

Bubbling (or Just Frothy) House Prices?

Real U.S. house prices, on average, have appreciated by 6 percent annually since 2000, a historically high rate when compared with the 2.7 percent annual rate between 1975 and 1999. Certain states have had especially high average annual rates since 2000: 12 percent in California, 11 percent in Rhode Island, and 10 percent in Nevada, Hawaii, and Florida. With such high rates of house price growth, many experts in the press and academic circles have debated whether we are currently facing a house price bubble.

House price bubbles are characterized by homebuyer expectations of unusually rapid price appreciation. Thus, many buy a home they consider expensive, in relation to current rental prices, under the expectation of continued price increases. When buyers perceive that prices have stopped increasing, however, expectations normalize and demand falls. House prices fall as the bubble “bursts.” Economic consequences of a potential housing burst are especially worrisome. Lower home values reduce homeowners’ wealth, causing significant declines in consumer demand and thus in GDP. In fact, Case, Quigley, and Shiller (2001) point out that the elasticity of consumption to housing wealth appears much higher than the elasticity to stock market equity. History further indicates that banks’ balance sheets—when proper risk management strategies are not in place—can be heavily exposed to price bursts in real estate. For these reasons, policymakers are keen on trying to identify the presence of a bubble.

Although criteria for detecting a bubble are debatable, we present a standard indicator of house affordability—prices divided by per capita income (P/I)—for all states plus the District of Columbia. (See map.) P/I provides a better measure than house price appreciation because it accounts for the evolution of income, a key factor in housing demand. California, New York, and Massachusetts, for instance, have high P/I ratios.

According to our calculations of P/I growth rates, if bubble conditions do exist, they appear only on the two coasts and in Michigan. Since 2000, for example, the average P/I ratios for California, Massachusetts, Oregon, Rhode Island, and New York have been at least 13 percent above their respective averages for the 1975-99 period. On the other hand, the same 2000-05 P/I measure for Texas, Oklahoma, Mississippi, and North Dakota has declined by 24 percent below its average for the 1975-99 period.

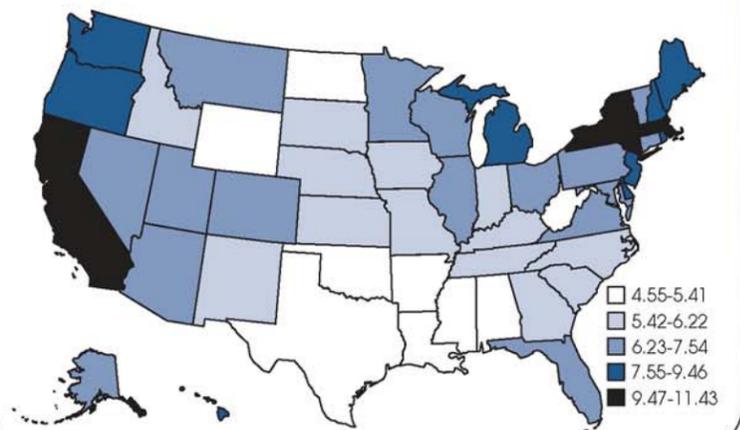
Yet, do the P/I ratios observed on the two coasts constitute a bubble? Note that when real estate is eval-

uated as a potential investment, housing prices should be determined by discounting the expected flow of income (rents) and other services using an appropriate risk-adjusted capitalization rate. Considering the difference between capitalization rates implied by house price indices and long-term government bond yields, we find indications against the presence of a bubble. House price data imply that the spread between capitalization rates and long-term bond yields has increased from an average level of 0.7 percent for the period 1975-99 to an average level of 2.3 percent for the period since 2000. These positive spreads imply that house prices have in fact remained consistent with risk-adjusted discounting of future rents. In fact, the spread has increased substantially in all 50 states (and the District of Columbia) between the 1975-99 period and the more recent period since 2000. Even in states that have comparatively low spreads (e.g., California and Massachusetts), the figure has remained positive and more than doubled between the two periods. In conclusion, the evidence in favor of a recent housing bubble is controversial at best. Ongoing research is struggling to isolate real house price increases justified by underlying fundamentals from irrational, possibly harmful, excesses.

—Massimo Guidolin and Elizabeth A. La Jeunesse

¹Karl E. Case, John M. Quigley, and Robert J. Shiller, “Comparing Wealth Effects: The Stock Market versus the Housing Market.” Working Paper No. 8606, National Bureau of Economic Research, 2001.

Housing Price Index/Personal Income Per Capita
Average Annual Value, 2000:Q1-2005:Q2



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

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

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

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

Pages 20, 21: **Output per Hour (Y/H)**, **Unit Labor Cost (C/Y)**, and **Compensation per Hour (C/H)** are indexes which approximately obey the following relationship: $\%(Y/H) + \%(C/Y) = \%(C/H)$ with $\%$ meaning percent changes. Unit labor cost is shown on page 9. **Real Compensation per Hour** uses the CPI to adjust for the effects of inflation. Nonfarm business accounted for about 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 (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.

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.

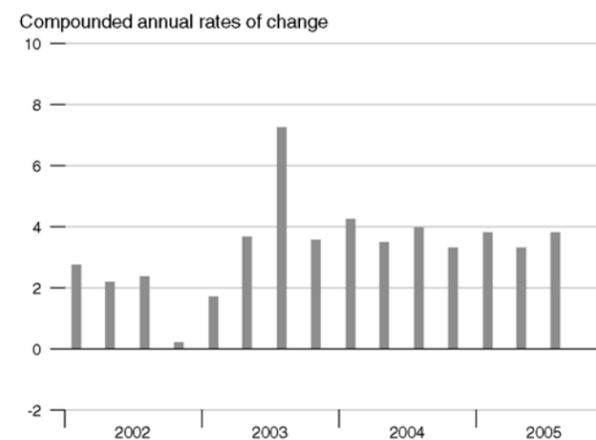
The Survey Research Center, The University of Michigan
 Consumer sentiment index.

The Conference Board
 Help-wanted advertising index.

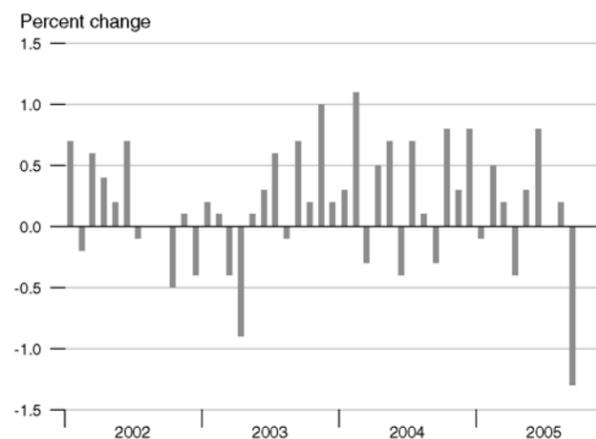
Organization for Economic Cooperation and Development (OECD)
 GDP for major trading partners (not available on FRED).

	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	
2000	172.2			3.4		181.3			2.4		138.0			3.8	
2001	177.1			2.8		186.1			2.7		140.7			1.9	
2002	179.8			1.6		190.4			2.3		138.9			-1.3	
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	
2003	1	183.2	1.0	4.2	2.9	4.2	192.4	0.3	1.4	1.8	1.4	142.7	2.0	8.4	3.3
	2	183.4	0.1	0.4	2.2	2.3	192.8	0.2	0.8	1.5	1.1	142.2	-0.4	-1.5	2.5
	3	184.4	0.5	2.2	2.2	2.2	193.6	0.4	1.6	1.3	1.3	143.5	0.9	3.8	3.4
	4	184.8	0.2	0.9	1.9	1.9	194.1	0.3	1.0	1.2	1.2	144.9	1.0	4.0	3.6
2004	1	186.6	1.0	3.9	1.8	3.9	195.0	0.5	1.9	1.3	1.9	145.9	0.7	2.8	2.2
	2	188.6	1.1	4.4	2.8	4.2	196.2	0.6	2.6	1.8	2.2	148.0	1.4	5.8	4.1
	3	189.4	0.4	1.6	2.7	3.3	197.1	0.4	1.7	1.8	2.1	148.6	0.4	1.6	3.5
	4	191.0	0.9	3.6	3.4	3.4	198.2	0.6	2.3	2.1	2.1	151.6	2.1	8.5	4.6
2005	1	192.2	0.6	2.4	3.0	2.4	199.5	0.6	2.6	2.3	2.6	152.7	0.7	2.8	4.7
	2	194.1	1.0	4.2	2.9	3.3	200.5	0.5	2.0	2.2	2.3	153.9	0.8	3.1	4.0
	3	196.6	1.3	5.1	3.8	3.9	201.2	0.4	1.5	2.1	2.0	156.7	1.8	7.5	5.5
2003	Sep	185.0	0.3	4.0	2.3	2.5	193.7	0.1	0.6	1.2	1.2	144.1	0.3	4.3	3.6
	Oct	184.8	-0.1	-1.3	2.0	2.1	194.0	0.2	1.9	1.3	1.3	144.8	0.5	6.0	3.4
	Nov	184.6	-0.1	-1.3	1.8	1.8	194.0	0.0	0.0	1.1	1.1	144.6	-0.1	-1.6	3.4
	Dec	185.0	0.2	2.6	1.9	1.9	194.2	0.1	1.2	1.1	1.1	145.3	0.5	6.0	4.0
2004	Jan	185.9	0.5	6.0	2.0	6.0	194.6	0.2	2.5	1.2	2.5	145.7	0.3	3.4	3.2
	Feb	186.5	0.3	3.9	1.7	5.0	194.9	0.2	1.9	1.2	2.2	145.6	-0.1	-0.8	2.1
	Mar	187.3	0.4	5.3	1.7	5.1	195.5	0.3	3.8	1.6	2.7	146.4	0.5	6.8	1.5
	Apr	187.7	0.2	2.6	2.3	4.4	195.9	0.2	2.5	1.8	2.6	147.4	0.7	8.5	3.7
	May	188.8	0.6	7.3	3.0	5.0	196.2	0.2	1.9	1.7	2.5	148.3	0.6	7.6	4.7
	Jun	189.3	0.3	3.2	3.2	4.7	196.6	0.2	2.5	1.9	2.5	148.2	-0.1	-0.8	3.9
	Jul	189.2	-0.1	-0.6	2.9	3.9	196.8	0.1	1.2	1.8	2.3	148.3	0.1	0.8	3.9
	Aug	189.3	0.1	0.6	2.7	3.5	196.9	0.1	0.6	1.7	2.1	148.5	0.1	1.6	3.4
	Sep	189.6	0.2	1.9	2.5	3.3	197.5	0.3	3.7	2.0	2.3	148.9	0.3	3.3	3.3
	Oct	190.7	0.6	7.2	3.2	3.7	197.9	0.2	2.5	2.0	2.3	151.1	1.5	19.2	4.4
	Nov	191.2	0.3	3.2	3.6	3.7	198.2	0.2	1.8	2.2	2.2	152.1	0.7	8.2	5.2
	Dec	191.2	0.0	0.0	3.4	3.4	198.5	0.2	1.8	2.2	2.2	151.7	-0.3	-3.1	4.4
2005	Jan	191.3	0.1	0.6	2.9	0.6	198.9	0.2	2.4	2.2	2.4	151.9	0.1	1.6	4.3
	Feb	192.0	0.4	4.5	2.9	2.5	199.4	0.3	3.1	2.3	2.8	152.5	0.4	4.8	4.7
	Mar	193.2	0.6	7.8	3.2	4.3	200.1	0.4	4.3	2.4	3.3	153.7	0.8	9.9	5.0
	Apr	194.2	0.5	6.4	3.5	4.8	200.2	0.0	0.6	2.2	2.6	154.4	0.5	5.6	4.7
	May	194.1	-0.1	-0.6	2.8	3.7	200.5	0.1	1.8	2.2	2.4	153.7	-0.5	-5.3	3.6
	Jun	194.1	0.0	0.0	2.5	3.1	200.7	0.1	1.2	2.1	2.2	153.5	-0.1	-1.6	3.6
	Jul	195.1	0.5	6.4	3.1	3.5	201.0	0.1	1.8	2.1	2.2	155.1	1.0	13.3	4.6
	Aug	196.1	0.5	6.3	3.6	3.9	201.2	0.1	1.2	2.2	2.0	156.0	0.6	7.2	5.1
	Sep	198.5	1.2	15.7	4.7	5.1	201.4	0.1	1.2	2.0	2.0	158.9	1.9	24.7	6.7

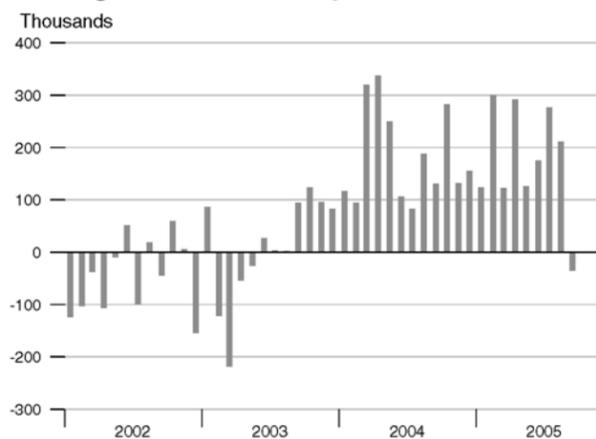
Real GDP Growth



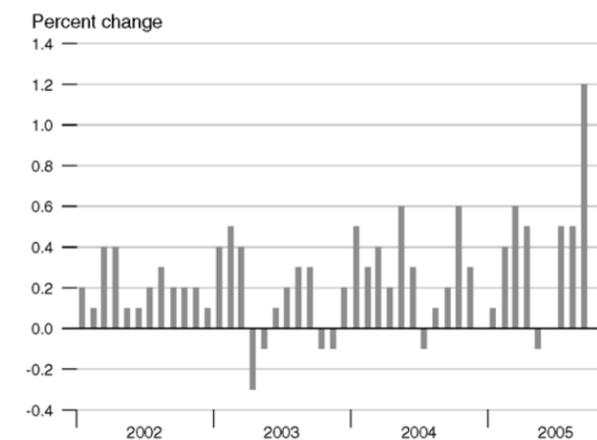
Industrial Production



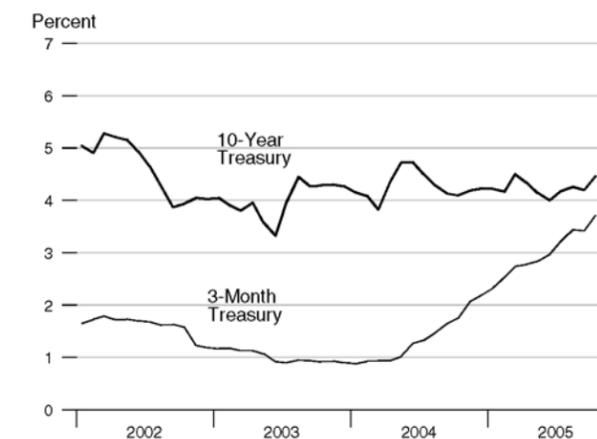
Change in Nonfarm Payrolls



Consumer Price Index



Interest Rates

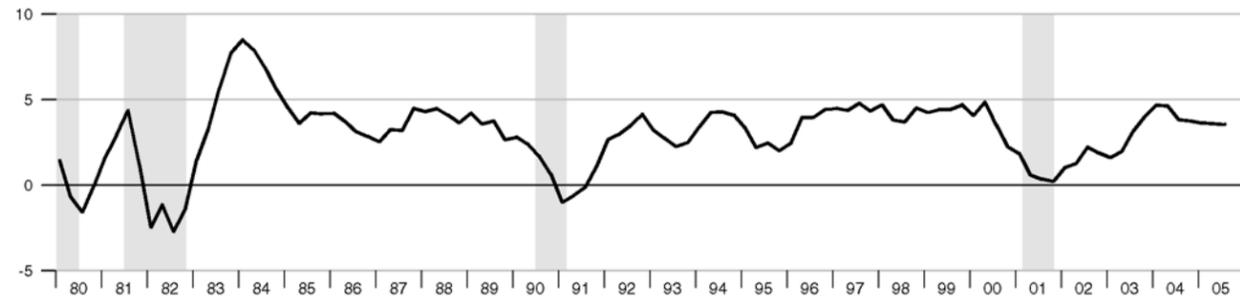


Unemployment Rate



Real Gross Domestic Product

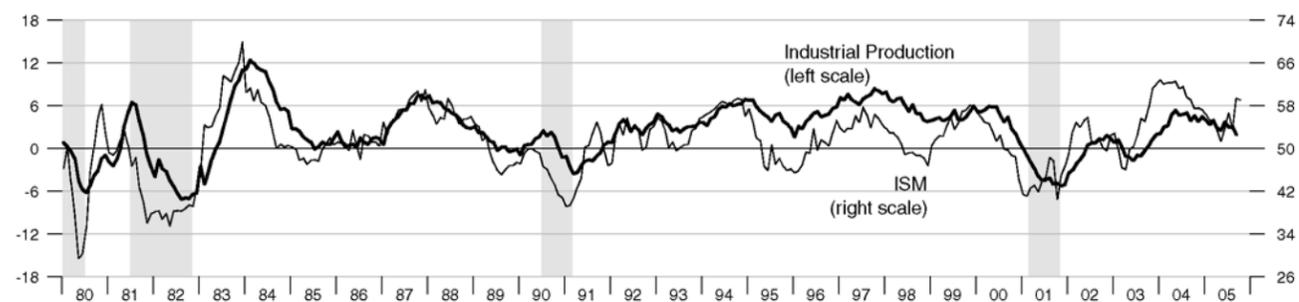
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago

Index



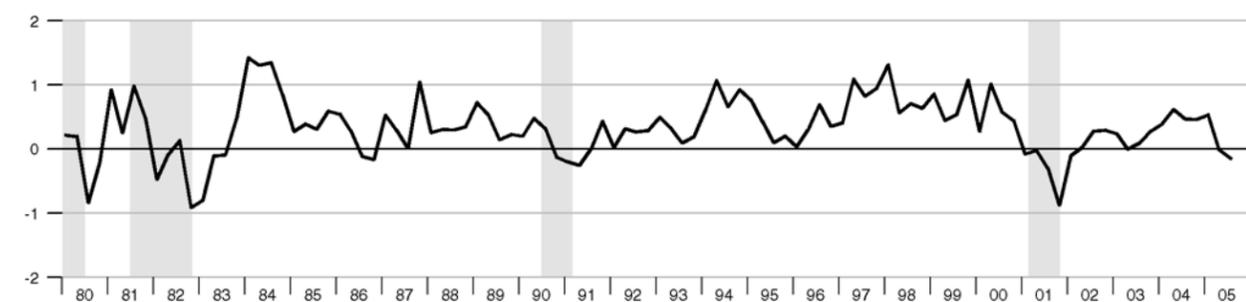
Aggregate Private Nonfarm Hours

Percent change from year ago



Real Change in Private Inventories

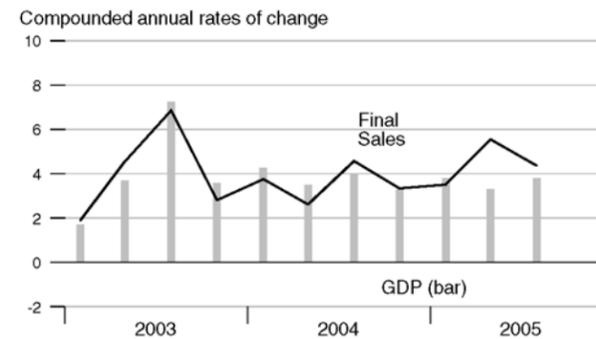
Percent of GDP



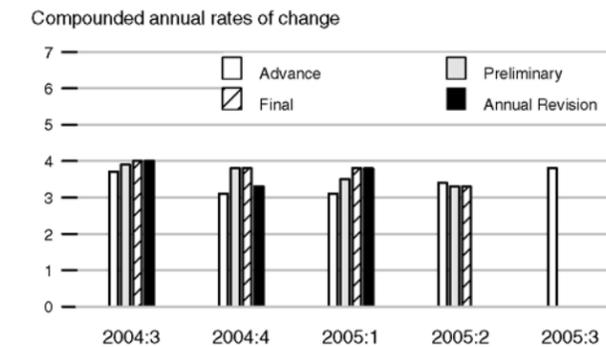
	Unempl. Rate	Retail and Food Services Sales			Industrial Production			Treasury Yields			
		Billions of dollars	Percent change		Index	Percent change		(Percent)			
			Monthly/quarterly	Annual rate	Year ago		Monthly/quarterly	Annual rate	Year ago	3-mo	10-yr
2000	4.0	3284.226			6.6	115.380			4.3	5.82	6.03
2001	4.8	3388.094			3.2	111.266			-3.6	3.39	5.02
2002	5.8	3474.391			2.5	110.959			-0.3	1.60	4.61
2003	6.0	3623.849			4.3	110.932			-0.0	1.01	4.02
2004	5.5	3887.542			7.3	115.528			4.1	1.37	4.27
2003	1	884.854	0.9	3.8	3.3	110.825	-0.2	-0.7	0.8	1.16	3.92
	2	895.092	1.2	4.7	3.3	109.707	-1.0	-4.0	-1.3	1.04	3.62
	3	919.020	2.7	11.1	5.0	110.825	1.0	4.1	-0.7	0.93	4.23
	4	924.883	0.6	2.6	5.5	112.369	1.4	5.7	1.2	0.92	4.29
2004	1	946.761	2.4	9.8	7.0	113.920	1.4	5.6	2.8	0.92	4.02
	2	961.468	1.6	6.4	7.4	115.130	1.1	4.3	4.9	1.08	4.60
	3	978.058	1.7	7.1	6.4	115.893	0.7	2.7	4.6	1.49	4.30
	4	1001.255	2.4	9.8	8.3	117.168	1.1	4.5	4.3	2.01	4.17
2005	1	1015.851	1.5	6.0	7.3	118.217	0.9	3.6	3.8	2.54	4.30
	2	1042.334	2.6	10.8	8.4	118.639	0.4	1.4	3.0	2.86	4.16
	3	1059.380	1.6	6.7	8.3	119.019	0.3	1.3	2.7	3.36	4.21
2003	Oct	305.969	-0.1	-1.0	5.3	111.559	0.2	2.5	0.4	0.92	4.29
	Nov	309.864	1.3	16.4	6.2	112.657	1.0	12.5	1.3	0.93	4.30
	Dec	309.050	-0.3	-3.1	5.1	112.892	0.2	2.5	2.0	0.90	4.27
2004	Jan	311.973	0.9	12.0	5.4	113.223	0.3	3.6	2.1	0.88	4.15
	Feb	313.973	0.6	8.0	7.7	114.426	1.1	13.5	3.1	0.93	4.08
	Mar	320.815	2.2	29.5	7.9	114.110	-0.3	-3.3	3.2	0.94	3.83
	Apr	317.103	-1.2	-13.0	6.7	114.736	0.5	6.8	4.7	0.94	4.35
	May	324.439	2.3	31.6	9.4	115.534	0.7	8.7	5.4	1.02	4.72
	Jun	319.926	-1.4	-15.5	6.2	115.120	-0.4	-4.2	4.7	1.27	4.73
	Jul	323.929	1.3	16.1	6.6	115.930	0.7	8.8	4.8	1.33	4.50
	Aug	324.257	0.1	1.2	5.0	116.036	0.1	1.1	5.0	1.48	4.28
	Sep	329.872	1.7	22.9	7.7	115.714	-0.3	-3.3	3.9	1.65	4.13
	Oct	332.280	0.7	9.1	8.6	116.649	0.8	10.1	4.6	1.76	4.10
	Nov	332.392	0.0	0.4	7.3	116.948	0.3	3.1	3.8	2.07	4.19
	Dec	336.583	1.3	16.2	8.9	117.908	0.8	10.3	4.4	2.19	4.23
2005	Jan	336.785	0.1	0.7	8.0	117.753	-0.1	-1.6	4.0	2.33	4.22
	Feb	338.991	0.7	8.1	8.0	118.303	0.5	5.8	3.4	2.54	4.17
	Mar	340.075	0.3	3.9	6.0	118.595	0.2	3.0	3.9	2.74	4.50
	Apr	346.081	1.8	23.4	9.1	118.067	-0.4	-5.2	2.9	2.78	4.34
	May	344.933	-0.3	-3.9	6.3	118.466	0.3	4.1	2.5	2.84	4.14
	Jun	351.320	1.9	24.6	9.8	119.384	0.8	9.7	3.7	2.97	4.00
	Jul	357.285	1.7	22.4	10.3	119.429	0.0	0.5	3.0	3.22	4.18
	Aug	350.634	-1.9	-20.2	8.1	119.611	0.2	1.8	3.1	3.44	4.26
	Sep	351.461	0.2	2.9	6.5	118.016	-1.3	-14.9	2.0	3.42	4.20
	Oct									3.71	4.46

	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
2000	136901	3400		2.5	131792	2800		2.2	103.5			1.8
2001	136940	40		0.0	131833	41		0.0	102.1			-1.4
2002	136483	-458		-0.3	130345	-1487		-1.1	100.0			-2.0
2003	137734	1252		0.9	129999	-347		-0.3	98.6			-1.4
2004	139248	1513		1.1	131475	1476		1.1	100.3			1.7
2003	1	137415	773	2.3	130093	-169	-0.5	-0.3	99.0	-0.4	-1.7	-1.3
	2	137652	237	0.7	129845	-248	-0.8	-0.4	98.3	-0.8	-3.1	-2.0
	3	137574	-77	-0.2	129890	45	0.1	-0.3	98.3	0.1	0.3	-1.5
	4	138296	722	2.1	130168	278	0.9	-0.1	98.8	0.5	2.0	-0.6
2004	1	138408	112	0.3	130541	374	1.2	0.3	99.3	0.5	2.0	0.3
	2	138883	475	1.4	131325	784	2.4	1.1	100.0	0.6	2.6	1.7
	3	139608	725	2.1	131731	406	1.2	1.4	100.6	0.6	2.4	2.3
	4	140092	484	1.4	132302	571	1.7	1.6	101.2	0.6	2.4	2.4
2005	1	140295	203	0.6	132814	512	1.6	1.7	101.7	0.6	2.3	2.4
	2	141404	1109	3.2	133429	616	1.9	1.6	102.4	0.7	2.8	2.5
	3	142319	915	2.6	133994	565	1.7	1.7	102.9	0.4	1.7	2.3
2003	Sep	137619	26	0.2	129953	94	0.9	-0.2	98.4	0.1	1.2	-1.5
	Oct	138022	403	3.6	130076	123	1.1	-0.2	98.8	0.4	5.0	-0.8
	Nov	138457	435	3.8	130172	96	0.9	-0.1	99.1	0.3	3.7	-0.4
	Dec	138409	-48	-0.4	130255	83	0.8	0.1	98.6	-0.5	-5.9	-0.7
2004	Jan	138481	72	0.6	130372	117	1.1	0.1	99.3	0.7	8.9	0.0
	Feb	138334	-147	-1.3	130466	94	0.9	0.3	99.4	0.1	1.2	0.5
	Mar	138408	74	0.6	130786	320	3.0	0.7	99.3	-0.1	-1.2	0.4
	Apr	138645	237	2.1	131123	337	3.1	1.0	99.7	0.4	4.9	1.4
	May	138846	201	1.8	131373	250	2.3	1.2	100.3	0.6	7.5	2.1
	Jun	139158	312	2.7	131479	106	1.0	1.3	99.9	-0.4	-4.7	1.6
	Jul	139639	481	4.2	131562	83	0.8	1.3	100.3	0.4	4.9	2.0
	Aug	139658	19	0.2	131750	188	1.7	1.5	100.5	0.2	2.4	2.2
	Sep	139527	-131	-1.1	131880	130	1.2	1.5	100.9	0.4	4.9	2.5
	Oct	139827	300	2.6	132162	282	2.6	1.6	101.2	0.3	3.6	2.4
	Nov	140293	466	4.1	132294	132	1.2	1.6	101.1	-0.1	-1.2	2.0
	Dec	140156	-137	-1.2	132449	155	1.4	1.7	101.2	0.1	1.2	2.6
2005	Jan	140241	85	0.7	132573	124	1.1	1.7	101.5	0.3	3.6	2.2
	Feb	140144	-97	-0.8	132873	300	2.7	1.8	101.8	0.3	3.6	2.4
	Mar	140501	357	3.1	132995	122	1.1	1.7	101.9	0.1	1.2	2.6
	Apr	141099	598	5.2	133287	292	2.7	1.7	102.5	0.6	7.3	2.8
	May	141475	376	3.2	133413	126	1.1	1.6	102.3	-0.2	-2.3	2.0
	Jun	141638	163	1.4	133588	175	1.6	1.6	102.5	0.2	2.4	2.6
	Jul	142076	438	3.8	133865	277	2.5	1.8	102.8	0.3	3.6	2.5
	Aug	142449	373	3.2	134076	211	1.9	1.8	103.0	0.2	2.4	2.5
	Sep	142432	-17	-0.1	134041	-35	-0.3	1.6	102.8	-0.2	-2.3	1.9

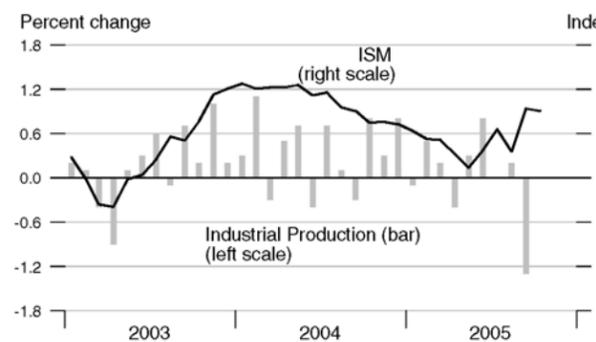
Real Final Sales and GDP



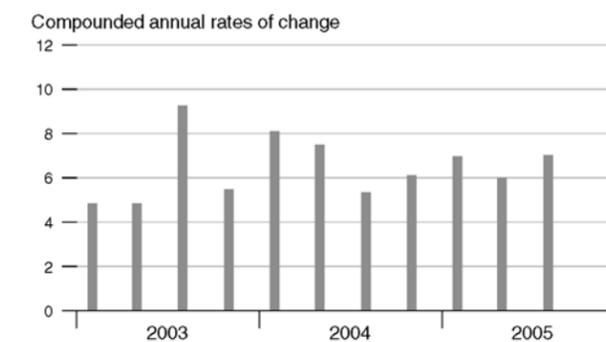
Real GDP Revisions



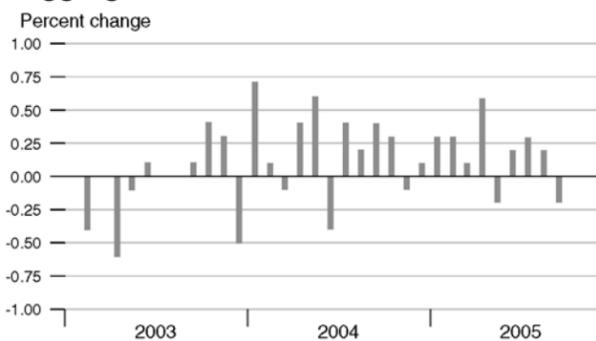
Industrial Production and ISM Index



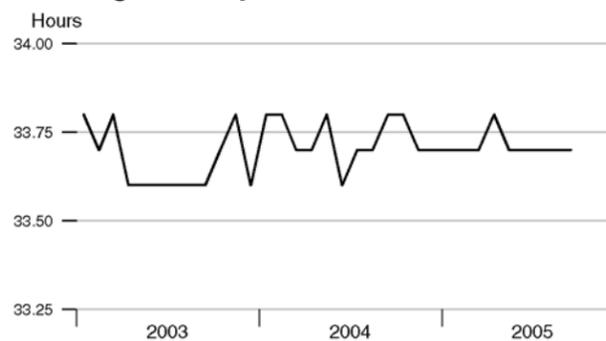
Nominal Gross Domestic Product



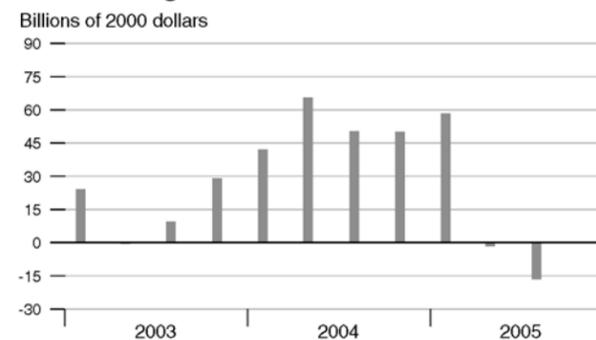
Aggregate Private Nonfarm Hours



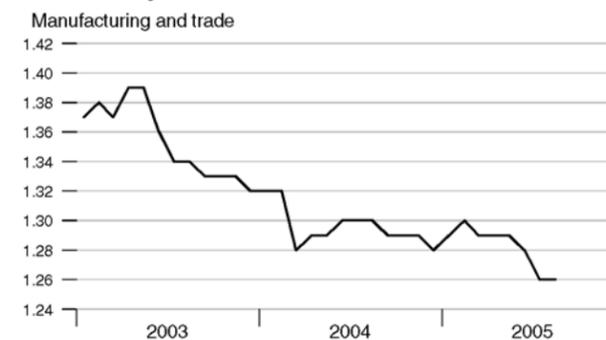
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

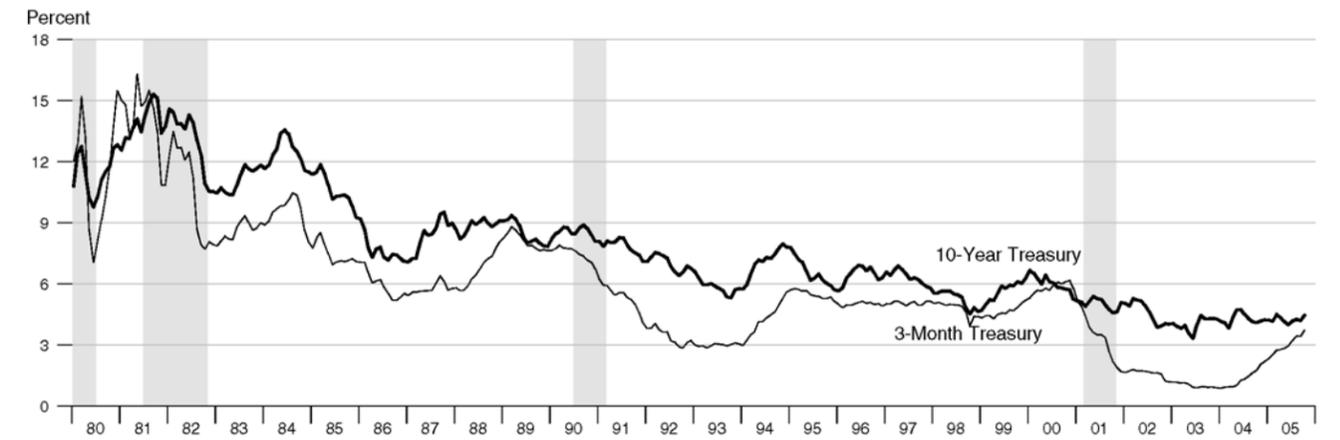


Inventory-Sales Ratio

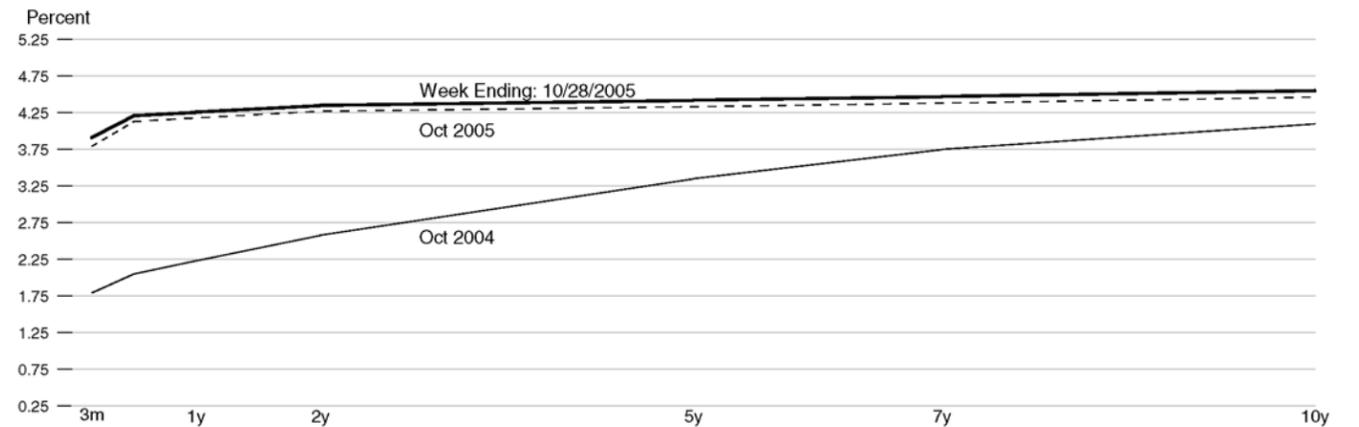


	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories		
	Billions of \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago	
2001	10128.0		3.2	9890.694		0.8	9920.940		1.6		-31.720	
2002	10469.6		3.4	10048.846		1.6	10036.504		1.2		12.482	
2003	10971.2		4.8	10320.580		2.7	10303.551		2.7		15.481	
2004	11734.3		7.0	10755.668		4.2	10702.364		3.9		51.983	
2002 1	10333.3	4.3	3.1	9977.280	2.7	1.0	9986.823	-0.2	1.0	-10.212	-32.332	
2	10426.6	3.7	2.9	10031.568	2.2	1.3	10028.403	1.7	1.2	2.647	-31.056	
3	10527.4	3.9	3.9	10090.666	2.4	2.2	10063.541	1.4	1.7	28.011	-16.569	
4	10591.1	2.4	3.6	10095.771	0.2	1.9	10067.250	0.1	0.8	29.482	12.482	
2003 1	10717.0	4.8	3.7	10138.573	1.7	1.6	10114.686	1.9	1.3	24.039	21.045	
2	10844.6	4.8	4.0	10230.362	3.7	2.0	10228.200	4.6	2.0	-0.447	20.271	
3	11087.4	9.3	5.3	10410.896	7.2	3.2	10399.496	6.9	3.3	9.330	15.601	
4	11236.0	5.5	6.1	10502.586	3.6	4.0	10471.822	2.8	4.0	29.000	15.481	
2004 1	11457.1	8.1	6.9	10612.536	4.3	4.7	10568.938	3.8	4.5	41.895	19.945	
2	11666.1	7.5	7.6	10704.128	3.5	4.6	10637.359	2.6	4.0	65.588	36.453	
3	11818.8	5.3	6.6	10808.876	4.0	3.8	10757.120	4.6	3.4	50.362	46.711	
4	11995.2	6.1	6.8	10897.130	3.3	3.8	10846.038	3.3	3.6	50.087	51.983	
2005 1	12198.8	7.0	6.5	10999.325	3.8	3.6	10940.325	3.5	3.5	58.165	56.051	
2	12378.0	6.0	6.1	11089.150	3.3	3.6	11089.172	5.6	4.2	-1.687	39.232	
3	12589.6	7.0	6.5	11193.210	3.8	3.6	11208.543	4.4	4.2	-16.582	22.496	
	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
2001	6910.356		2.5	900.682		4.3	1629.396		-3.0	1180.536		-4.2
2002	7099.261		2.7	964.784		7.1	1544.608		-5.2	1071.522		-9.2
2003	7306.564		2.9	1028.515		6.6	1600.014		3.6	1085.001		1.3
2004	7588.607		3.9	1089.906		6.0	1755.101		9.7	1186.660		9.4
2002 1	7042.246	1.4	2.8	948.433	-4.2	7.8	1551.458	-6.3	-7.6	1090.250	-12.8	-11.7
2	7083.491	2.4	3.1	956.911	3.6	8.9	1545.934	-1.4	-5.8	1073.334	-6.1	-9.8
3	7123.186	2.3	3.2	983.397	11.5	11.0	1543.214	-0.7	-4.9	1068.048	-2.0	-8.7
4	7148.189	1.4	1.9	970.413	-5.2	1.2	1537.824	-1.4	-2.5	1054.458	-5.0	-6.5
2003 1	7192.197	2.5	2.1	979.072	3.6	3.2	1540.947	0.8	-0.7	1051.612	-1.1	-3.5
2	7256.827	3.6	2.4	1014.028	15.1	6.0	1573.738	8.8	1.8	1072.915	8.4	-0.0
3	7360.681	5.8	3.3	1060.950	19.8	7.9	1628.993	14.8	5.6	1101.758	11.2	3.2
4	7416.416	3.1	3.8	1060.026	-0.3	9.2	1656.343	6.9	7.7	1113.721	4.4	5.6
2004 1	7501.399	4.7	4.3	1071.552	4.4	9.4	1684.399	6.9	9.3	1135.060	7.9	7.9
2	7536.579	1.9	3.9	1072.519	0.4	5.8	1744.540	15.1	10.9	1171.641	13.5	9.2
3	7617.519	4.4	3.5	1100.421	10.8	3.7	1780.168	8.4	9.3	1204.845	11.8	9.4
4	7698.796	4.3	3.8	1115.124	5.5	5.2	1811.279	7.2	9.4	1235.105	10.4	10.9
2005 1	7764.909	3.5	3.5	1122.315	2.6	4.7	1842.206	7.0	9.4	1252.194	5.7	10.3
2	7829.540	3.4	3.9	1143.898	7.9	6.7	1884.684	9.5	8.0	1278.967	8.8	9.2
3	7904.684	3.9	3.8	1173.484	10.8	6.6	1910.994	5.7	7.3	1298.446	6.2	7.8

Interest Rates



Treasury Yield Curve

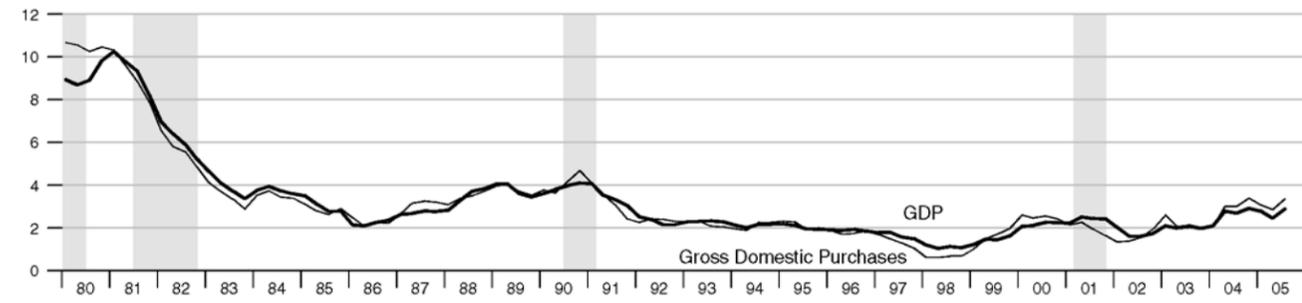


Standard and Poor's 500 Index with Reinvested Dividends



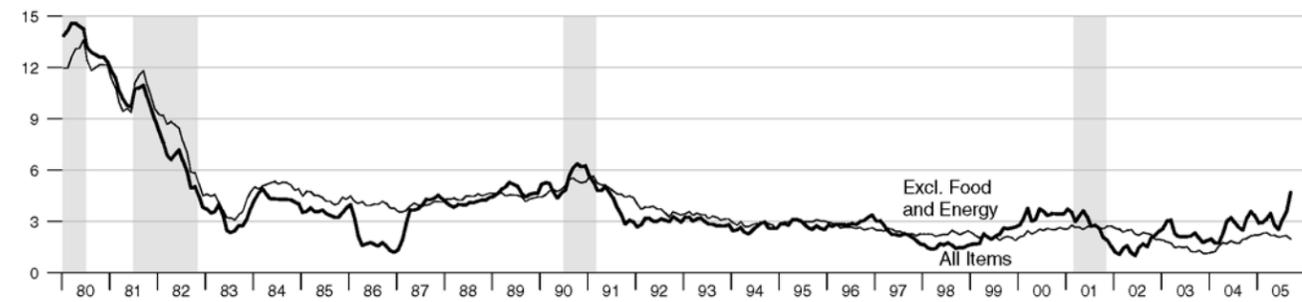
NIPA Chain Price Indexes

Percent change from year ago



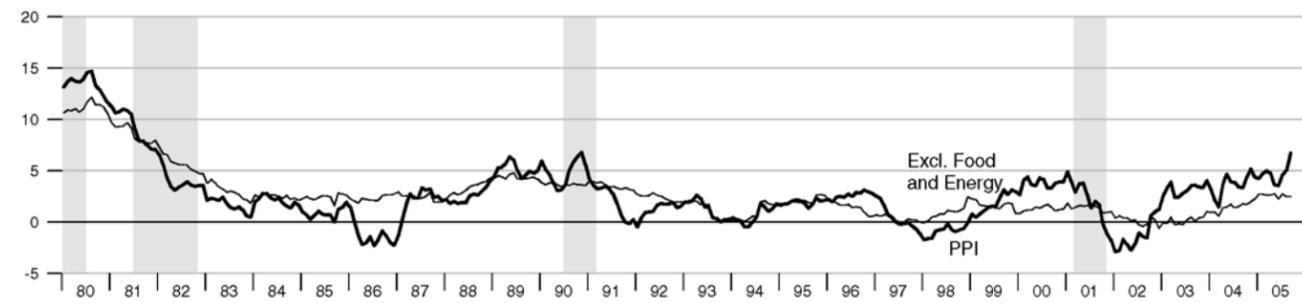
Consumer Price Index

Percent change from year ago



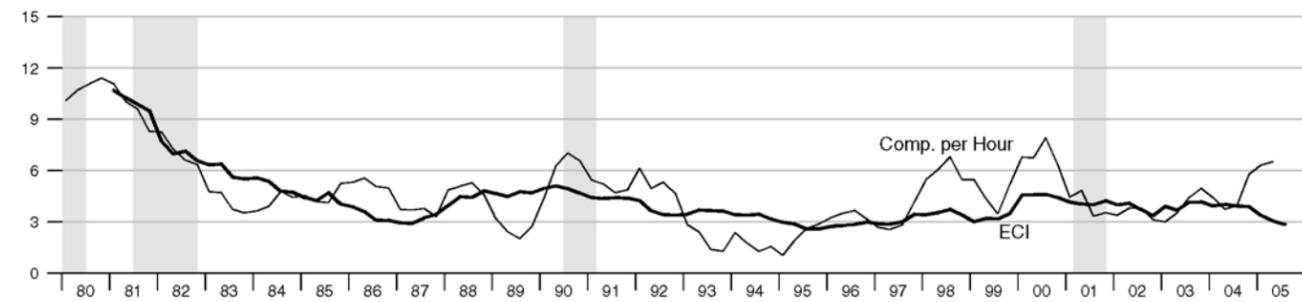
Producer Price Index, Finished Goods

Percent change from year ago



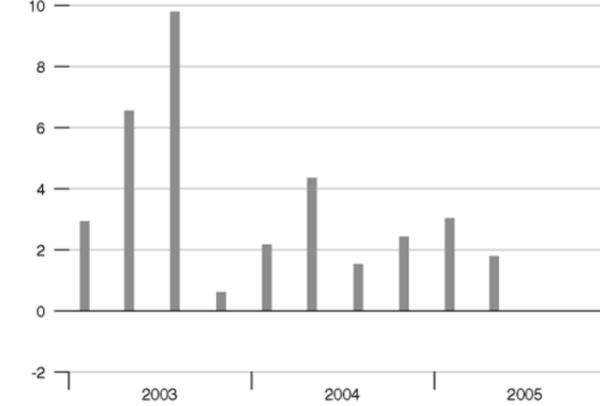
Employment Cost Index and Compensation per Hour

Percent change from year ago



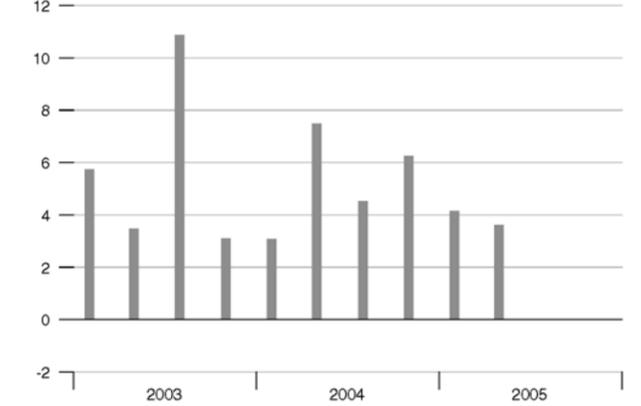
Nonfarm Output per Hour

Compounded annual rates of change

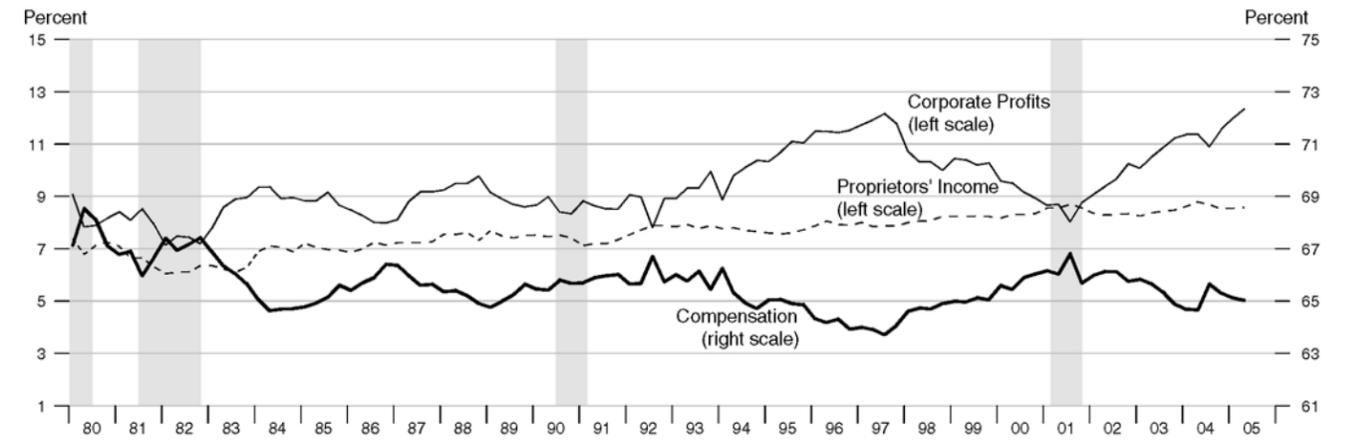


Manufacturing Output per Hour

Compounded annual rates of change

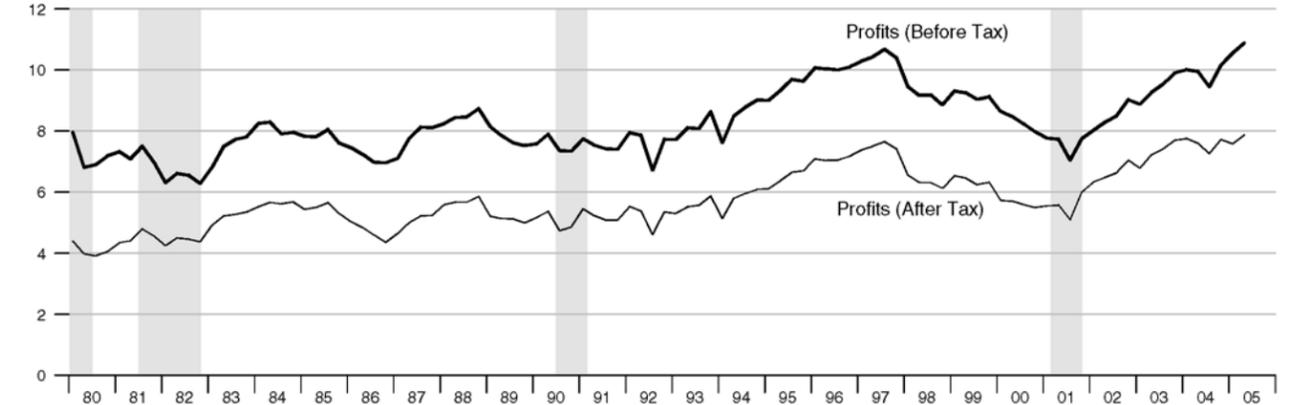


Selected Component Shares of National Income

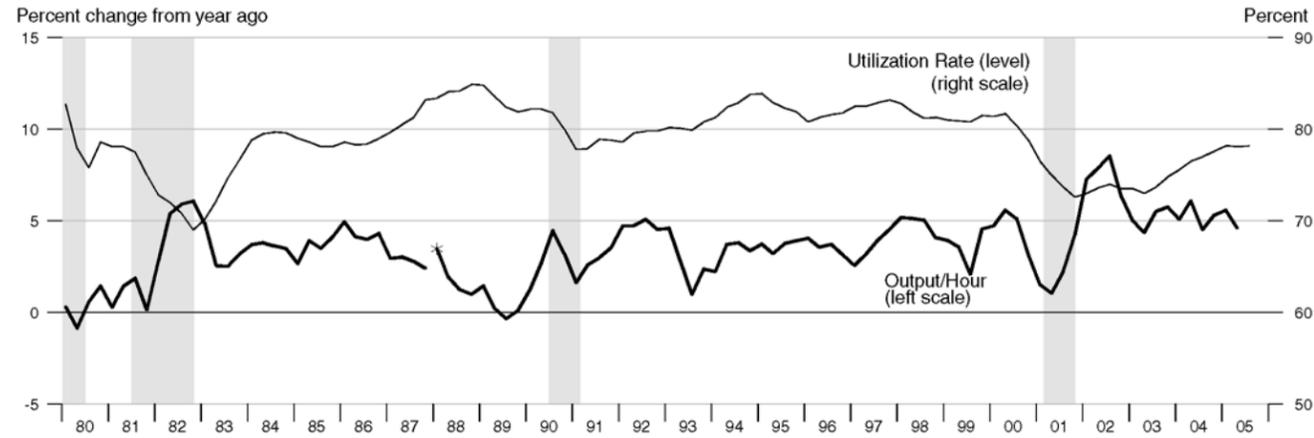


Corporate Profits

Percent of GDP

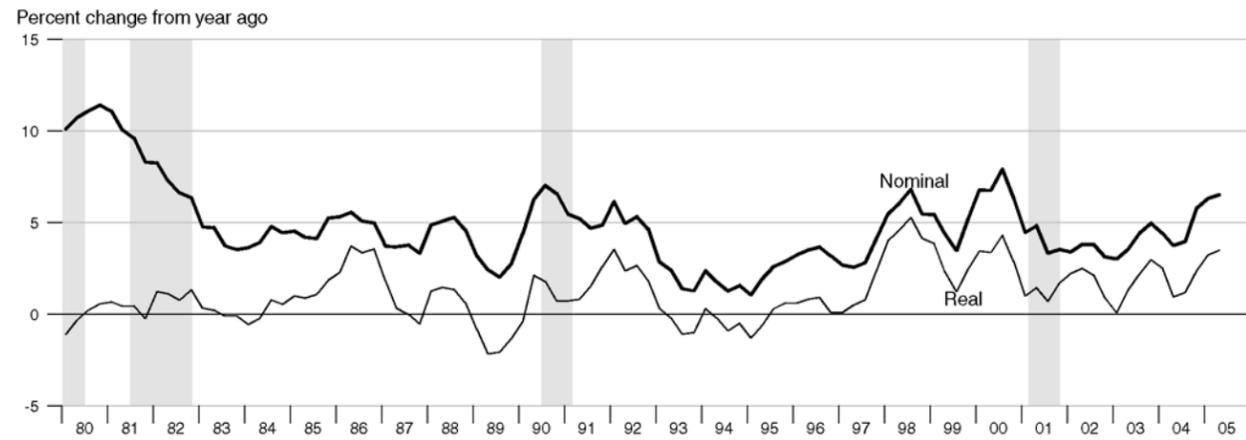


Output per Hour and Capacity Utilization, Manufacturing

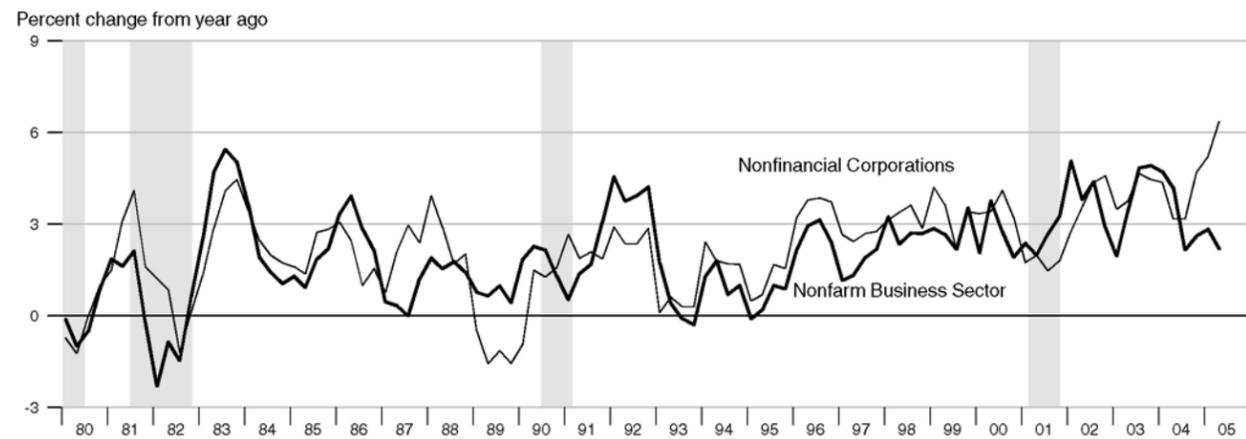


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

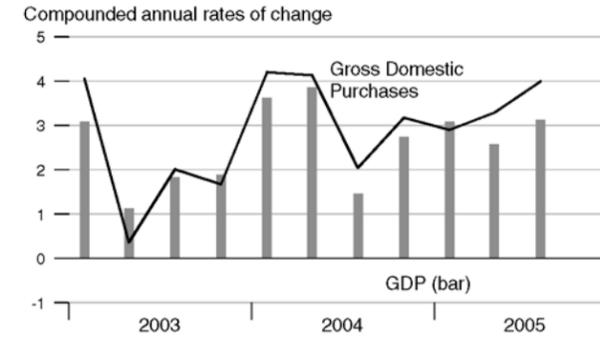
Nonfarm Compensation per Hour



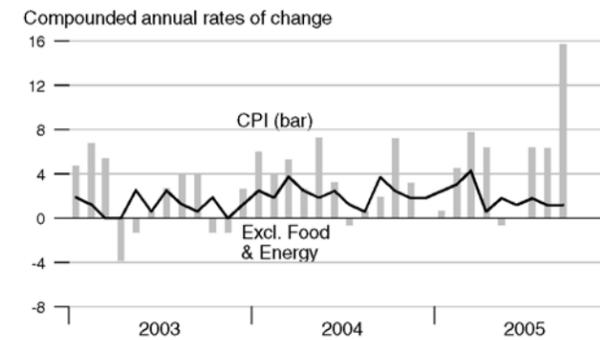
Output per Hour, Nonfarm Business and Nonfinancial Corporations



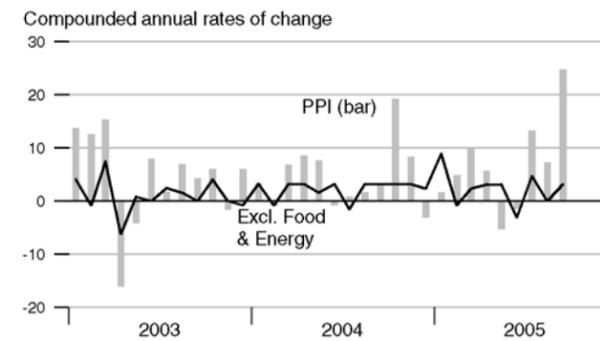
NIPA Chain Price Indexes



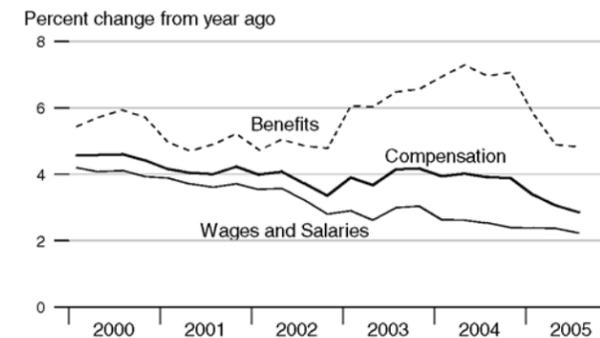
Consumer Price Index



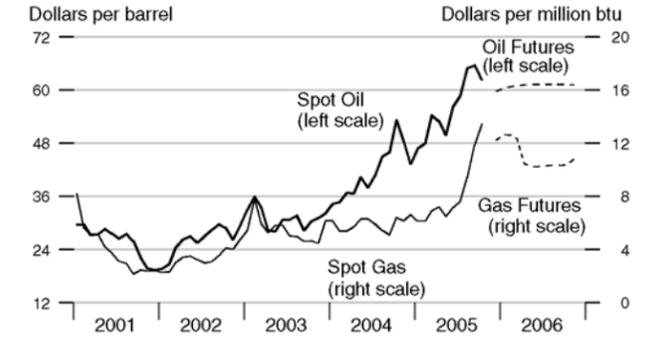
Producer Price Index, Finished Goods



Employment Cost Index

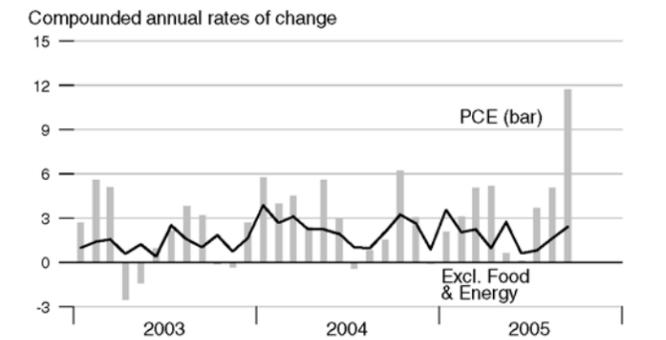


Oil & Natural Gas Prices: Spot & Futures

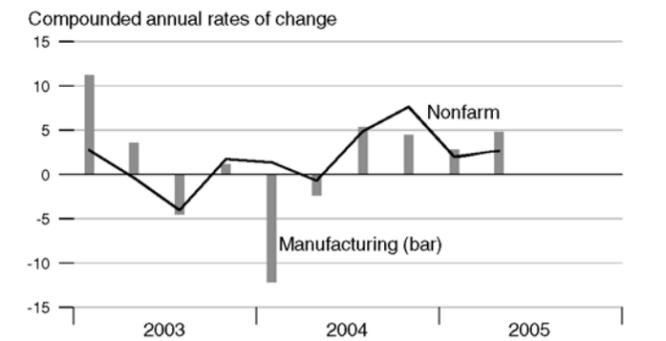


Note: Futures prices as of 10/31/2005.

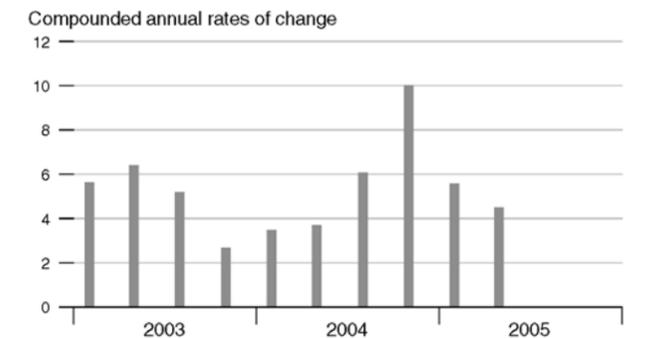
Consumption Chain Price Index



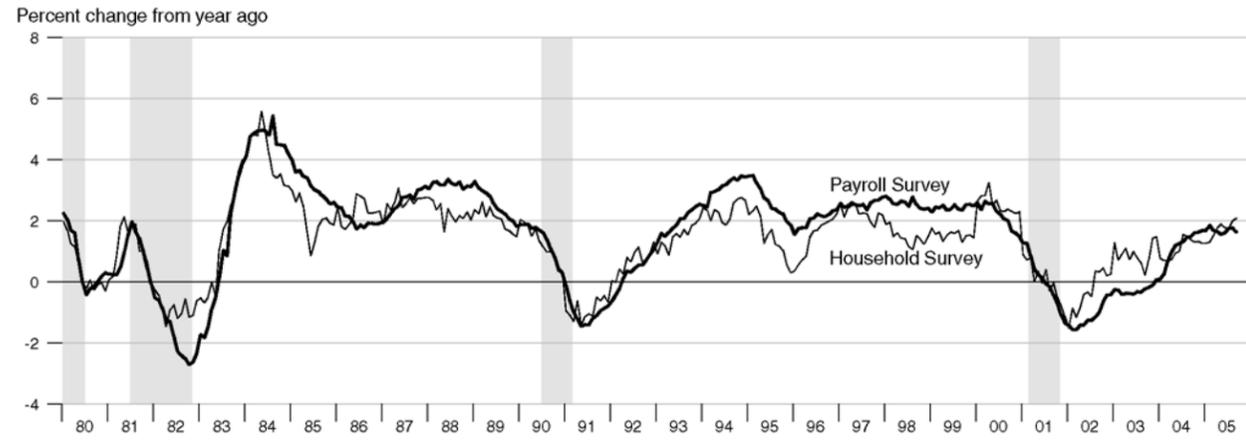
Unit Labor Cost



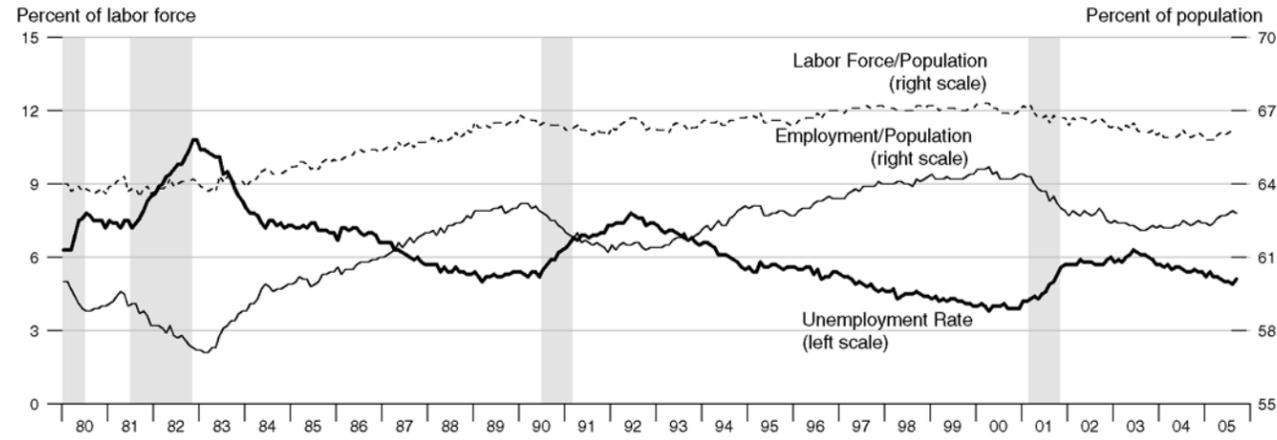
Compensation per Hour



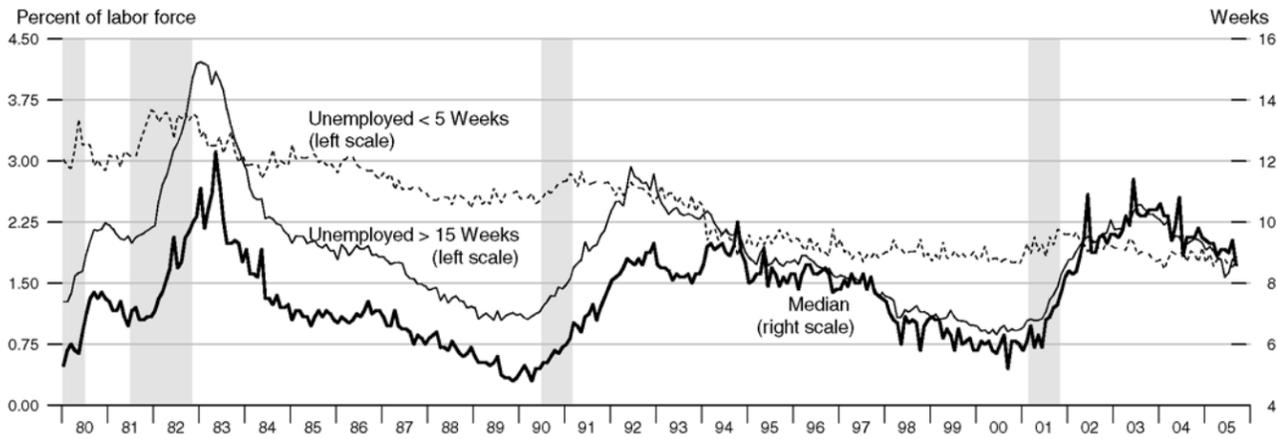
Employment



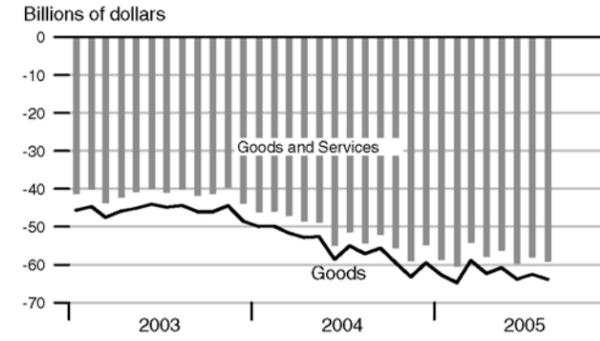
Unemployment, Labor Force Participation, and Employment Rates



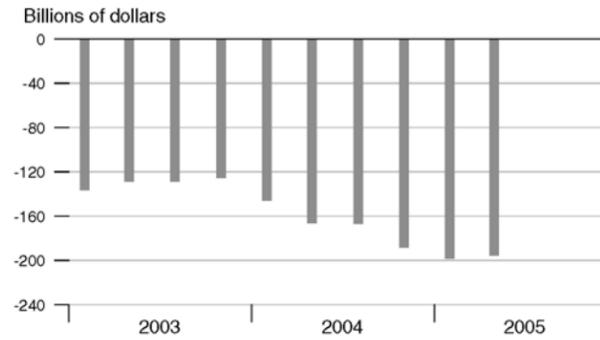
Duration of Unemployment



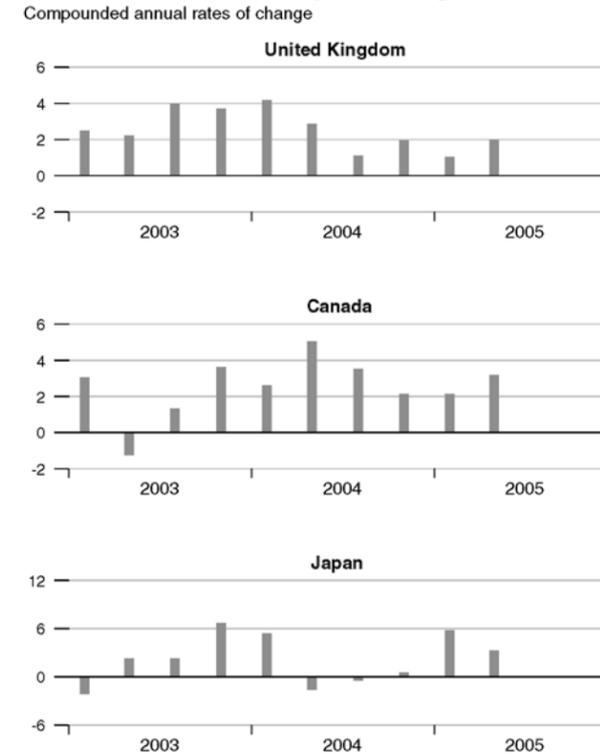
Trade Balance



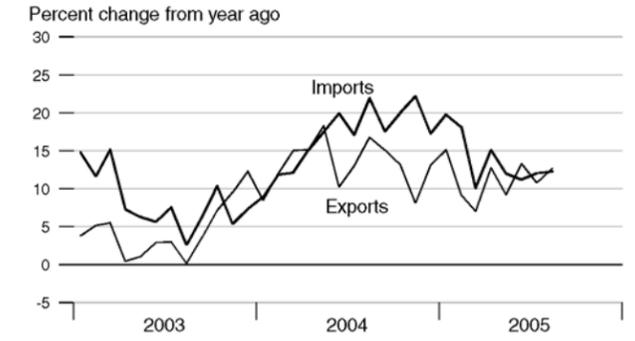
Current Account Balance



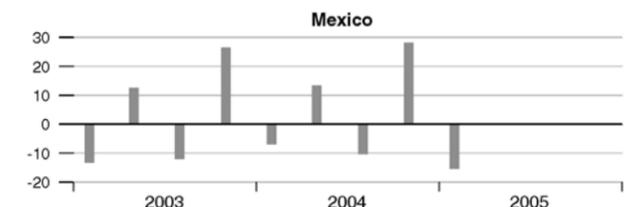
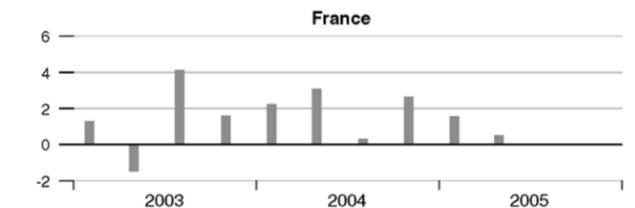
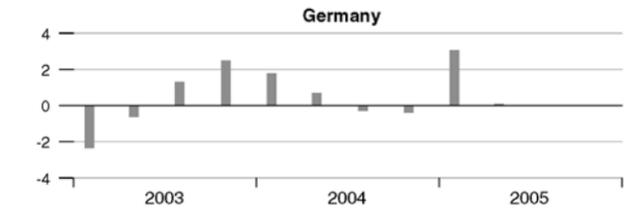
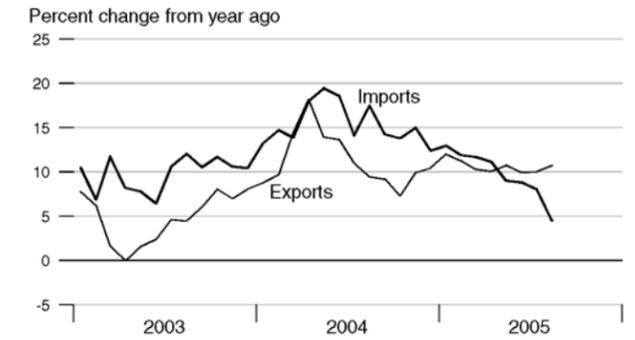
Real GDP Growth of Major Trading Partners



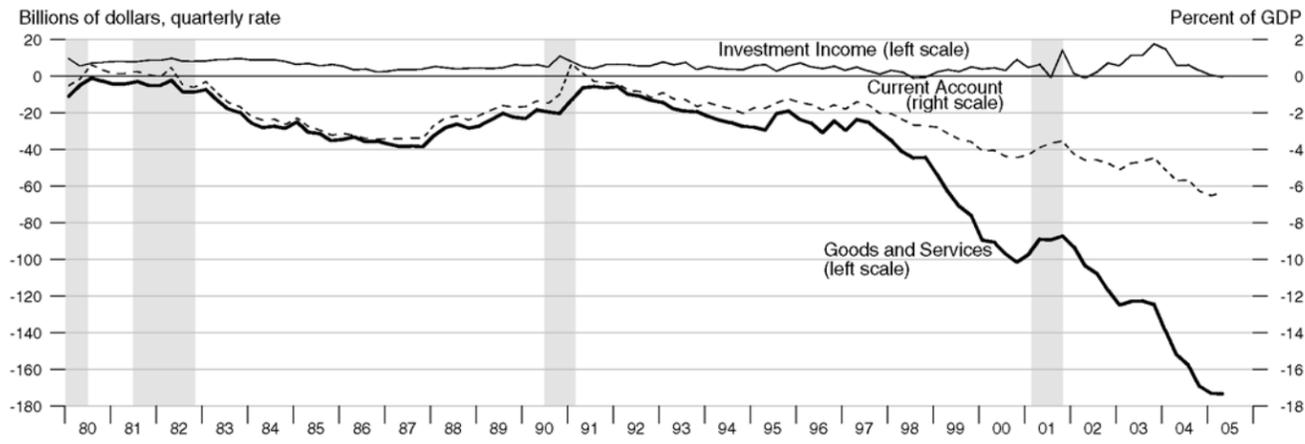
Goods Trade



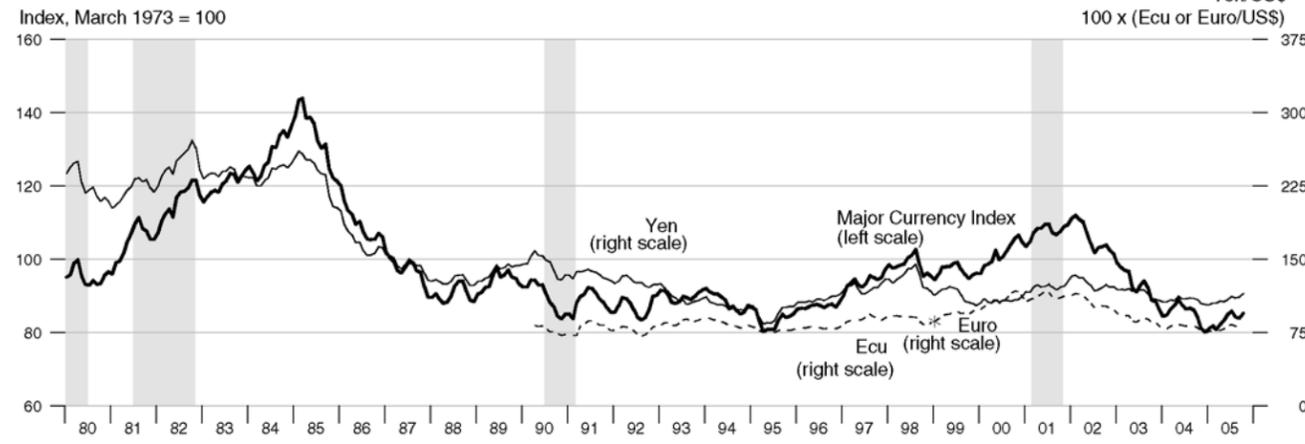
Services Trade



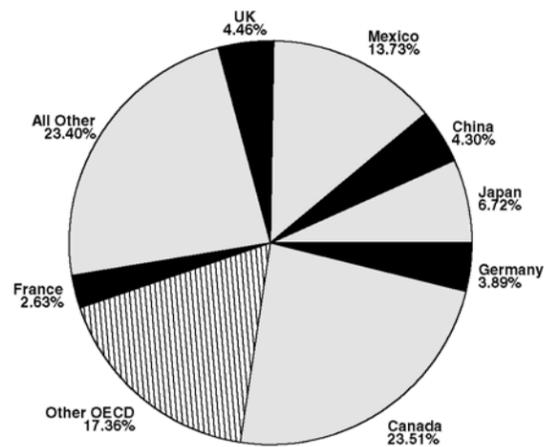
Current Account, Trade and Investment Income Balances



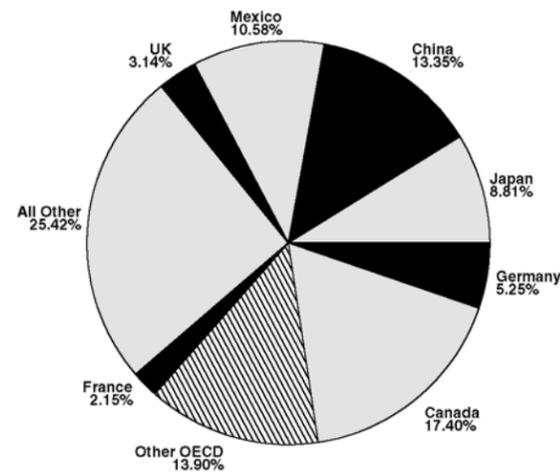
Exchange Rates



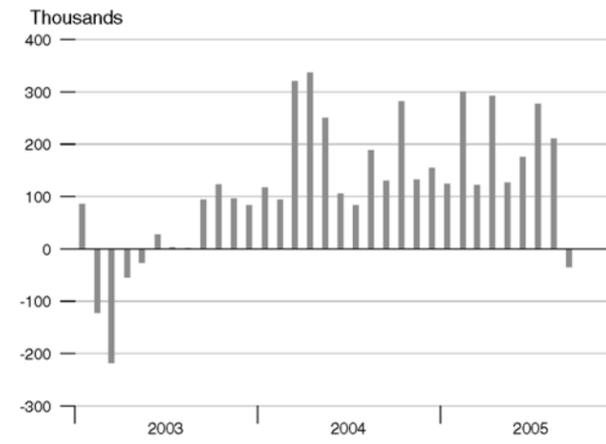
Goods Export Shares, 2004



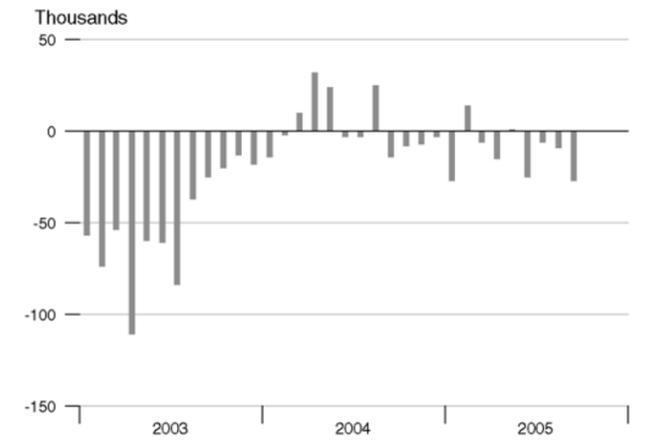
Goods Import Shares, 2004



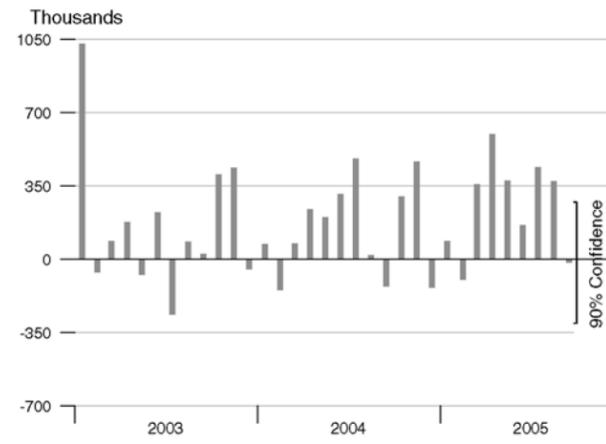
Change in Nonfarm Payrolls



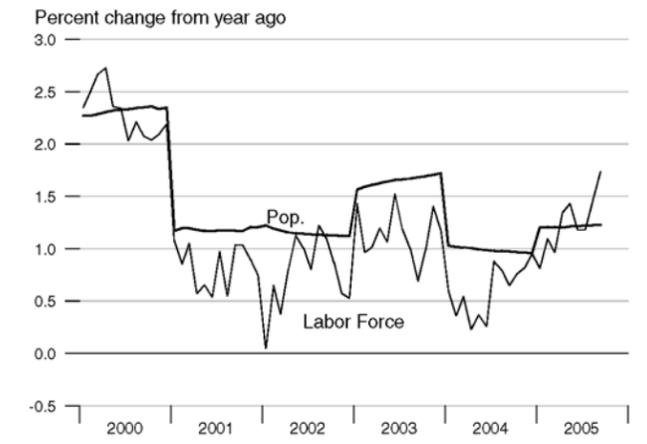
Change in Manufacturing Payrolls



Change in Household Employment



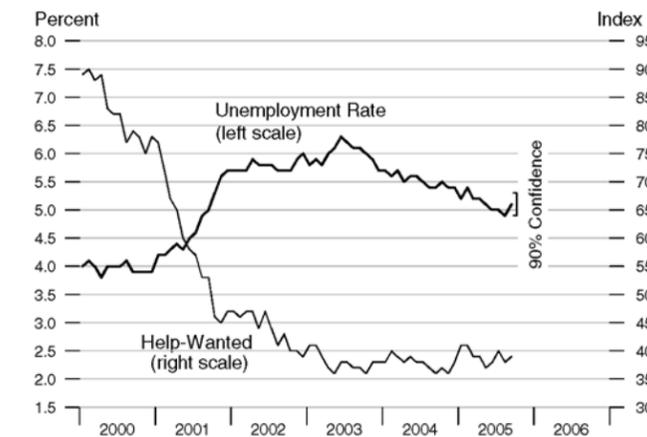
Labor Force and Population



Available Labor Supply and Components

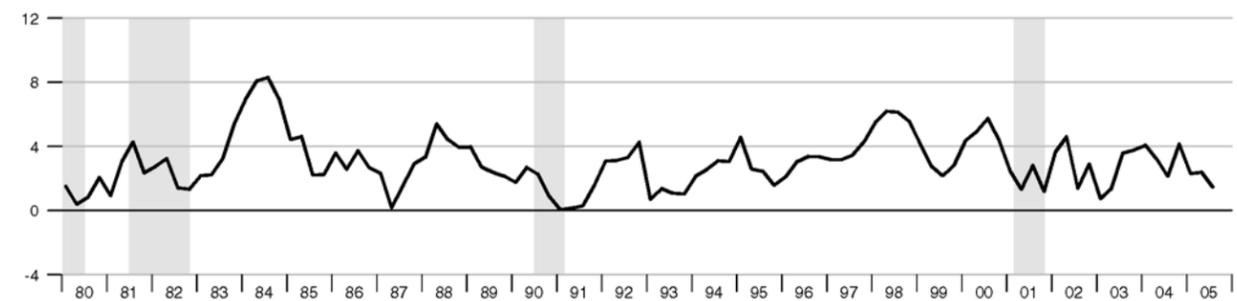


Unemployment Rate & Help-Wanted Index



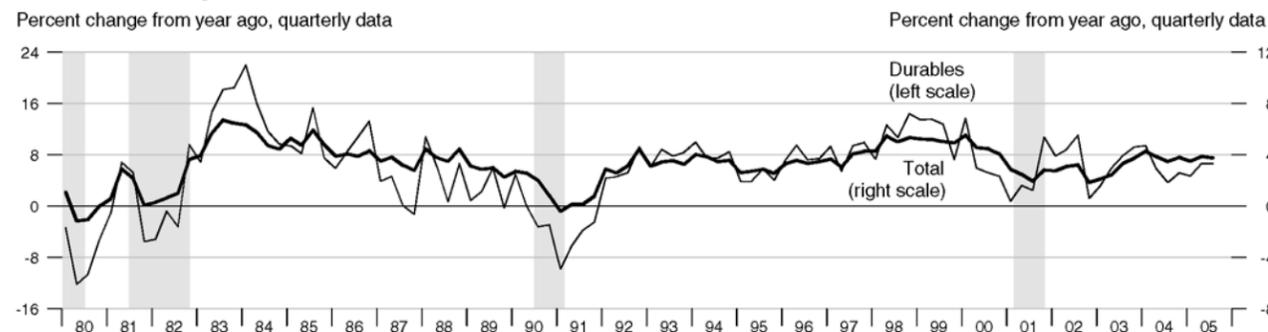
Real Disposable Personal Income

Percent change from year ago, quarterly data



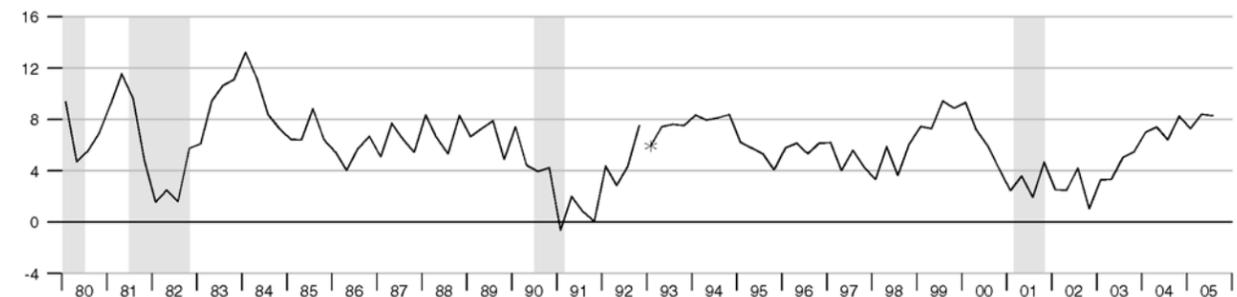
Real Consumption

Percent change from year ago, quarterly data



Retail and Food Services Sales

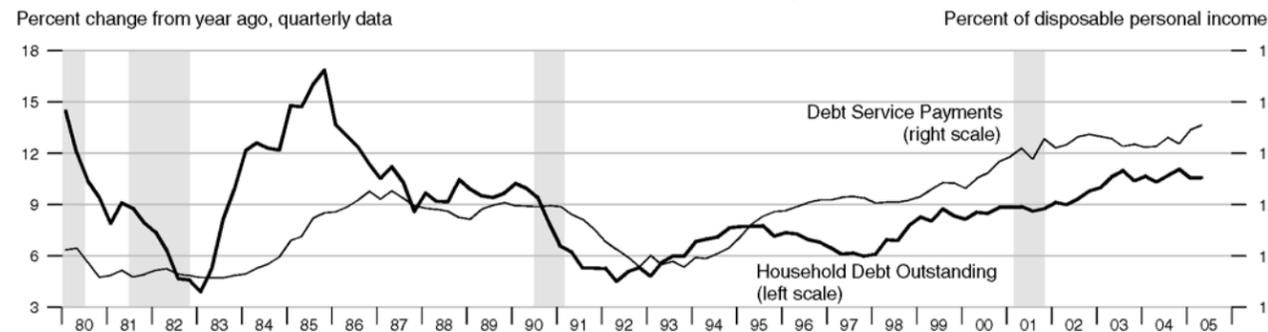
Percent change from year ago, quarterly average



*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).

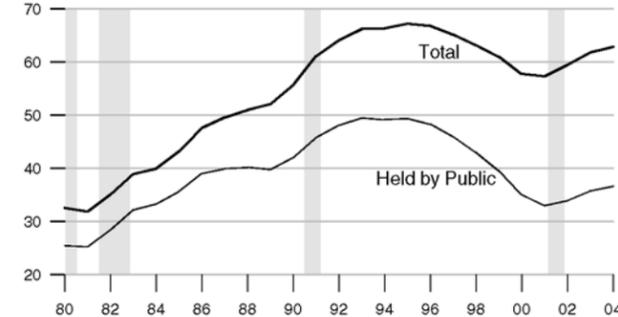
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data



Federal Debt

Percent of GDP



Change in Federal Debt

Percent of GDP



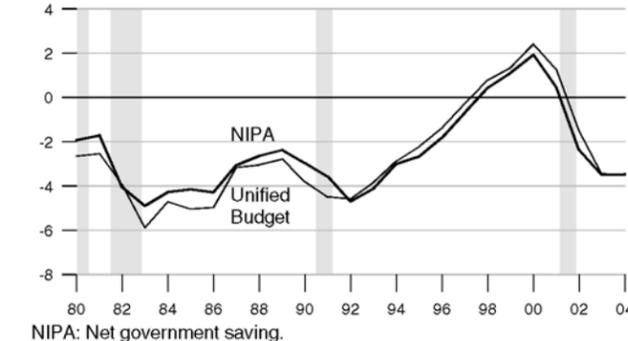
Federal Government Debt

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	3923.9	656.1	3268.0	1458.5
2004		7379.1	3075.7	4303.4	700.3	3607.0	1836.6
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	1285.9
	June	6670.1	2853.8	3816.3	652.1	3164.7	1382.8
	September	6783.2	2859.3	3923.9	656.1	3268.0	1458.5
	December	6998.0	2954.5	4044.1	666.7	3377.9	1537.6
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	1777.5
	September	7379.1	3075.7	4303.4	700.3	3607.0	1836.6
	December	7596.1	3189.8	4406.4	717.8	3667.1	1890.7
2005	March	7776.9	3204.5	4572.4	717.3	3855.4	1982.2
	June	7836.5	3308.9	4527.6	724.7	3803.0	2030.0

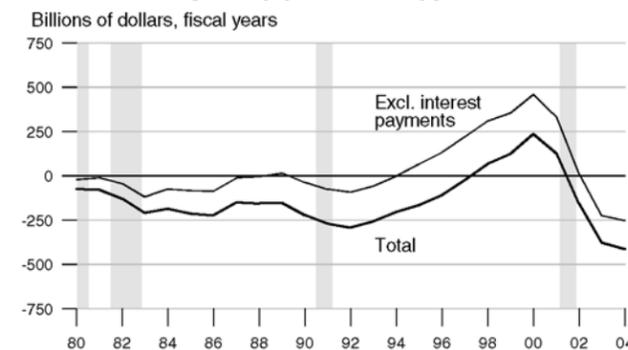
Federal Surplus (+) / Deficit (-)

Percent of GDP

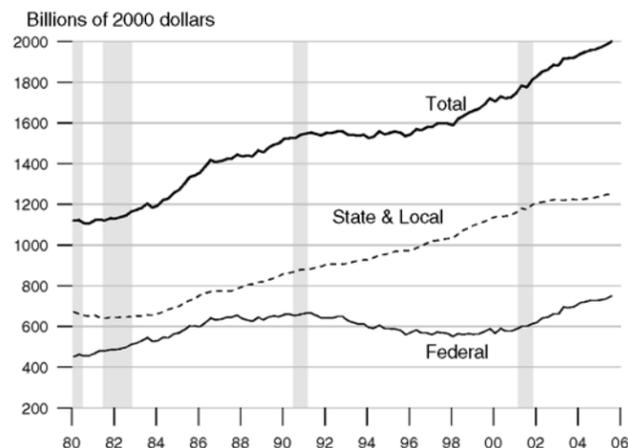


Federal Surplus (+) / Deficit (-), Unified Basis

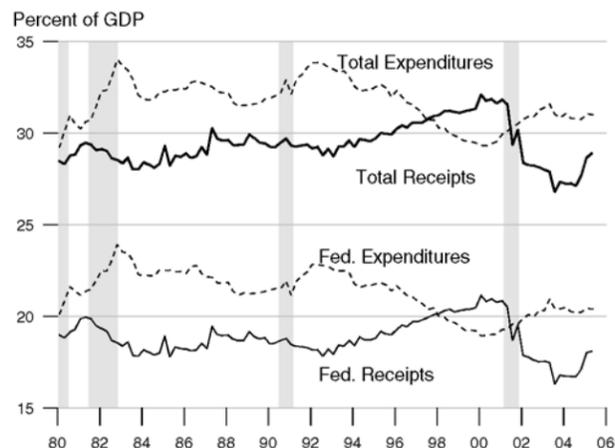
Billions of dollars, fiscal years



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures

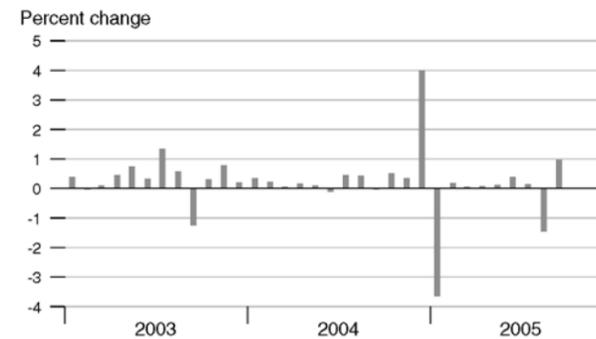


Government Budgets

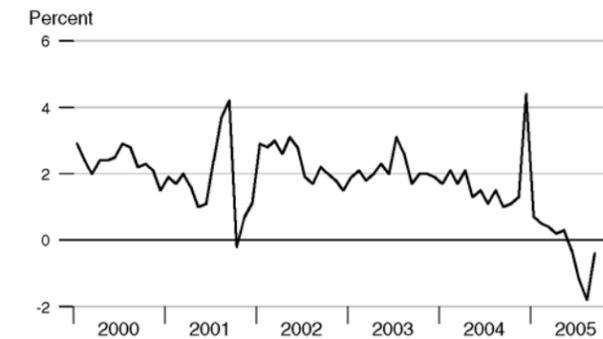
Billions of dollars

	National Income Accounts 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	1410.1	1444.3	-34.2	1853.2	2101.1	-247.9
2003	1488.6	1512.4	-23.8	1868.6	2251.4	-382.8
2004	1581.7	1587.5	-5.8	1974.8	2381.3	-406.5
2003Q3	1507.6	1521.4	-13.8	1808.9	2265.1	-456.2
2003Q4	1539.0	1526.5	12.5	1887.9	2292.9	-405.0
2004Q1	1546.8	1553.2	-6.4	1917.8	2347.2	-429.4
2004Q2	1579.7	1581.3	-1.6	1951.4	2364.9	-413.5
2004Q3	1574.5	1593.8	-19.3	1975.4	2387.0	-411.6
2004Q4	1625.7	1621.7	4.0	2054.6	2426.2	-371.6
2005Q1	1656.7	1649.4	7.3	2196.6	2494.9	-298.3
2005Q2	1694.9	1673.7	21.2	2239.7	2525.2	-285.5
2005Q3		1687.8			2563.3	

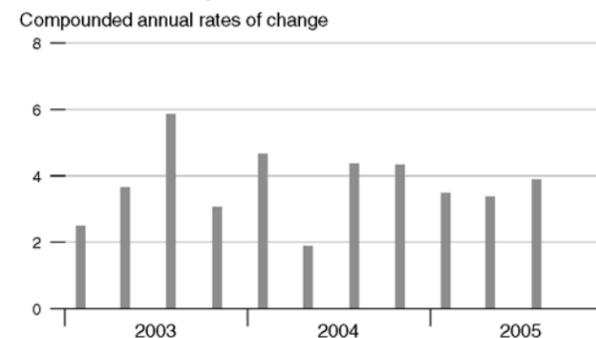
Real Disposable Personal Income



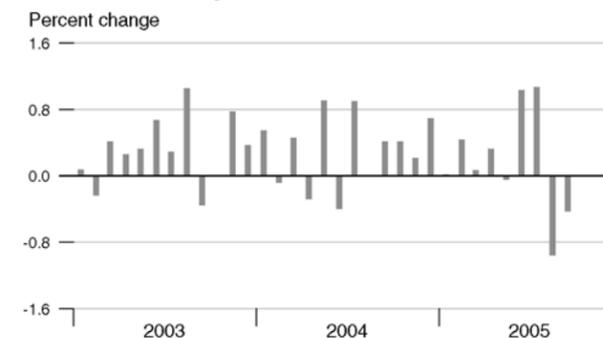
Personal Saving Rate



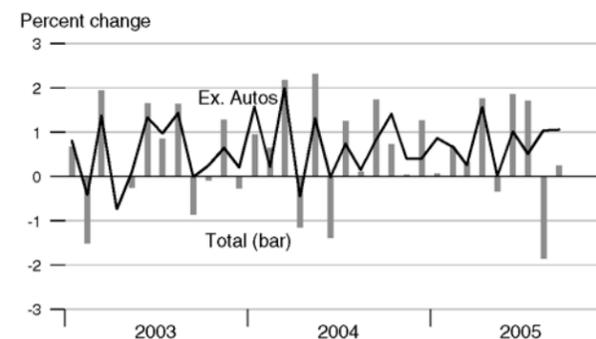
Real Consumption



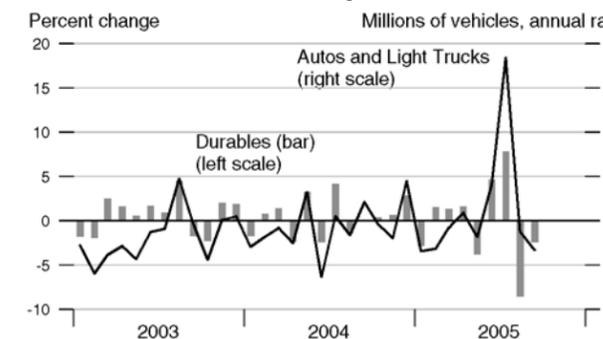
Real Consumption



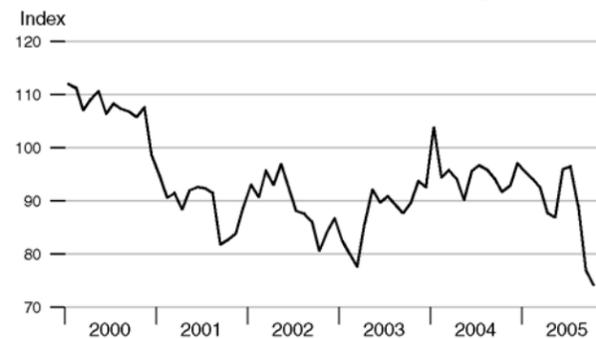
Retail & Food Services



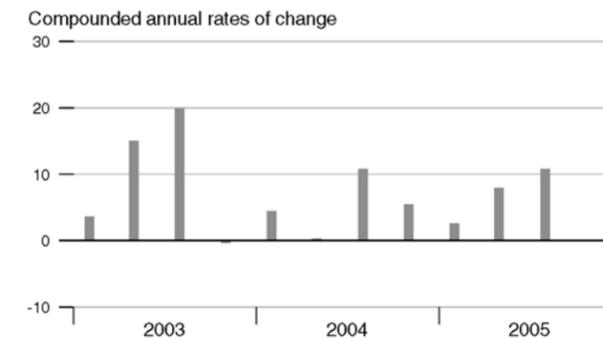
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

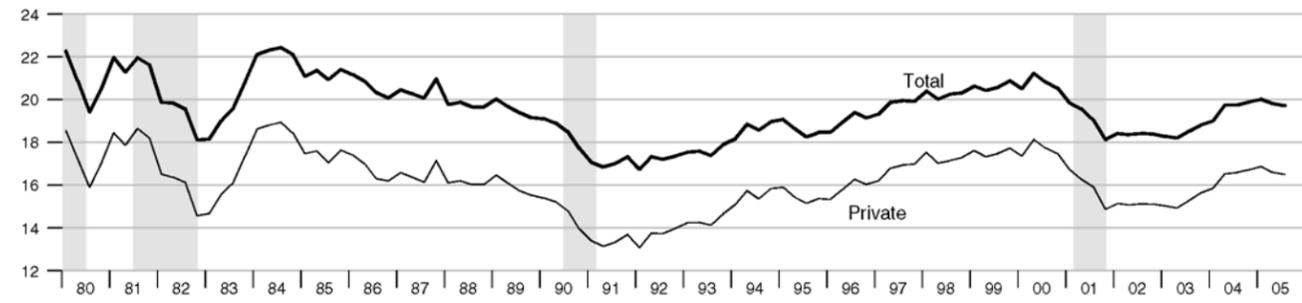


Real Durables Consumption



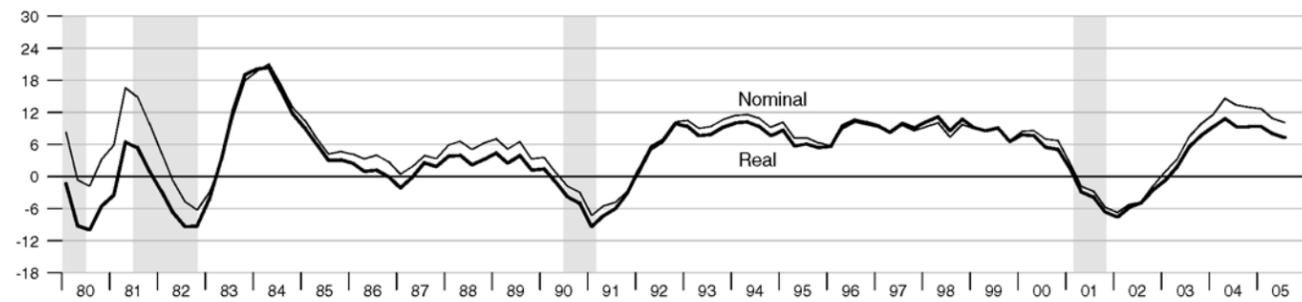
Investment

Percent of nominal GDP



Private Fixed Investment

Percent change from year ago



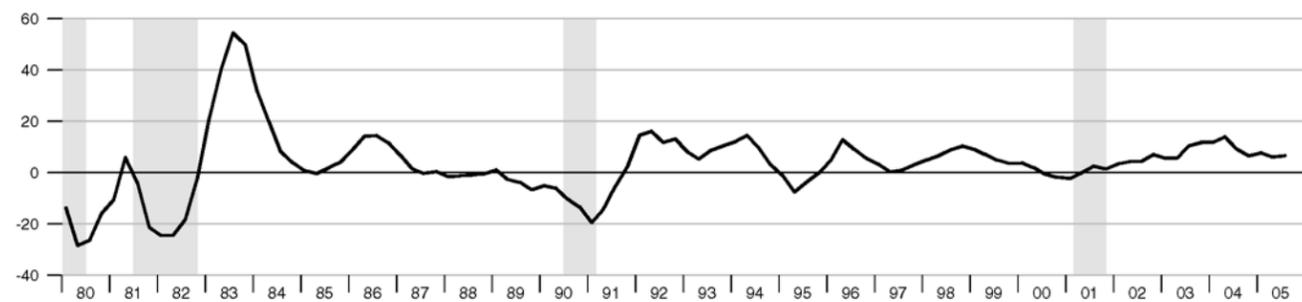
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago



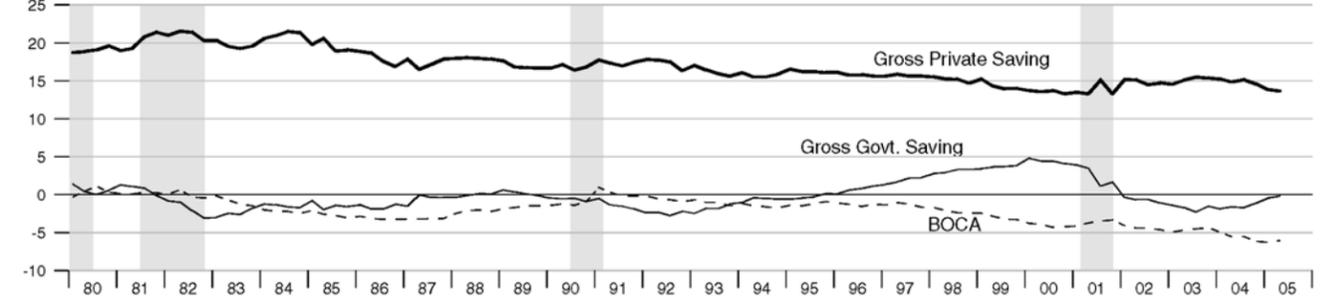
Real Residential Fixed Investment

Percent change from year ago



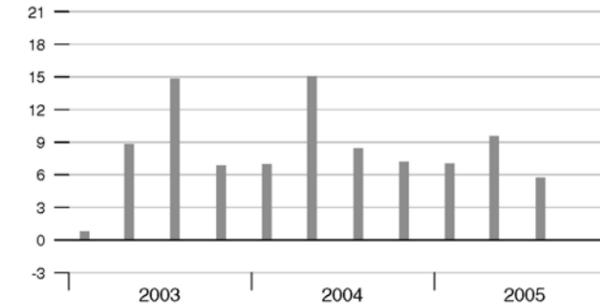
Gross Saving Rates and Balance on Current Account (NIPA)

Percent of GDP



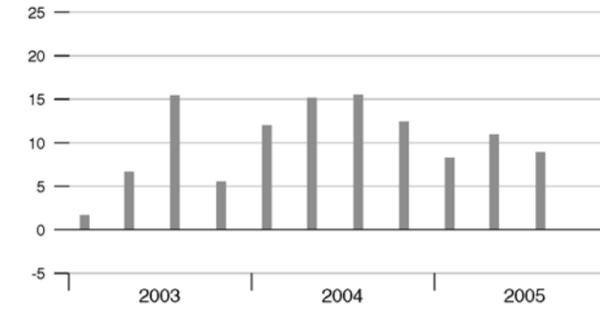
Real Private Fixed Investment

Compounded annual rates of change



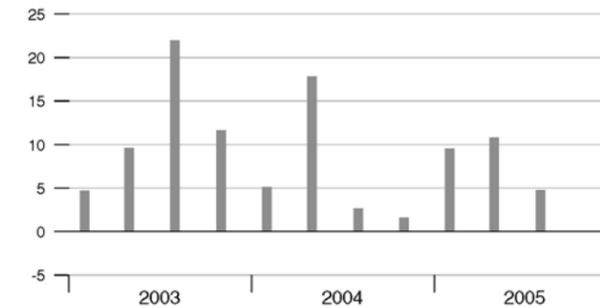
Real Equipment & Software Investment

Compounded annual rates of change



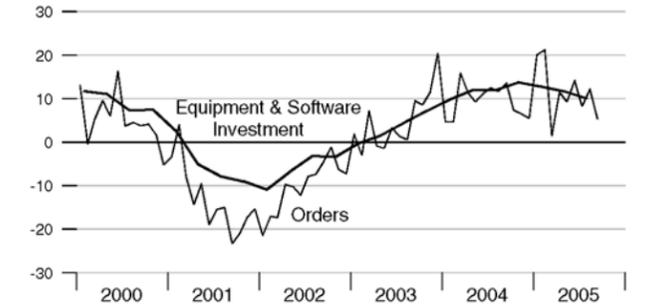
Real Residential Fixed Investment

Compounded annual rates of change



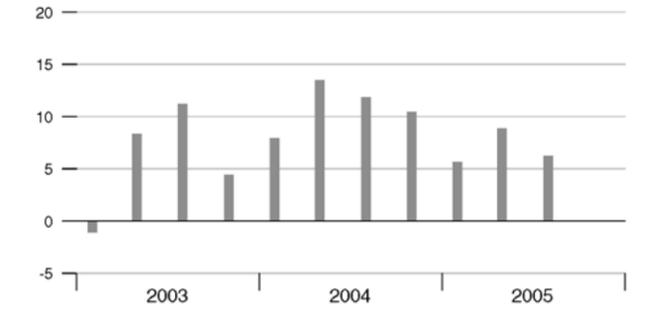
Nondefense Capital Goods Orders

Percent change from year ago, excluding aircraft



Real Nonresidential Fixed Investment

Compounded annual rates of change



Housing Starts and New Home Sales

Millions, annual rate (left scale) / Millions, annual rate (right scale)

