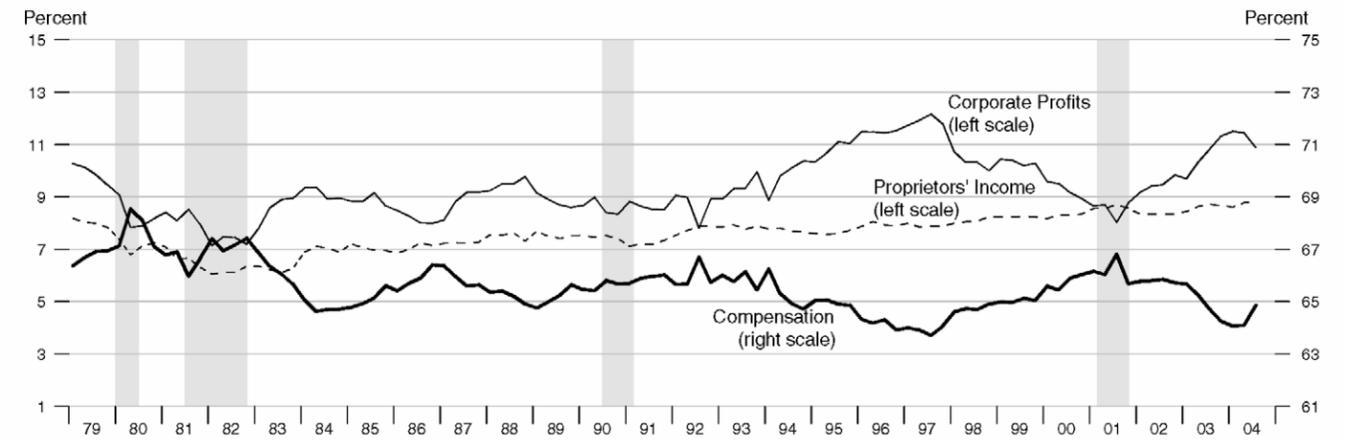
Nonfarm Output per Hour



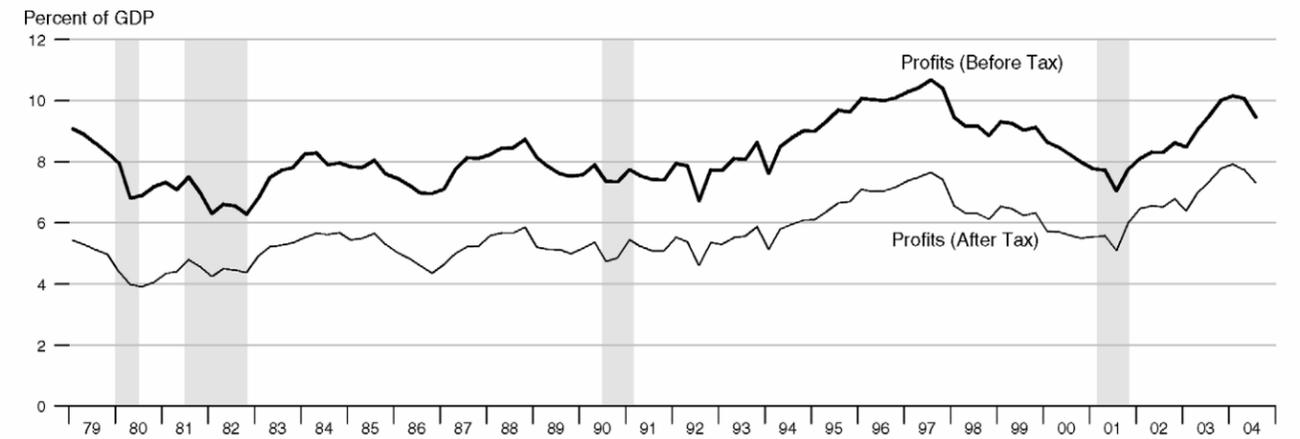
Manufacturing Output per Hour



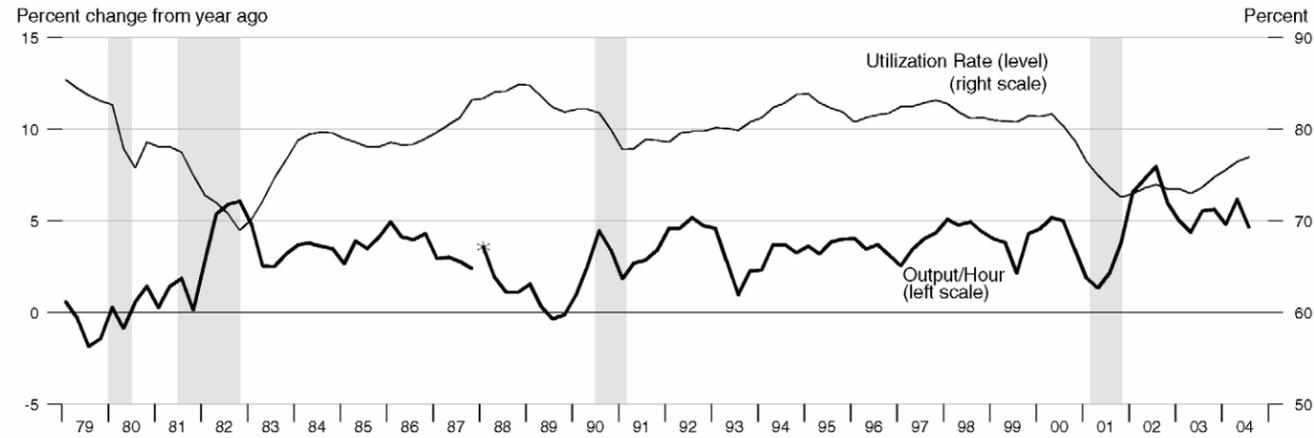
Selected Component Shares of National Income



Corporate Profits

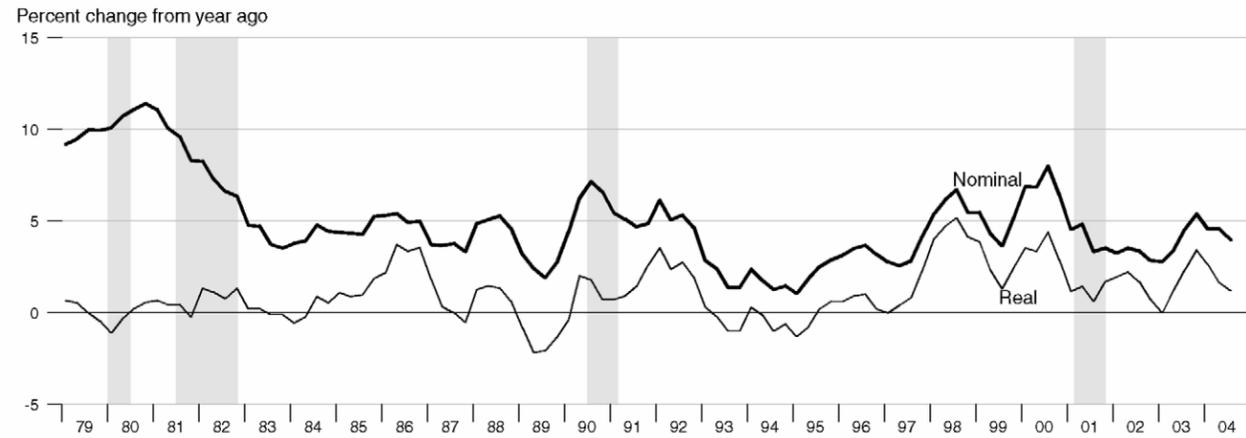


Output per Hour and Capacity Utilization, Manufacturing

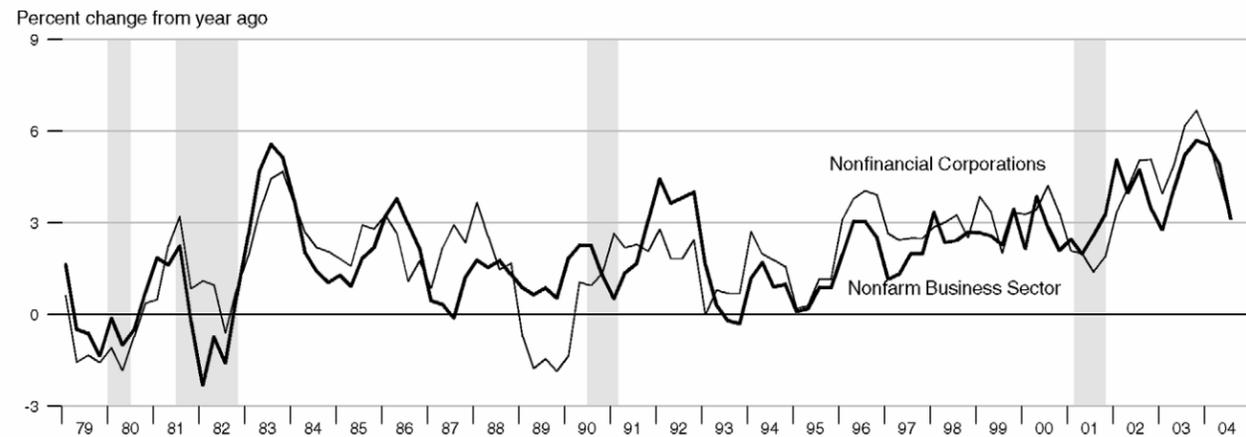


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

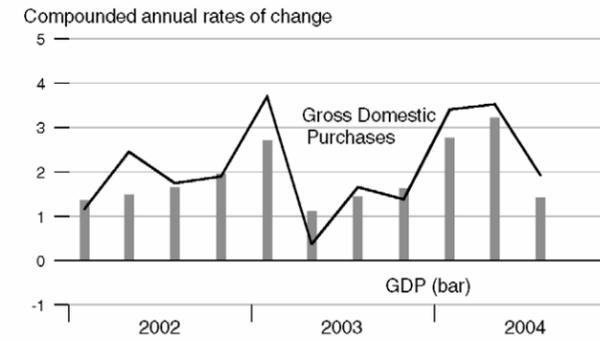
Nonfarm Compensation per Hour



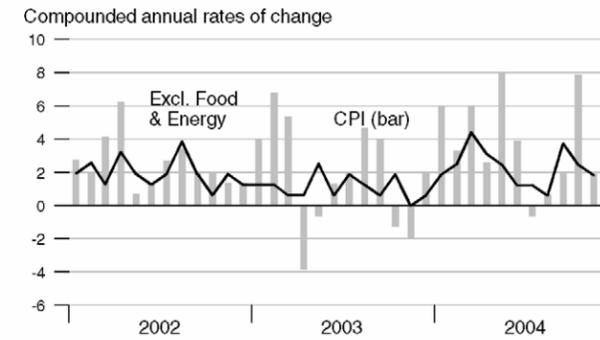
Output per Hour, Nonfarm Business and Nonfinancial Corporations



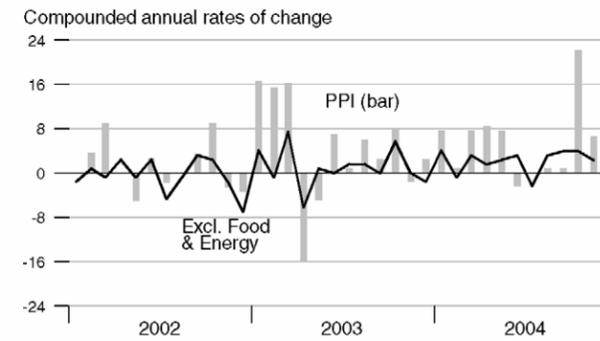
NIPA Chain Price Indexes



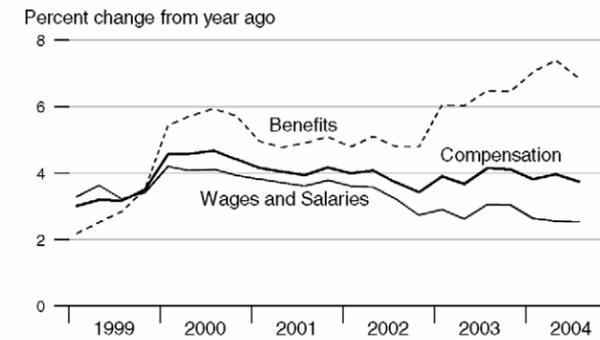
Consumer Price Index



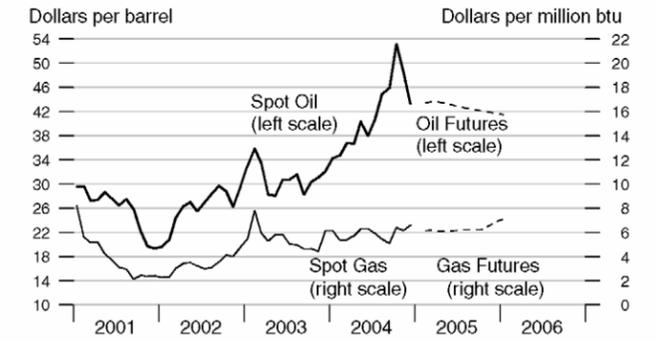
Producer Price Index, Finished Goods



Employment Cost Index

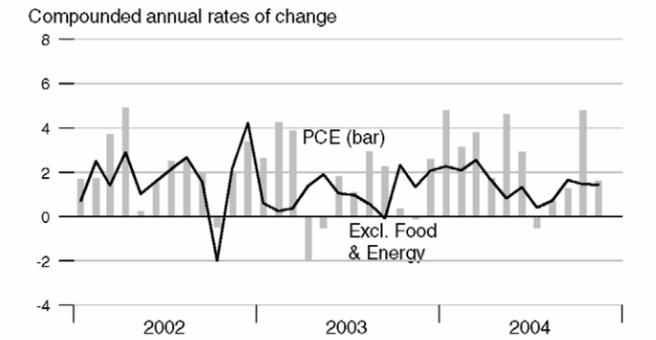


Oil & Natural Gas Prices: Spot & Futures

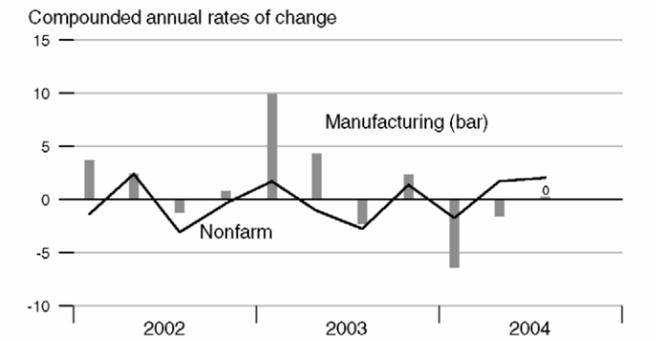


Note: Futures prices as of 12/30/2004.

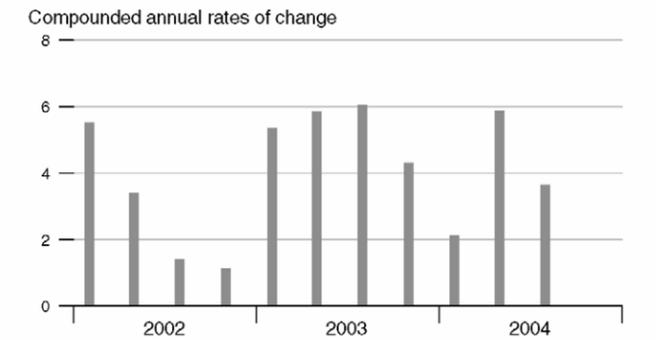
Consumption Chain Price Index



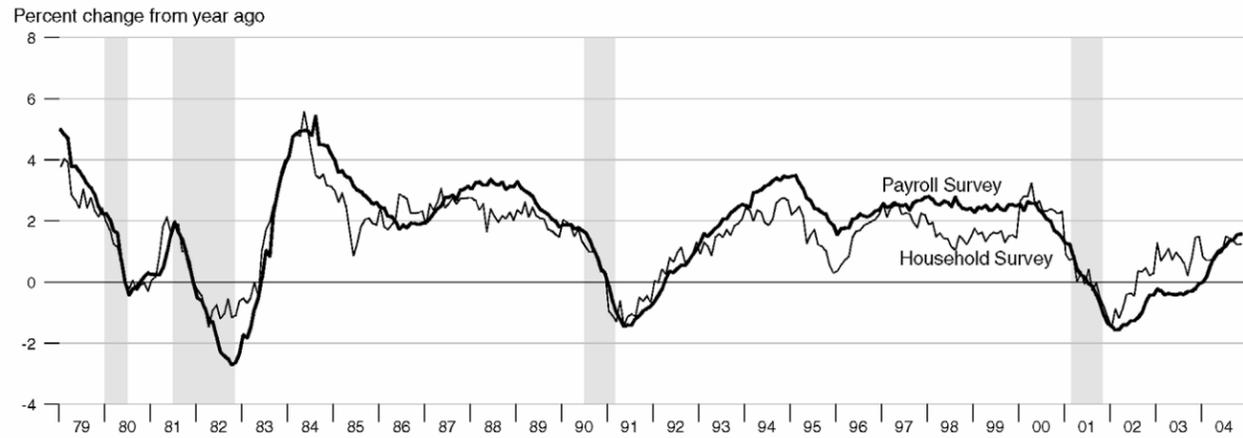
Unit Labor Cost



Compensation per Hour

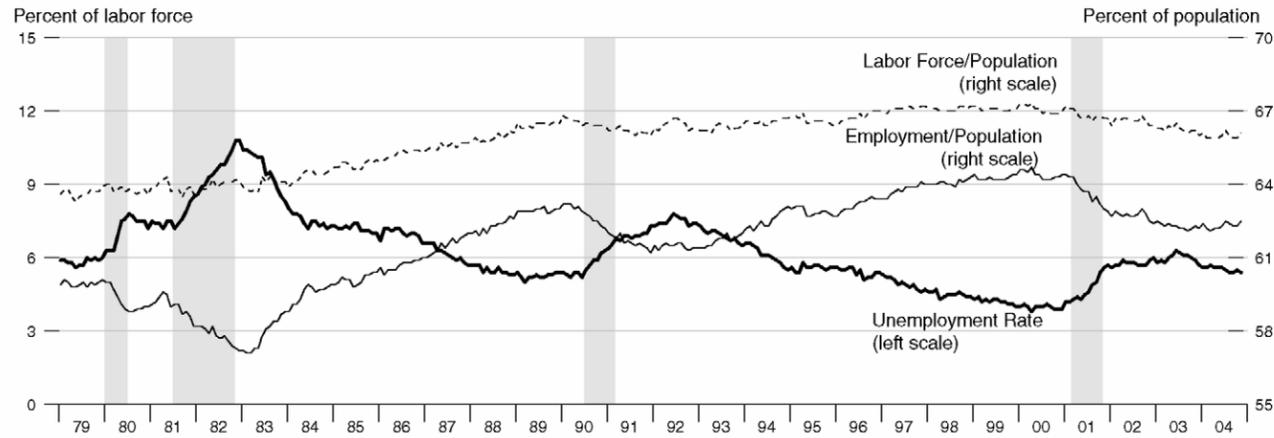


Employment

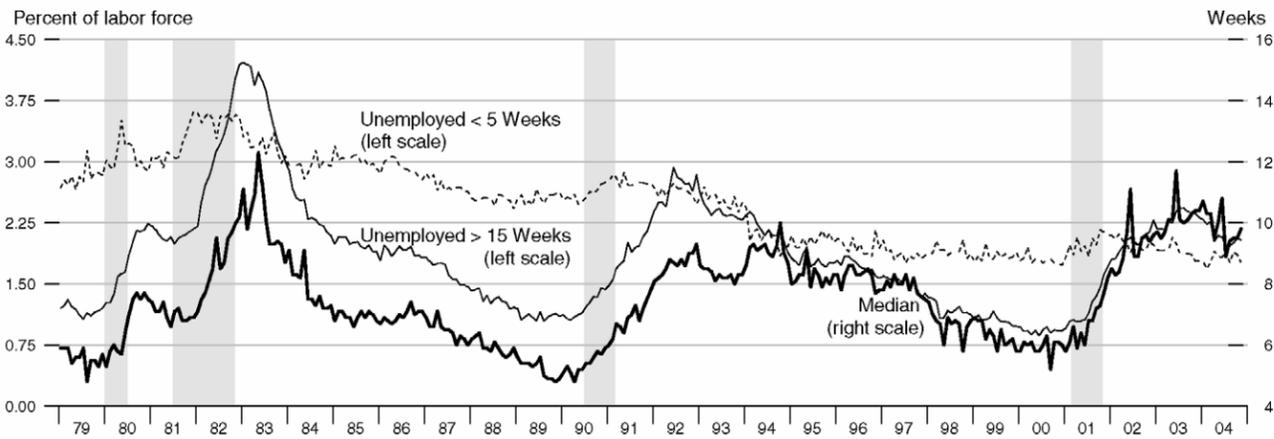


See the Notes section at the end of this publication for the Feb. 7, 2003, revisions to the Household Survey, and the June 6, 2003, revisions to the Establishment Survey.

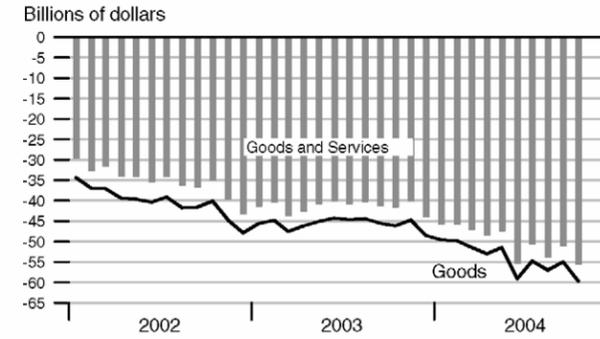
Unemployment, Labor Force Participation, and Employment Rates



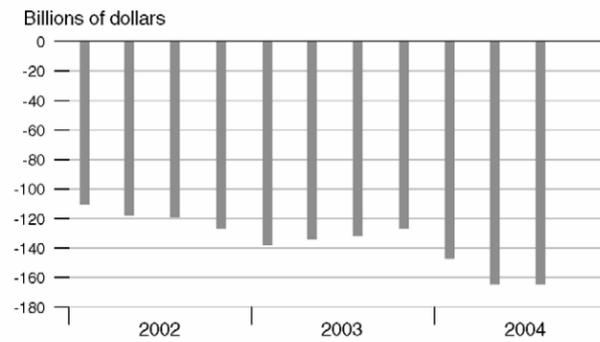
Duration of Unemployment



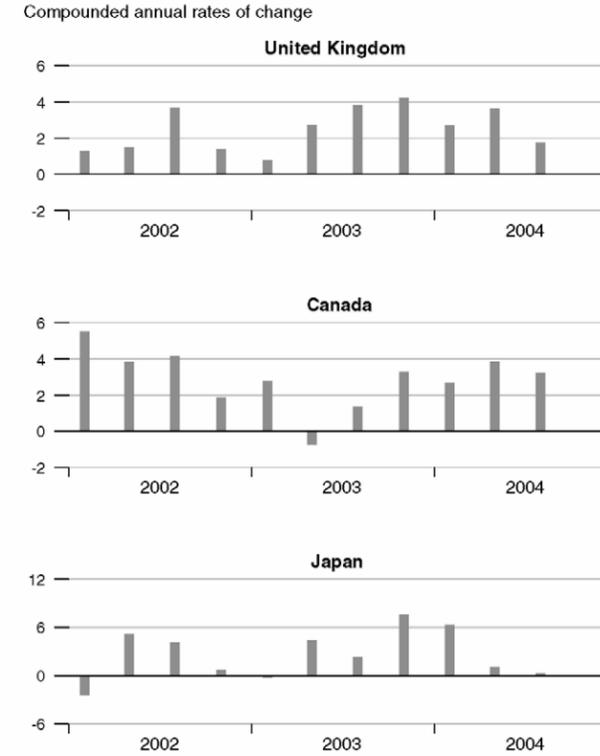
Trade Balance



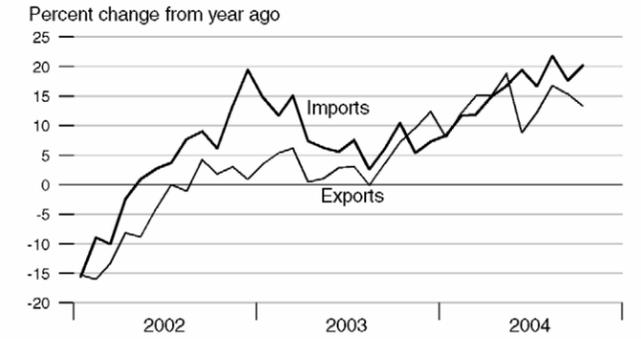
Current Account Balance



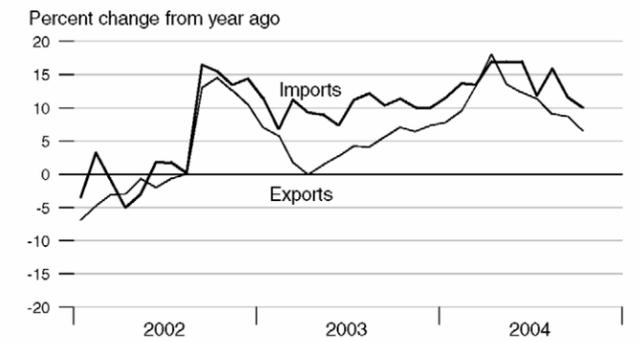
Real GDP Growth of Major Trading Partners



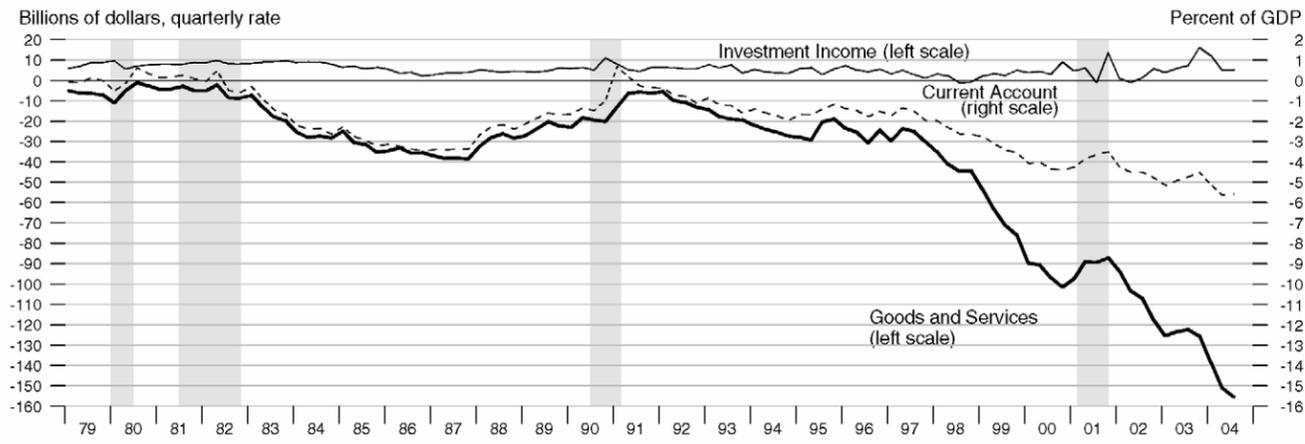
Goods Trade



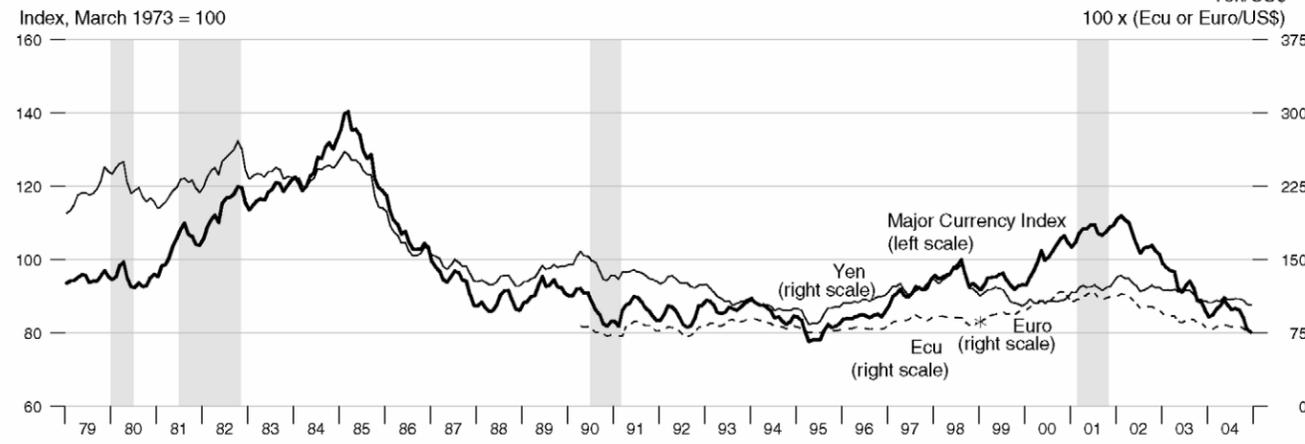
Services Trade



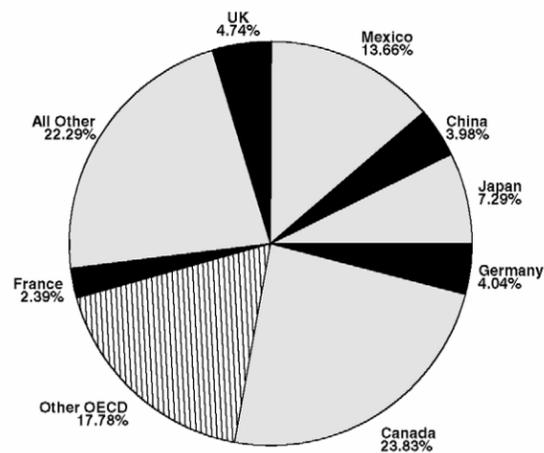
Current Account, Trade and Investment Income Balances



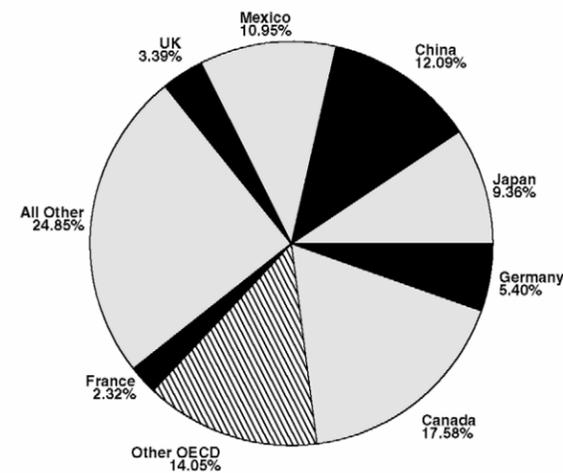
Exchange Rates



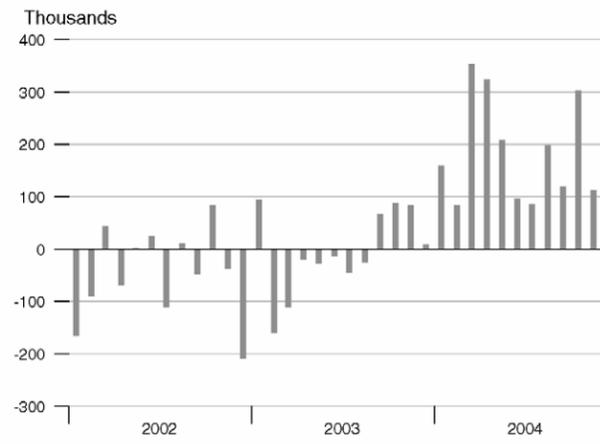
Goods Export Shares, 2003



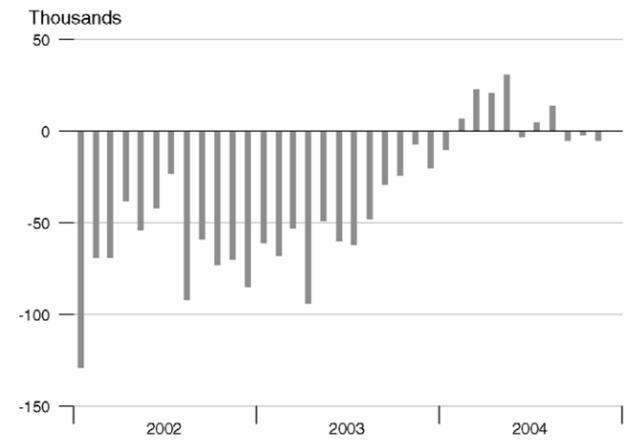
Goods Import Shares, 2003



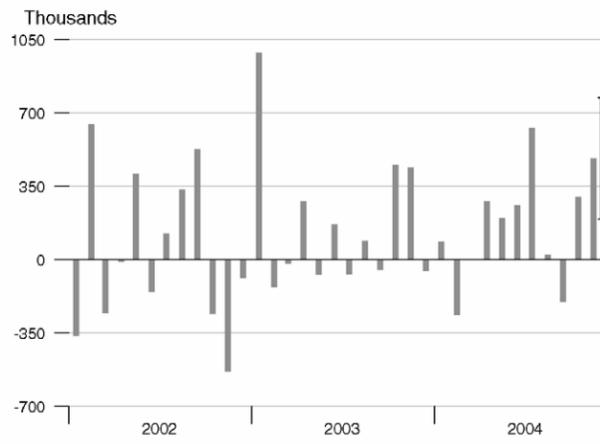
Change in Nonfarm Payrolls



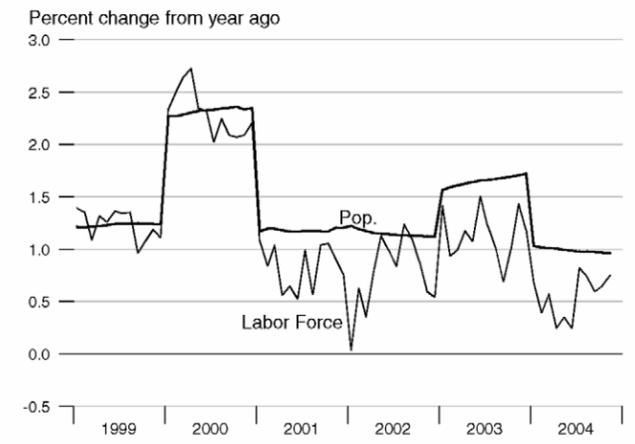
Change in Manufacturing Payrolls



Change in Household Employment



Labor Force and Population



Available Labor Supply and Components

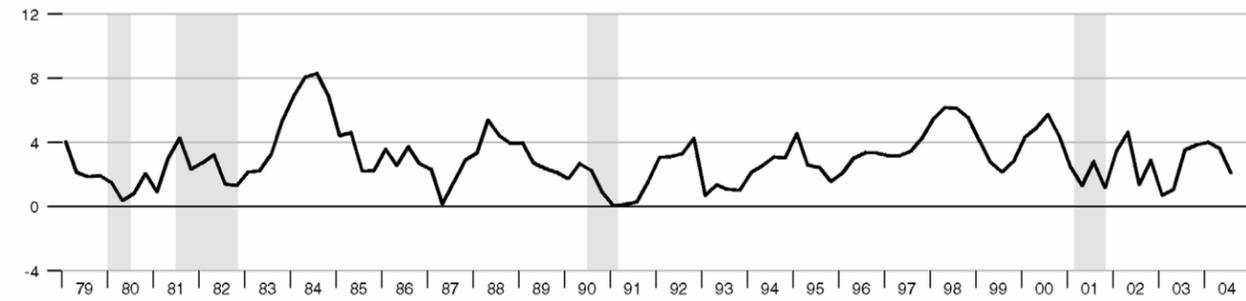


Unemployment Rate & Help-Wanted Index



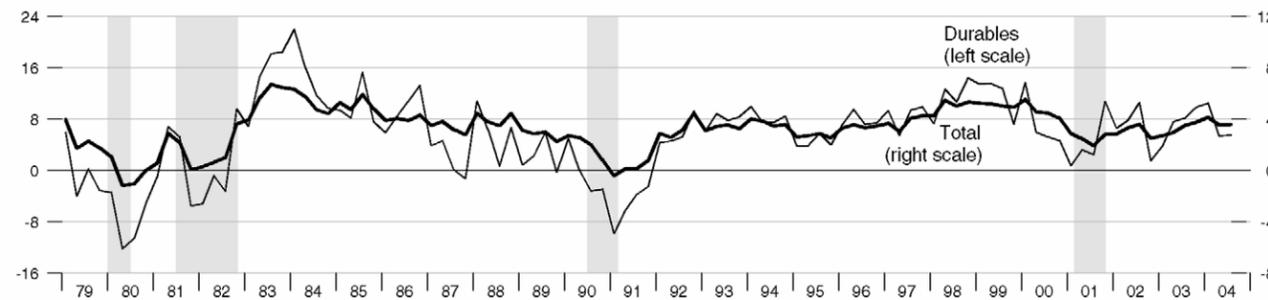
Real Disposable Personal Income

Percent change from year ago, quarterly data



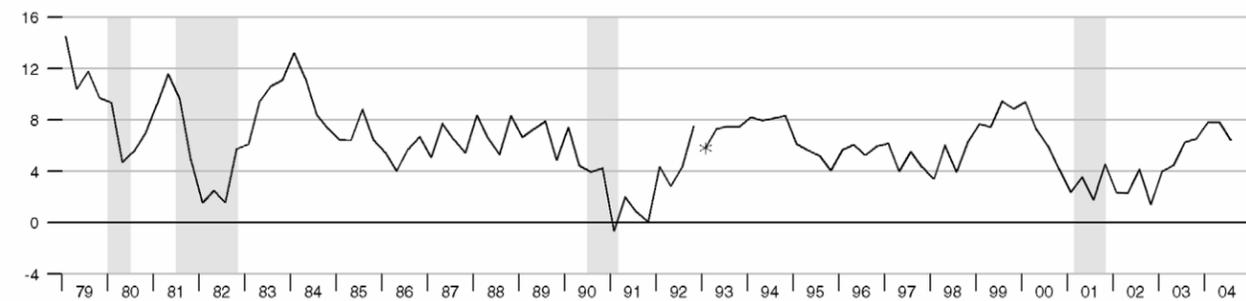
Real Consumption

Percent change from year ago, quarterly data



Retail and Food Services Sales

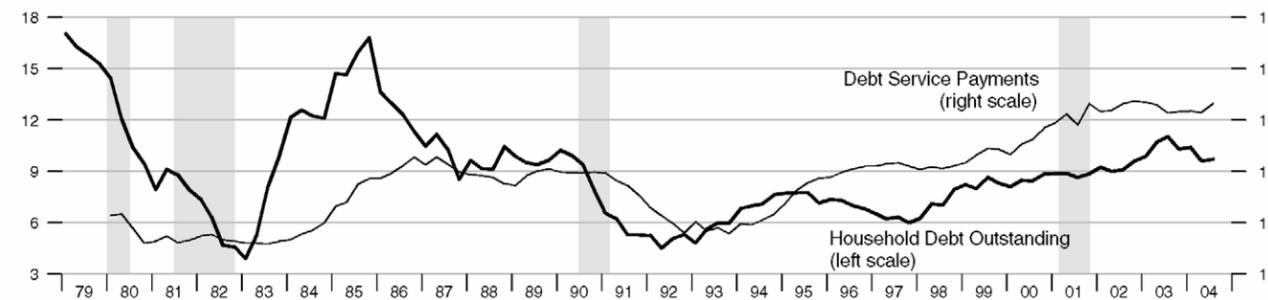
Percent change from year ago, quarterly average



*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).

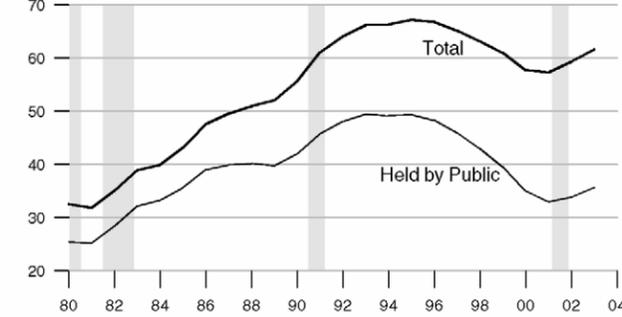
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data



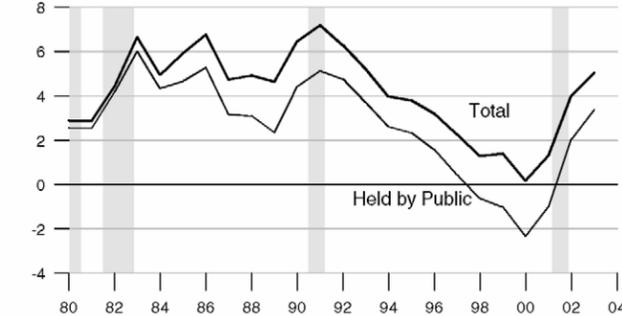
Federal Debt

Percent of GDP



Change in Federal Debt

Percent of GDP



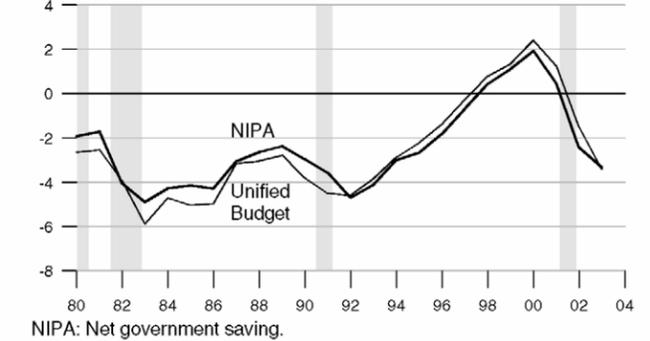
Federal Government Debt

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
2002		6228.2	2675.7	3552.6	604.2	2924.8	1200.8
2003		6783.2	2859.3	3924.0	656.1	3268.0	1455.5
2004		7379.1	3075.7	4303.4	700.3	3607.0	1861.9
2001	March	5773.7	2339.4	3434.4	523.9	2892.8	1029.9
	June	5726.8	2452.6	3274.2	535.1	2722.6	1000.5
	September	5807.5	2468.8	3338.7	534.1	2779.7	1005.5
	December	5943.4	2549.7	3393.8	551.7	2819.5	1051.2
2002	March	6006.0	2562.4	3443.7	575.4	2849.2	1067.1
	June	6126.5	2662.9	3463.5	590.7	2849.8	1135.4
	September	6228.2	2675.7	3552.6	604.2	2924.8	1200.8
	December	6405.7	2758.3	3647.4	629.4	3018.5	1246.8
2003	March	6460.8	2750.0	3710.8	641.5	3069.9	1286.5
	June	6670.1	2853.8	3816.3	652.1	3164.7	1382.8
	September	6783.2	2859.3	3924.0	656.1	3268.0	1455.5
	December	6998.0	2954.5	4044.1	666.7	3377.9	1538.1
2004	March	7131.1	2954.4	4176.7	674.1	3502.8	1704.8
	June	7274.3	3055.6	4218.7	687.4	3531.5	1799.8
	September	7379.1	3075.7	4303.4	700.3	3607.0	1861.9

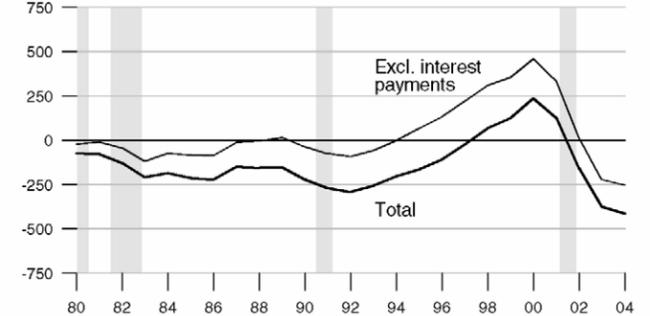
Federal Surplus (+) / Deficit (-)

Percent of GDP

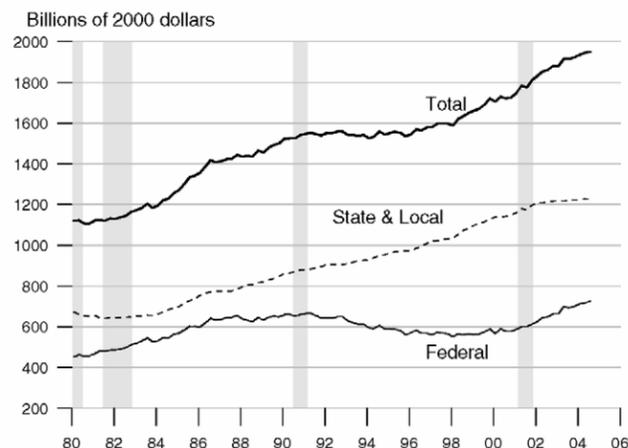


Federal Surplus (+) / Deficit (-), Unified Basis

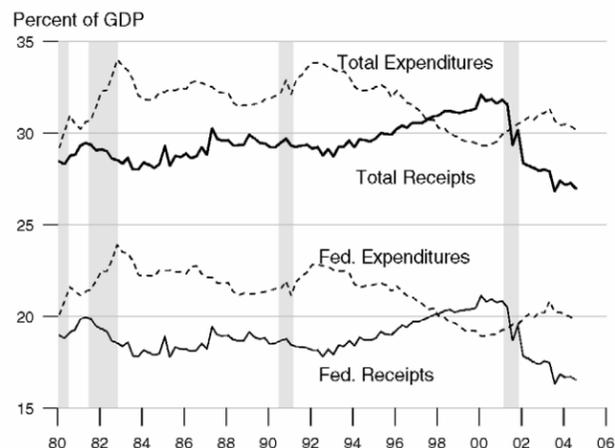
Billions of dollars, fiscal years



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures

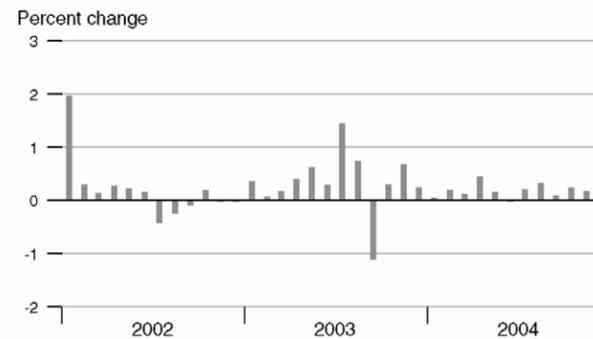


Government Budgets

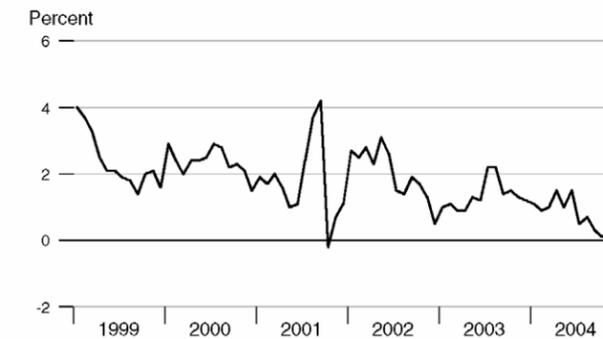
Billions of dollars

	National Income Accounts Calendar Years			Unified Budget Fiscal Years		
	State and Local	Federal		Federal		
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)
1991	789.2	793.3	-4.1	1101.3	1315.0	-213.7
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	1411.9	1436.9	-25.0	1847.3	2101.8	-254.5
2003	1494.9	1498.1	-3.2	1877.0	2241.6	-364.6
2001Q4	1372.5	1403.1	-30.6	1999.6	2004.3	-4.7
2002Q1	1380.9	1409.8	-28.9	1844.6	2053.1	-208.5
2002Q2	1404.1	1427.7	-23.6	1850.5	2102.1	-251.6
2002Q3	1423.9	1445.3	-21.4	1847.9	2103.1	-255.2
2002Q4	1438.5	1464.8	-26.3	1846.2	2148.8	-302.6
2003Q1	1437.7	1486.6	-48.9	1888.6	2170.2	-281.6
2003Q2	1484.6	1490.2	-5.6	1902.5	2266.9	-364.4
2003Q3	1511.4	1504.9	6.5	1816.4	2249.4	-433.0
2003Q4	1545.8	1510.5	35.3	1900.6	2279.8	-379.2
2004Q1	1550.6	1538.8	11.8	1915.3	2306.3	-391.0
2004Q2	1583.9	1565.7	18.2	1949.1	2329.1	-380.0
2004Q3	1574.7	1570.2	4.5	1956.7	2340.8	-384.1

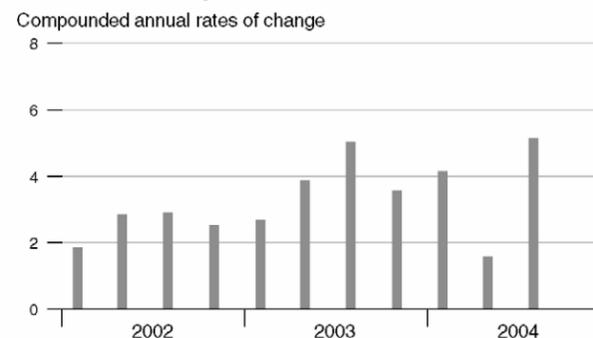
Real Disposable Personal Income



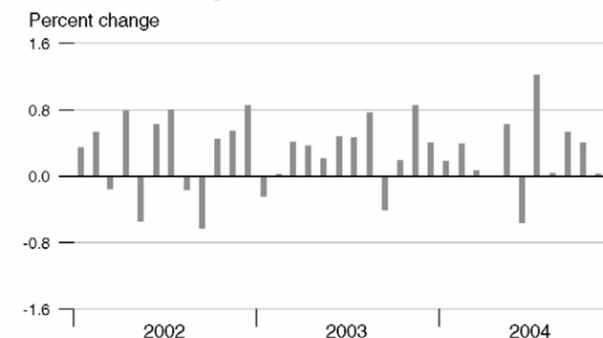
Personal Saving Rate



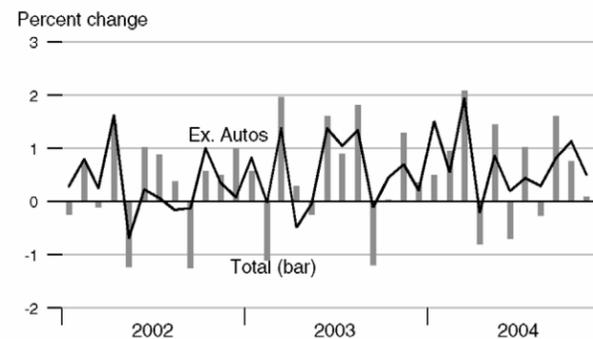
Real Consumption



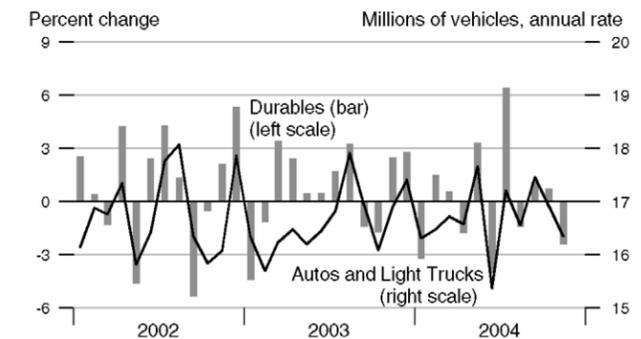
Real Consumption



Retail & Food Services



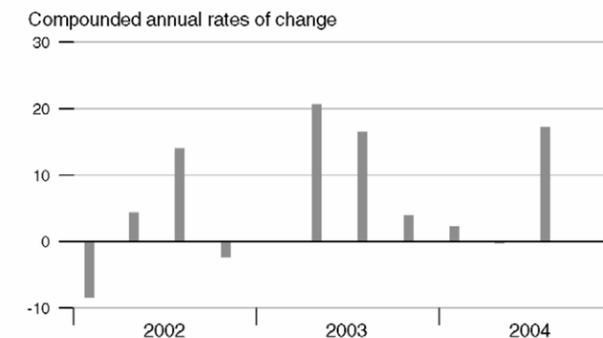
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)



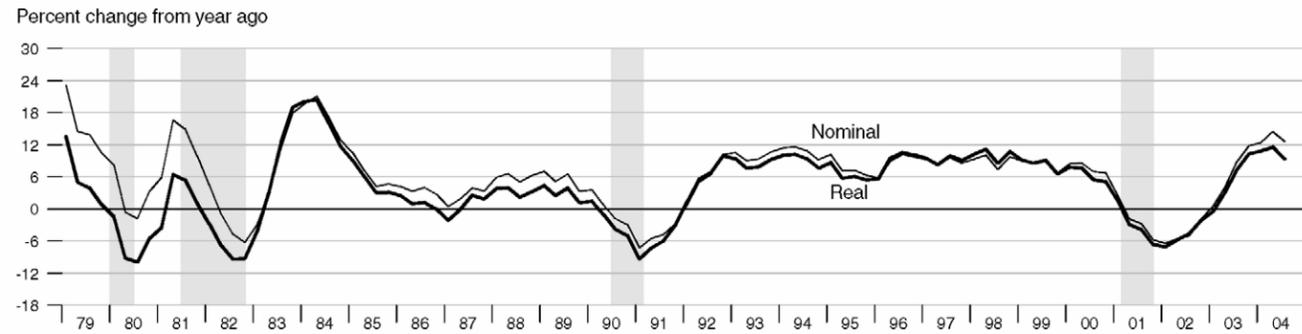
Real Durables Consumption



Investment



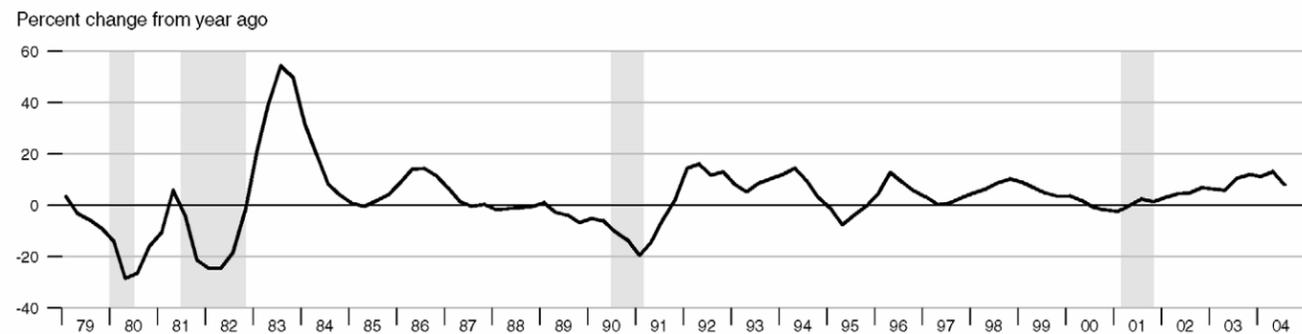
Private Fixed Investment



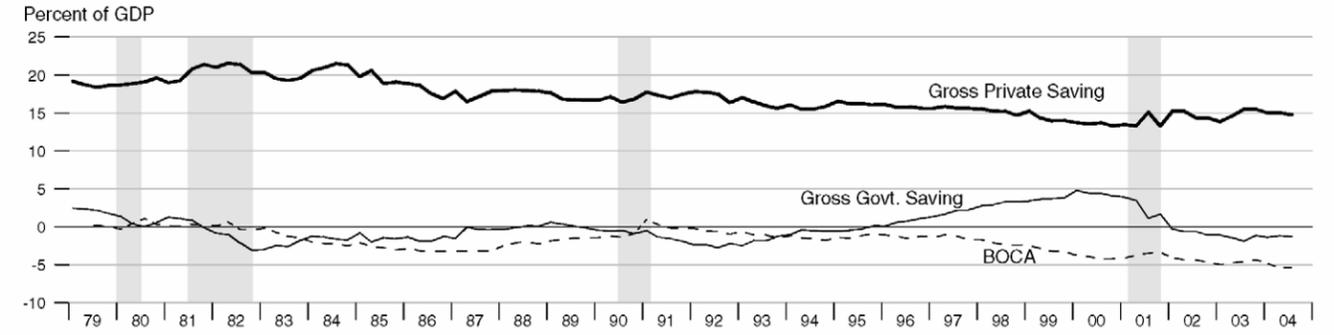
Real Nonresidential Fixed and Equipment & Software Investment



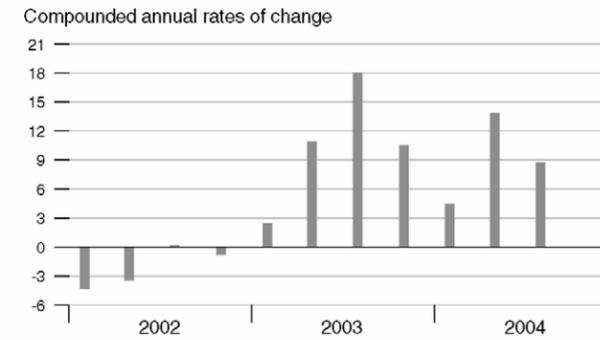
Real Residential Fixed Investment



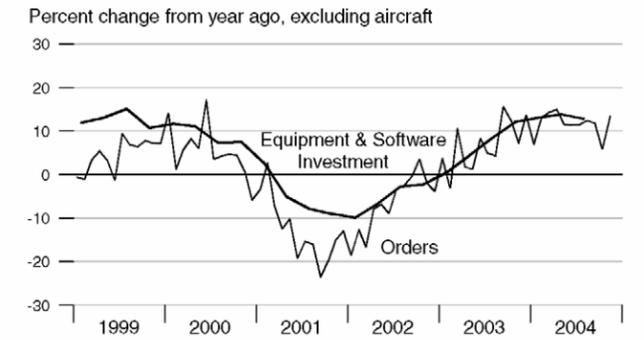
Gross Saving Rates and Balance on Current Account (NIPA)



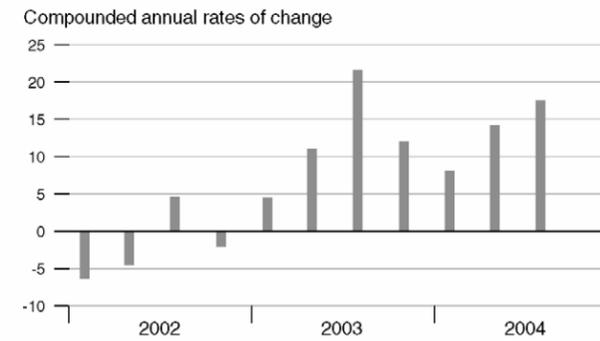
Real Private Fixed Investment



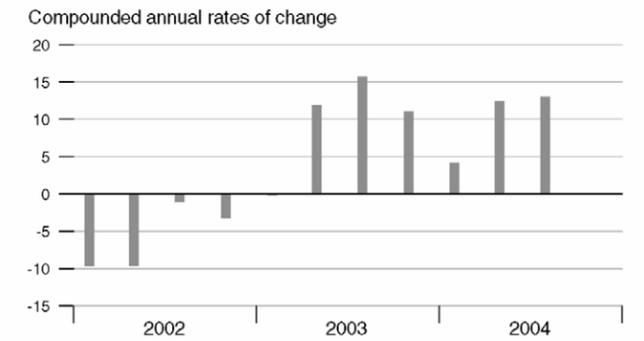
Nondefense Capital Goods Orders



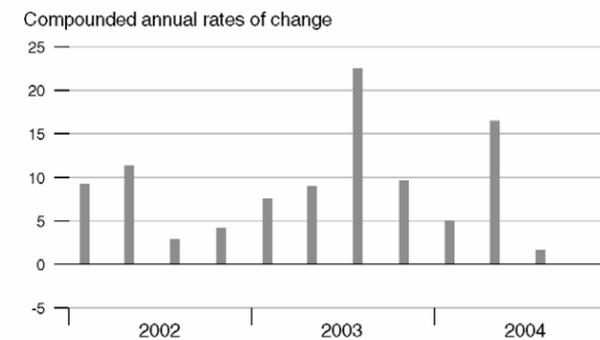
Real Equipment & Software Investment



Real Nonresidential Fixed Investment



Real Residential Fixed Investment



Housing Starts and New Home Sales

