

## The Long-Run Benefits of Sustained Low Inflation

**P**olicymakers at the Federal Reserve wage preemptive wars against inflation; that is, they tend to tighten monetary policy during economic expansions before incoming data confirm an increased rate of inflation. Today, many market analysts believe the Federal Open Market Committee is nearing the end of its most recent preemptive strike. Hence, it seems worthwhile to review the benefits that flow from sustained low inflation.

A common theme among Fed officials is that price stability—typically defined as an inflation rate that is sufficiently low, stable, and predictable so as not to be a factor in decisionmaking—is a prerequisite for attaining maximum sustainable economic growth. In his closing remarks at the August 2005 Federal Reserve Bank of Kansas City policy conference, Chairman Greenspan said, “I presume maximum sustainable economic growth will continue to be our goal, with price stability pursued as a necessary condition to promote that goal.” Incoming Fed Chairman Bernanke (2005) has written: “[T]he low-inflation era of the past two decades has seen not only significant improvements in economic growth and productivity but also a marked reduction in economic volatility, both in the United States and abroad, a phenomenon that has been dubbed ‘the Great Moderation’...[A]s I have argued elsewhere, there is evidence for the view that improved control of inflation has contributed in important measure to this welcome change in the economy.”

Typically, policymakers’ desired long-run inflation rate is a slow increase in a broad index of consumer prices, excluding food and energy. In part, the non-zero rate reflects an assumed measurement bias due to imperfect adjustment for quality change and the introduction of new goods; in part, the rate also embeds a cushion against the risk that an adverse shock might corner policymakers against the zero lower bound on nominal interest rates.

The costs of sustained inflation at such a low rate primarily are of two types. First, “monetary costs” arise as inflation reduces the real return on money, inducing firms and households to needlessly incur additional costs to more closely manage their monetary assets. Inflation also muddies price signals by increasing the difficulty of distinguishing temporary changes in goods’ prices from permanent changes. Higher inflation also tends to attract real resources, including new college graduates, into professions such as law and financial services that benefit by creating hedges and shelters against inflation.

In empirical studies, however, the estimated costs of moderate inflation (versus an inflation rate low enough to be equated to

price stability) are small, often less than three-hundredths of 1 percentage point of annual GDP growth; see the papers by Bruno and Easterly (1996) and Barro (1996). But this opinion is not universally held. Dotsey and Ireland (1996) present a model in which the combined impact of several effects, each individually small, is large. Second, and perhaps more significant, are distortions due to the nominal nature of the U.S. tax system. Studies in Feldstein (1999) and by Bullard and Russell (2004) suggest that the level of real output is lower by approximately one-half to 1 percent for each 1 percentage point that the inflation rate is above that associated with price stability. Yet, cross-country empirical studies suggest little, if any, effect on output when inflation is less than 15 to 40 percent per year.

In short: Measures of the trade-off between sustained inflation and long-run economic growth remain extremely uncertain, as evidenced in the recent conference volume by the Bank of Japan (2004). Yet, almost uniformly, central bankers argue that sustained low inflation, at a rate no greater than that defined as price stability plus a small cushion to avoid the zero lower bound on nominal interest rates, is a prerequisite to realizing an economy’s maximum long-run economic growth. Fortunately, recent surveys of inflation expectations in the United States suggest that the public is confident the Federal Reserve will sustain such an environment of low, stable inflation.

—Richard G. Anderson

A longer essay on this topic is available on the author’s web page at [http://research.stlouisfed.org/econ/anderson/Essay\\_CostsOfInflation.pdf](http://research.stlouisfed.org/econ/anderson/Essay_CostsOfInflation.pdf).

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Bruno, Michael and Easterly, William. “Inflation and Growth: In Search of a Stable Relationship.” *Federal Reserve Bank of St. Louis Review*, May/June 1996, 78(3), pp. 139-46.

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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 ( $\pm 0.2$  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/](http://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.

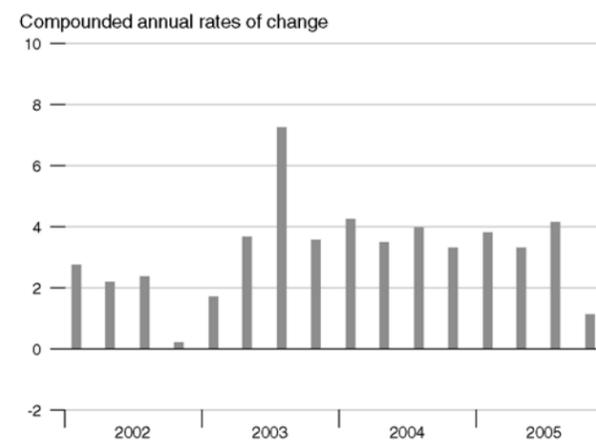
*The Survey Research Center, The University of Michigan*  
 Consumer sentiment index.

*The Conference Board*  
 Help-wanted advertising index.

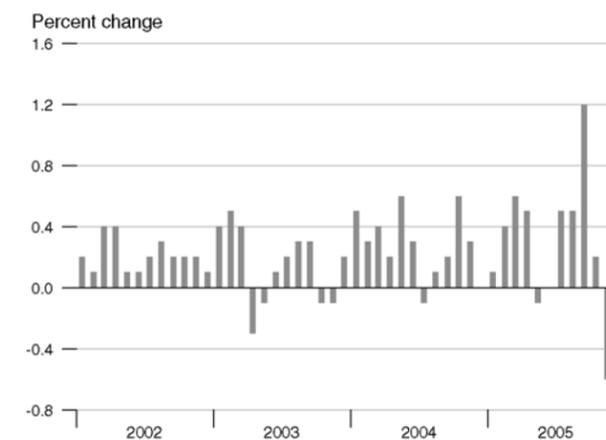
*Organization for Economic Cooperation and Development (OECD)*  
 GDP for major trading partners (not available on FRED).

	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	
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	
2005	195.3			3.4		200.9			2.2		155.8			4.9	
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	3.3	4.0
	3	196.6	1.3	5.1	3.8	3.9	201.2	0.4	1.5	2.1	2.0	156.8	1.8	7.6	5.5
	4	198.1	0.8	3.2	3.7	3.7	202.4	0.6	2.3	2.1	2.1	159.7	1.9	7.8	5.3
2003	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	153.7	0.0	0.0	3.7
	Jul	195.1	0.5	6.4	3.1	3.5	201.0	0.1	1.8	2.1	2.2	155.2	1.0	12.4	4.7
	Aug	196.1	0.5	6.3	3.6	3.9	201.2	0.1	1.2	2.2	2.0	156.2	0.6	8.0	5.2
	Sep	198.5	1.2	15.7	4.7	5.1	201.4	0.1	1.2	2.0	2.0	158.9	1.7	22.8	6.7
	Oct	198.9	0.2	2.4	4.3	4.9	201.9	0.2	3.0	2.0	2.1	160.0	0.7	8.6	5.9
	Nov	197.8	-0.6	-6.4	3.5	3.8	202.4	0.2	3.0	2.1	2.1	158.9	-0.7	-7.9	4.5
	Dec	197.7	-0.1	-0.6	3.4	3.4	202.8	0.2	2.4	2.2	2.2	160.3	0.9	11.1	5.7

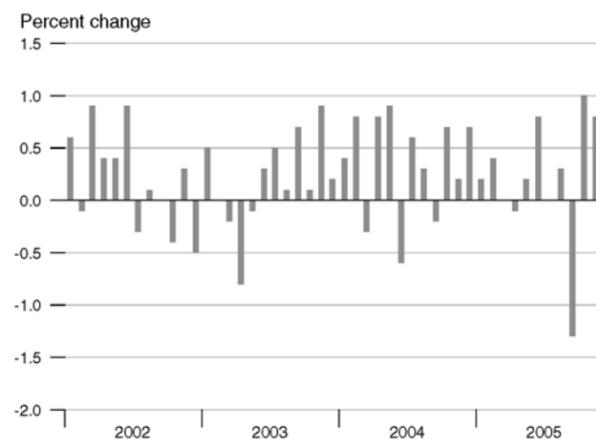
Real GDP Growth



Consumer Price Index



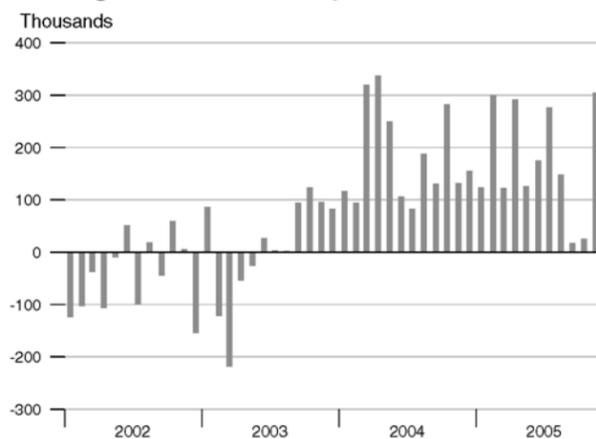
Industrial Production



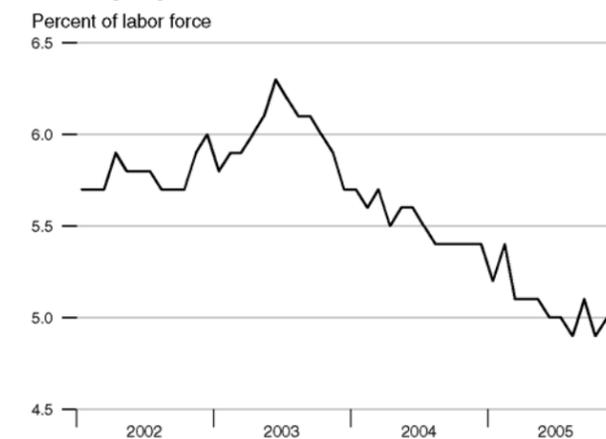
Interest Rates



Change in Nonfarm Payrolls

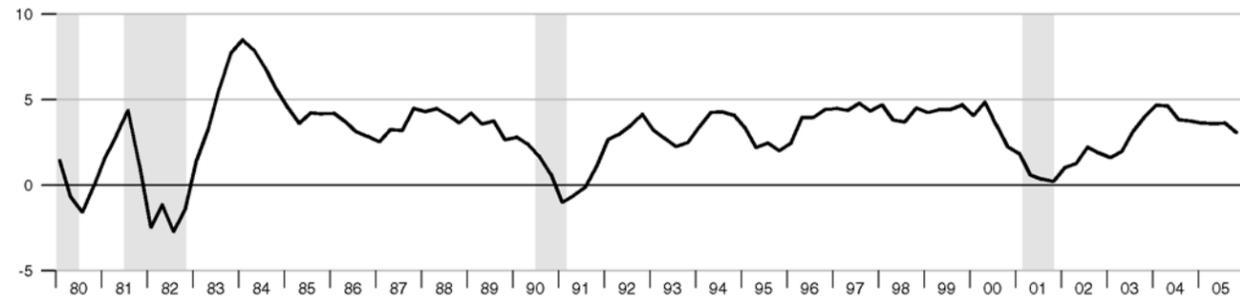


Unemployment Rate



**Real Gross Domestic Product**

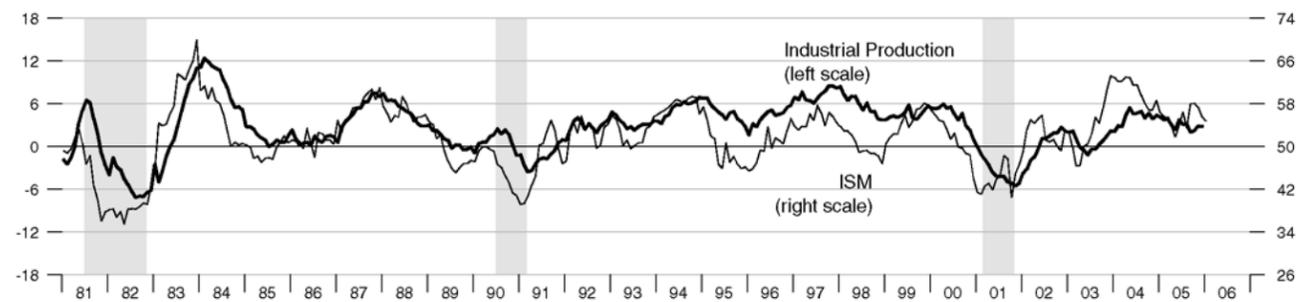
Percent change from year ago



**Industrial Production and Institute for Supply Management (ISM) Indexes**

Percent change from year ago

Index



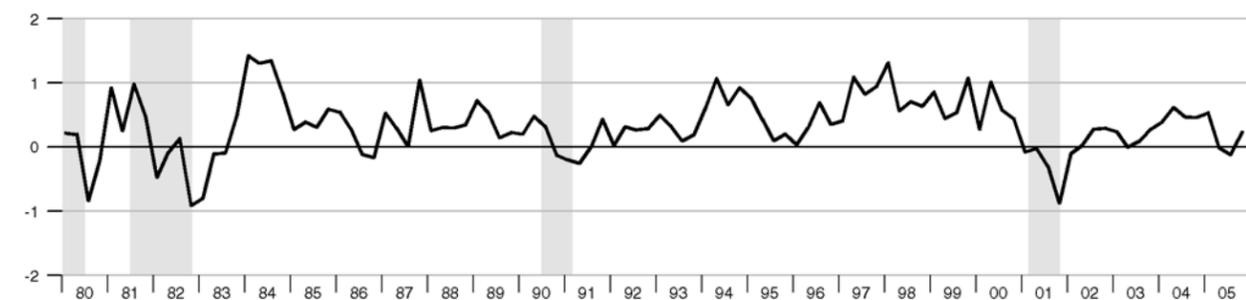
**Aggregate Private Nonfarm Hours**

Percent change from year ago



**Real Change in Private Inventories**

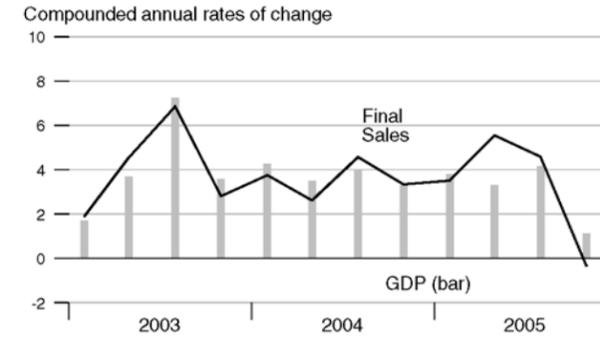
Percent of GDP



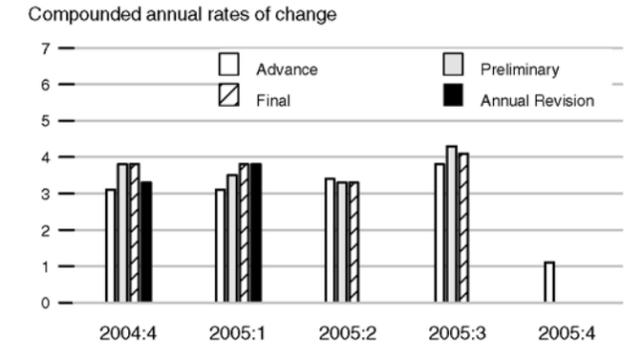
	Unempl. Rate	Retail and Food Services Sales			Industrial Production			Treasury Yields			
		Billions of dollars	Percent change		Index	Percent change		(Percent)			
			Monthly/quarterly	Annual rate	Year ago		Monthly/quarterly	Annual rate	Year ago	3-mo	10-yr
2001	4.7	3388.094			3.2	99.878			-3.5	3.39	5.02
2002	5.8	3474.391			2.5	100.000			0.1	1.60	4.61
2003	6.0	3623.849			4.3	100.624			0.6	1.01	4.02
2004	5.5	3888.501			7.3	104.725			4.1	1.37	4.27
2005	5.1	4183.783			7.6	107.970			3.1	3.15	4.29
2003	1	884.854	0.9	3.8	3.3	100.493	0.2	0.8	1.7	1.16	3.92
	2	895.092	1.2	4.7	3.3	99.653	-0.8	-3.3	-0.6	1.04	3.62
	3	919.020	2.7	11.1	5.0	100.548	0.9	3.6	-0.1	0.93	4.23
	4	924.883	0.6	2.6	5.5	101.804	1.2	5.1	1.5	0.92	4.29
2004	1	946.761	2.4	9.8	7.0	103.129	1.3	5.3	2.6	0.92	4.02
	2	961.468	1.6	6.4	7.4	104.446	1.3	5.2	4.8	1.08	4.60
	3	978.062	1.7	7.1	6.4	105.125	0.7	2.6	4.6	1.49	4.30
	4	1002.210	2.5	10.2	8.4	106.200	1.0	4.2	4.3	2.01	4.17
2005	1	1015.851	1.4	5.6	7.3	107.207	0.9	3.8	4.0	2.54	4.30
	2	1042.334	2.6	10.8	8.4	107.636	0.4	1.6	3.1	2.86	4.16
	3	1059.829	1.7	6.9	8.4	108.007	0.3	1.4	2.7	3.36	4.21
	4	1065.769	0.6	2.3	6.3	109.029	0.9	3.8	2.7	3.83	4.49
2004	Jan	311.973	0.9	12.0	5.4	102.679	0.4	5.1	2.1	0.88	4.15
	Feb	313.973	0.6	8.0	7.7	103.498	0.8	10.0	2.9	0.93	4.08
	Mar	320.815	2.2	29.5	7.9	103.211	-0.3	-3.3	2.8	0.94	3.83
	Apr	317.103	-1.2	-13.0	6.7	104.004	0.8	9.6	4.4	0.94	4.35
	May	324.439	2.3	31.6	9.4	104.956	0.9	11.6	5.4	1.02	4.72
	Jun	319.926	-1.4	-15.5	6.2	104.377	-0.6	-6.4	4.6	1.27	4.73
	Jul	323.929	1.3	16.1	6.6	104.995	0.6	7.3	4.7	1.33	4.50
	Aug	324.257	0.1	1.2	5.0	105.317	0.3	3.7	4.9	1.48	4.28
	Sep	329.876	1.7	22.9	7.7	105.062	-0.2	-2.9	4.0	1.65	4.13
	Oct	332.904	0.9	11.6	8.8	105.823	0.7	9.0	4.7	1.76	4.10
	Nov	332.874	-0.0	-0.1	7.4	106.035	0.2	2.4	3.9	2.07	4.19
	Dec	336.432	1.1	13.6	8.9	106.743	0.7	8.3	4.4	2.19	4.23
2005	Jan	336.785	0.1	1.3	8.0	106.948	0.2	2.3	4.2	2.33	4.22
	Feb	338.991	0.7	8.1	8.0	107.361	0.4	4.7	3.7	2.54	4.17
	Mar	340.075	0.3	3.9	6.0	107.312	-0.0	-0.5	4.0	2.74	4.50
	Apr	346.081	1.8	23.4	9.1	107.184	-0.1	-1.4	3.1	2.78	4.34
	May	344.933	-0.3	-3.9	6.3	107.434	0.2	2.8	2.4	2.84	4.14
	Jun	351.320	1.9	24.6	9.8	108.290	0.8	10.0	3.7	2.97	4.00
	Jul	357.285	1.7	22.4	10.3	108.273	-0.0	-0.2	3.1	3.22	4.18
	Aug	350.742	-1.8	-19.9	8.2	108.587	0.3	3.5	3.1	3.44	4.26
	Sep	351.802	0.3	3.7	6.6	107.160	-1.3	-14.7	2.0	3.42	4.20
	Oct	352.541	0.2	2.6	5.9	108.237	1.0	12.7	2.3	3.71	4.46
	Nov	355.387	0.8	10.1	6.8	109.089	0.8	9.9	2.9	3.88	4.54
	Dec	357.841	0.7	8.6	6.4	109.762	0.6	7.7	2.8	3.89	4.47
2006	Jan									4.24	4.42

	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
2001	136939	39		0.0	131833	41		0.0	102.1			-1.4
2002	136480	-459		-0.3	130345	-1487		-1.1	100.0			-2.0
2003	137731	1251		0.9	129999	-347		-0.3	98.6			-1.4
2004	139244	1513		1.1	131475	1476		1.1	100.3			1.7
2005	141719	2475		1.8	133627	2152		1.6	102.6			2.4
2003	1	137452	813	2.4	130093	-169	-0.5	-0.3	99.0	-0.4	-1.7	-1.3
	2	137656	204	0.6	129845	-248	-0.8	-0.4	98.3	-0.8	-3.1	-2.0
	3	137535	-121	-0.4	129890	45	0.1	-0.3	98.3	0.1	0.3	-1.5
	4	138280	745	2.2	130168	278	0.9	-0.1	98.8	0.5	2.0	-0.6
2004	1	138473	193	0.6	130541	374	1.2	0.3	99.3	0.5	2.0	0.3
	2	138894	421	1.2	131325	784	2.4	1.1	100.0	0.6	2.6	1.7
	3	139548	654	1.9	131731	406	1.2	1.4	100.6	0.6	2.4	2.3
	4	140059	511	1.5	132302	571	1.7	1.6	101.2	0.6	2.4	2.4
2005	1	140373	314	0.9	132814	512	1.6	1.7	101.7	0.6	2.3	2.4
	2	141506	1132	3.3	133429	616	1.9	1.6	102.4	0.7	2.8	2.5
	3	142324	818	2.3	133969	540	1.6	1.7	103.0	0.5	2.1	2.4
	4	142672	348	1.0	134294	325	1.0	1.5	103.4	0.5	1.8	2.2
2003	Dec	138400	-53	-0.5	130255	83	0.8	0.1	98.6	-0.5	-5.9	-0.7
2004	Jan	138472	72	0.6	130372	117	1.1	0.1	99.3	0.7	8.9	0.0
	Feb	138495	23	0.2	130466	94	0.9	0.3	99.4	0.1	1.2	0.5
	Mar	138452	-43	-0.4	130786	320	3.0	0.7	99.3	-0.1	-1.2	0.4
	Apr	138659	207	1.8	131123	337	3.1	1.0	99.7	0.4	4.9	1.4
	May	138843	184	1.6	131373	250	2.3	1.2	100.3	0.6	7.5	2.1
	Jun	139181	338	3.0	131479	106	1.0	1.3	99.9	-0.4	-4.7	1.6
	Jul	139591	410	3.6	131562	83	0.8	1.3	100.3	0.4	4.9	2.0
	Aug	139558	-33	-0.3	131750	188	1.7	1.5	100.5	0.2	2.4	2.2
	Sep	139495	-63	-0.5	131880	130	1.2	1.5	100.9	0.4	4.9	2.5
	Oct	139768	273	2.4	132162	282	2.6	1.6	101.2	0.3	3.6	2.4
	Nov	140276	508	4.4	132294	132	1.2	1.6	101.1	-0.1	-1.2	2.0
	Dec	140133	-143	-1.2	132449	155	1.4	1.7	101.2	0.1	1.2	2.6
2005	Jan	140234	101	0.9	132573	124	1.1	1.7	101.5	0.3	3.6	2.2
	Feb	140285	51	0.4	132873	300	2.7	1.8	101.8	0.3	3.6	2.4
	Mar	140601	316	2.7	132995	122	1.1	1.7	101.9	0.1	1.2	2.6
	Apr	141196	595	5.2	133287	292	2.7	1.7	102.5	0.6	7.3	2.8
	May	141571	375	3.2	133413	126	1.1	1.6	102.3	-0.2	-2.3	2.0
	Jun	141750	179	1.5	133588	175	1.6	1.6	102.5	0.2	2.4	2.6
	Jul	142111	361	3.1	133865	277	2.5	1.8	102.8	0.3	3.6	2.5
	Aug	142425	314	2.7	134013	148	1.3	1.7	102.9	0.1	1.2	2.4
	Sep	142435	10	0.1	134030	17	0.2	1.6	103.2	0.3	3.6	2.3
	Oct	142625	190	1.6	134055	25	0.2	1.4	103.3	0.1	1.2	2.1
	Nov	142611	-14	-0.1	134360	305	2.8	1.6	103.6	0.3	3.5	2.5
	Dec	142779	168	1.4	134468	108	1.0	1.5	103.4	-0.2	-2.3	2.2

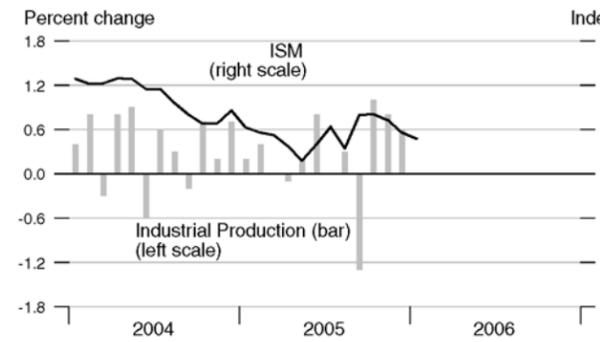
Real Final Sales and GDP



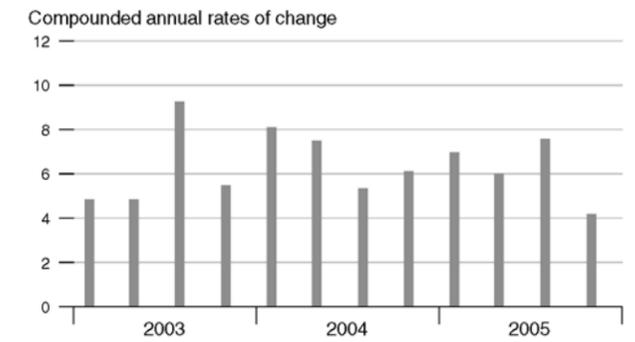
Real GDP Revisions



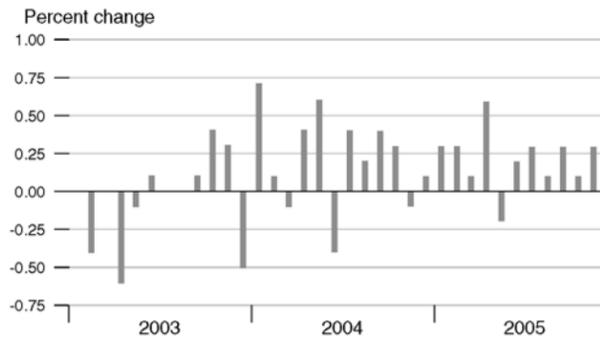
Industrial Production and ISM Index



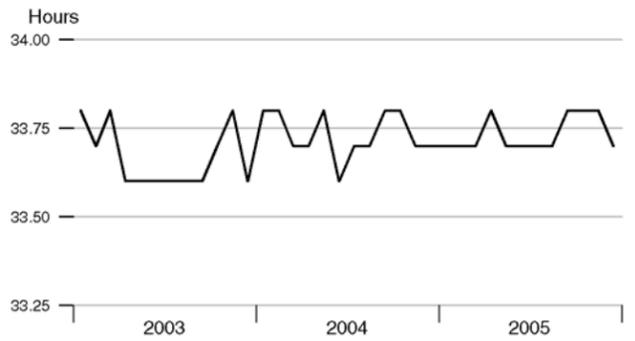
Nominal Gross Domestic Product



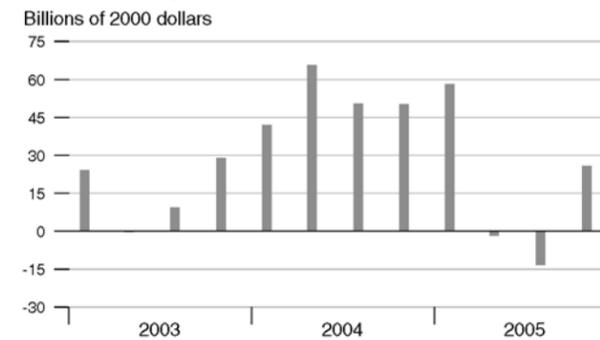
Aggregate Private Nonfarm Hours



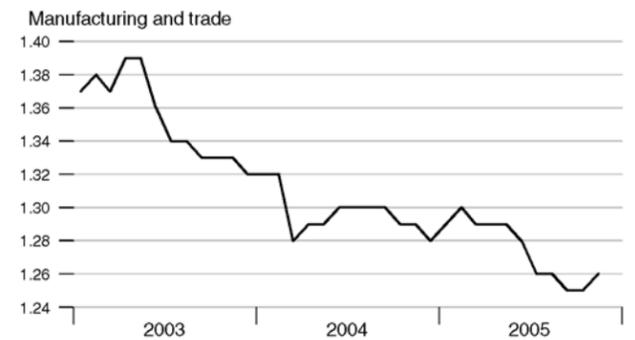
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories



Inventory-Sales Ratio



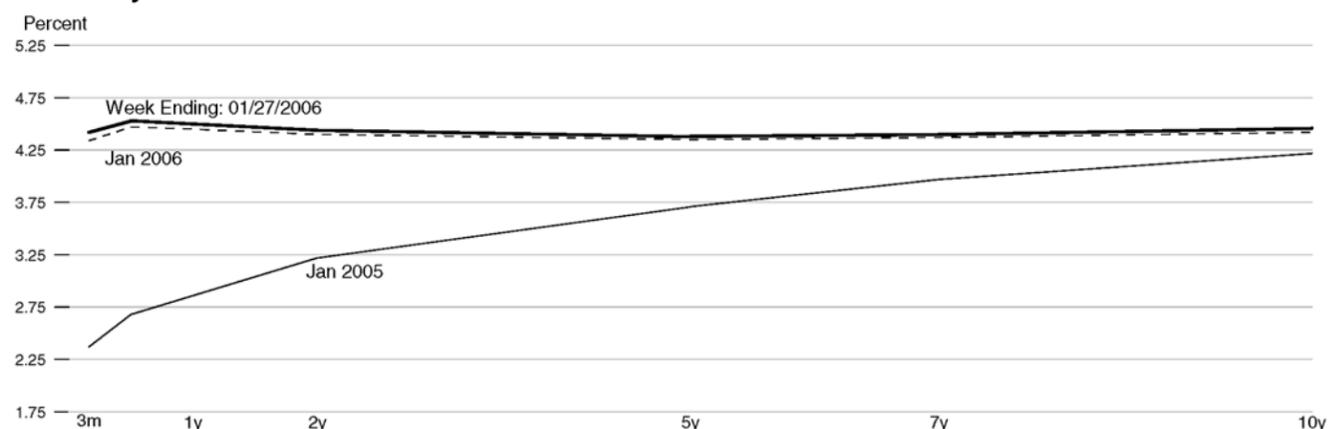


	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories			
	Billions of \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$	Percent change		Billions of 2000 \$			
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago		
2002	10469.6	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			
2005	12479.4	6.3		11131.068	3.5		11112.231	3.8		17.233			
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	12605.7	7.6	6.7	11202.340	4.1	3.6	11214.399	4.6	4.3	-13.291	23.319	
	4	12735.3	4.2	6.2	11233.459	1.1	3.1	11205.029	-0.3	3.3	25.745	17.233	
	Consumption			Durable 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	
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		
2005	7858.132	3.6		1137.667	4.4		1896.055	8.0		1287.637	8.5		
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	7907.851	4.1	3.8	1169.738	9.3	6.3	1921.471	8.0	7.9	1305.198	8.5	8.3
	4	7930.226	1.1	3.0	1114.718	-17.5	-0.0	1935.859	3.0	6.9	1314.192	2.8	6.4

Interest Rates



Treasury Yield Curve

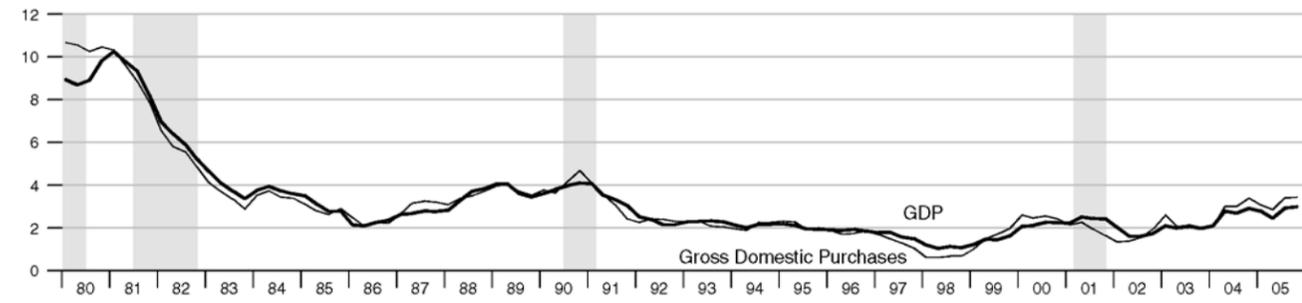


Standard and Poor's 500 Index with Reinvested Dividends



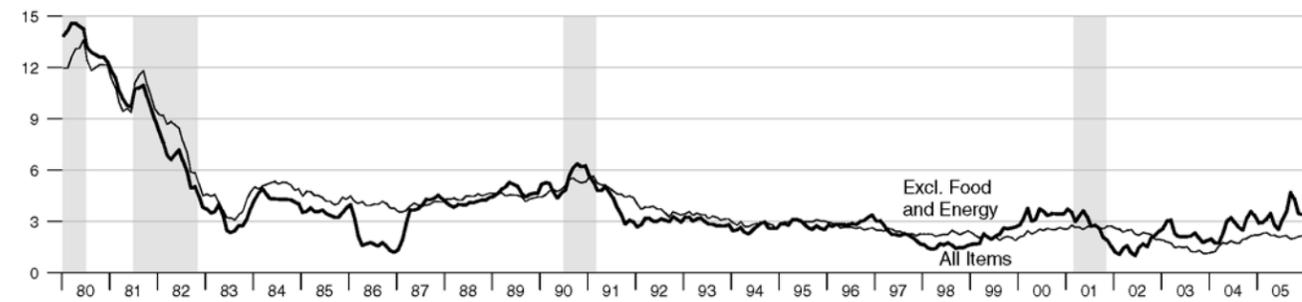
**NIPA Chain Price Indexes**

Percent change from year ago



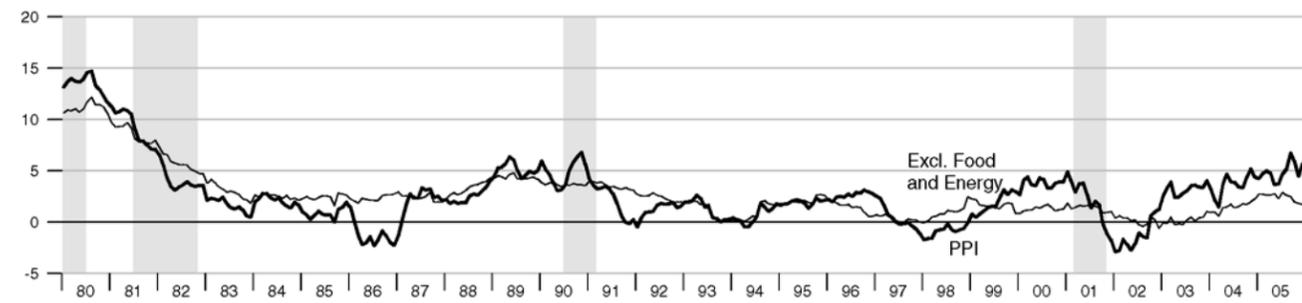
**Consumer Price Index**

Percent change from year ago



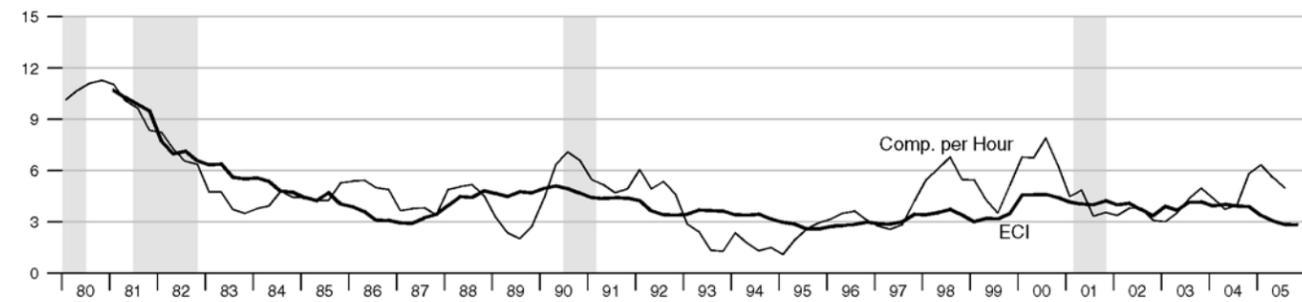
**Producer Price Index, Finished Goods**

Percent change from year ago



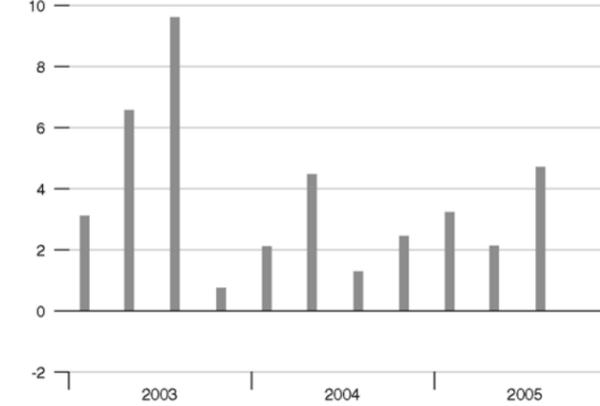
**Employment Cost Index and Compensation per Hour**

Percent change from year ago



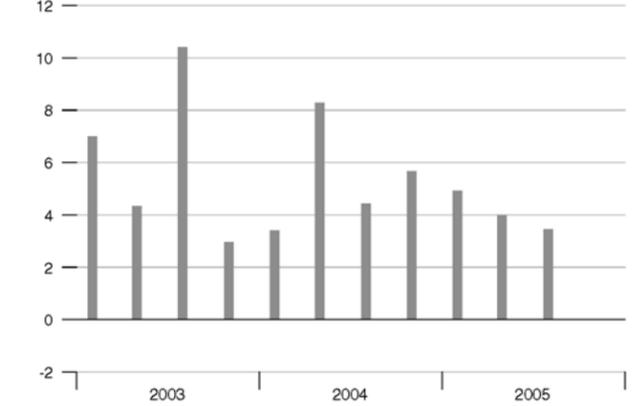
**Nonfarm Output per Hour**

Compounded annual rates of change

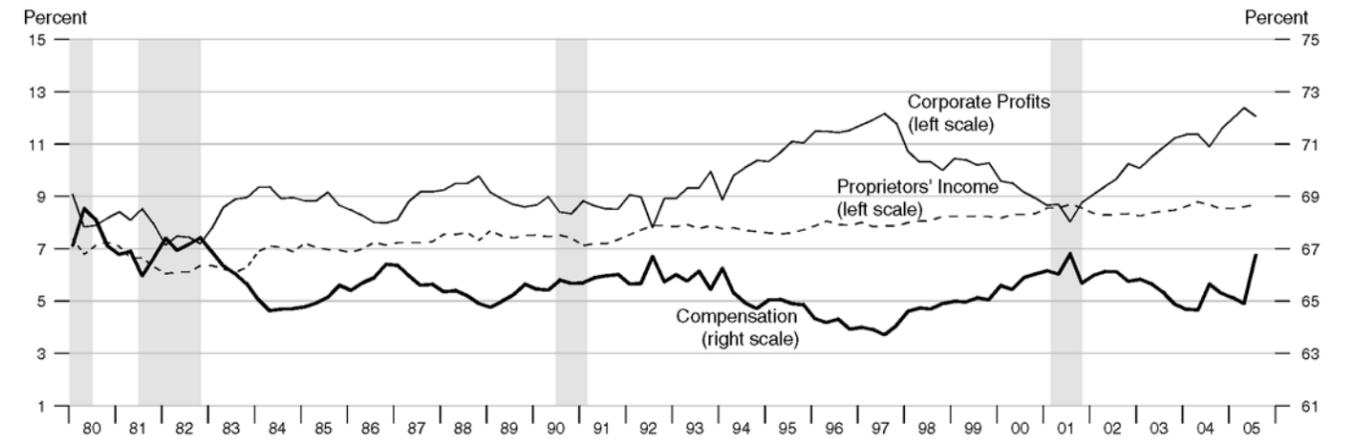


**Manufacturing Output per Hour**

Compounded annual rates of change

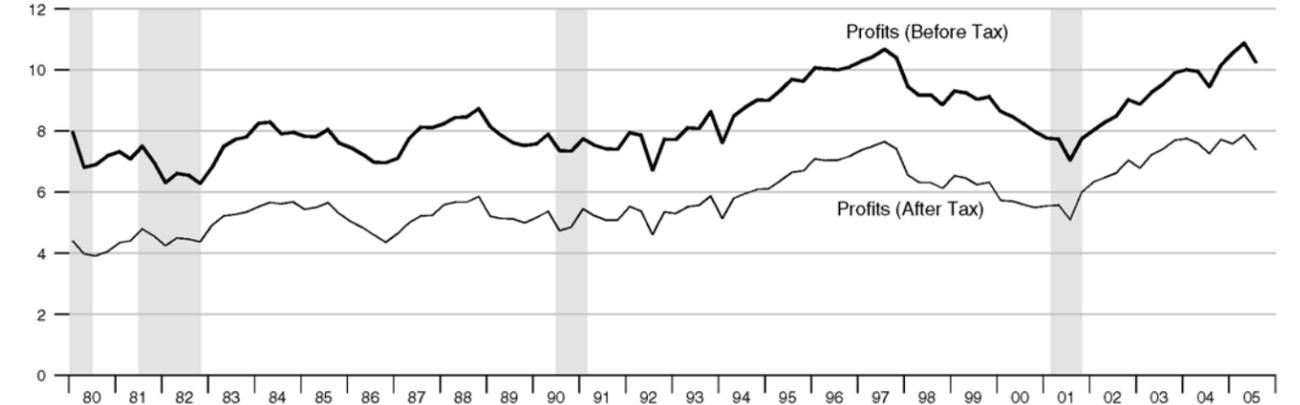


**Selected Component Shares of National Income**

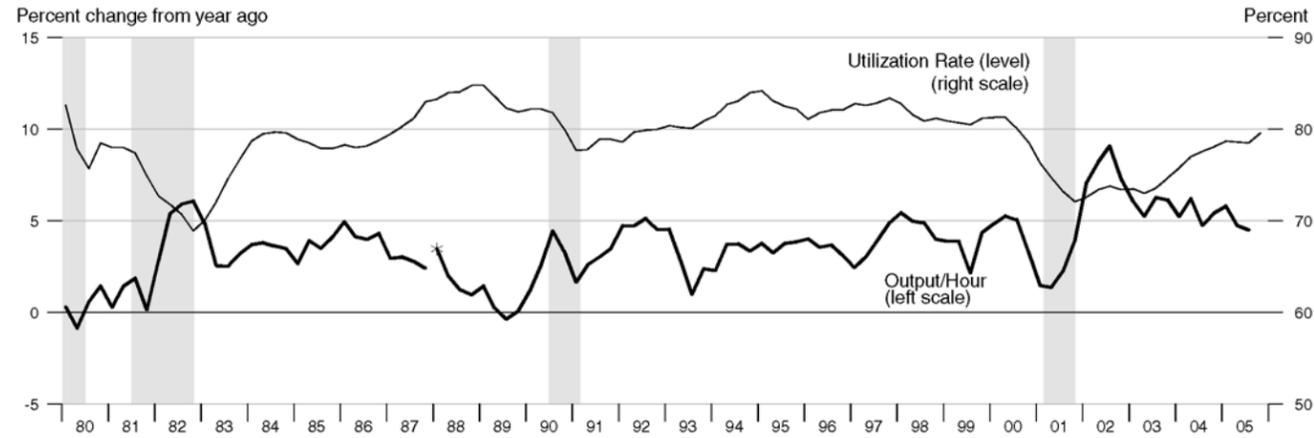


**Corporate Profits**

Percent of GDP

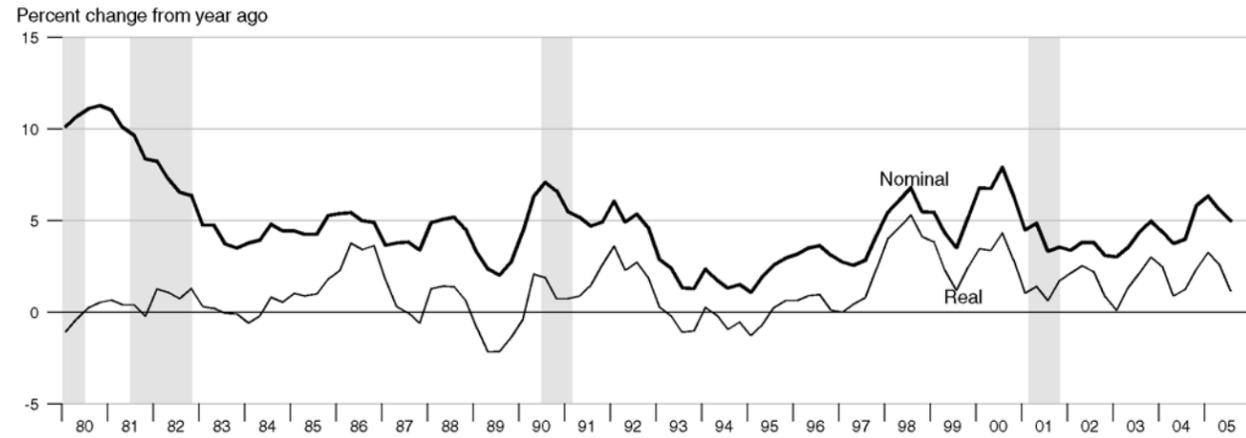


**Output per Hour and Capacity Utilization, Manufacturing**

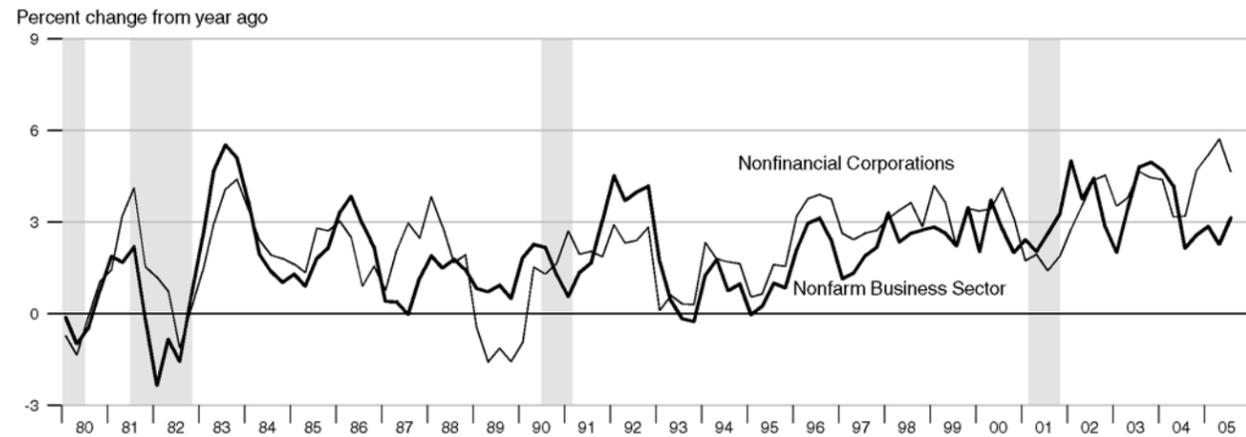


\*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

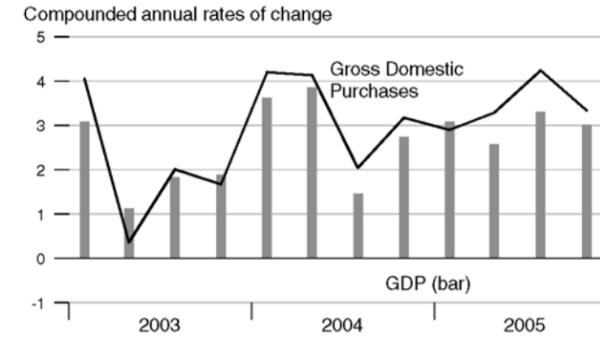
**Nonfarm Compensation per Hour**



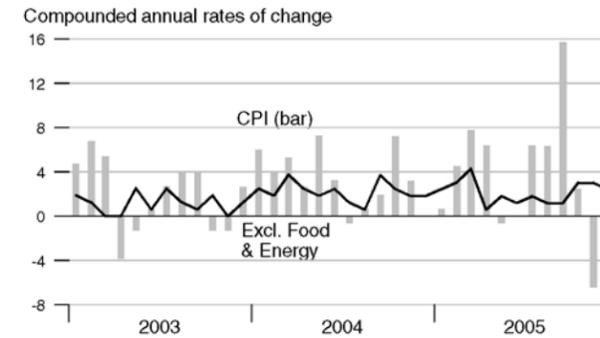
**Output per Hour, Nonfarm Business and Nonfinancial Corporations**



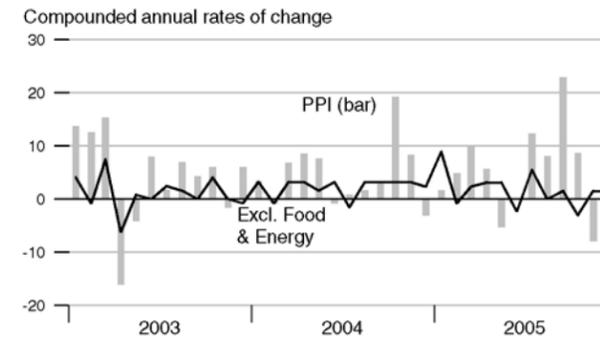
**NIPA Chain Price Indexes**



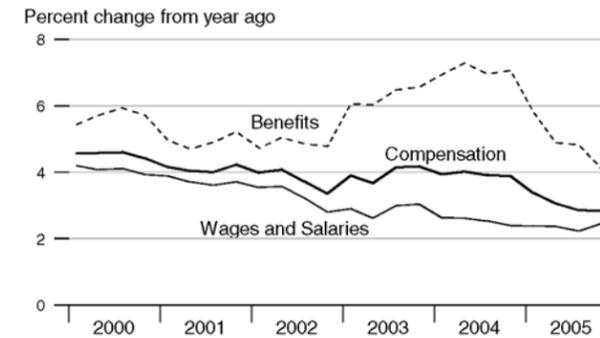
**Consumer Price Index**



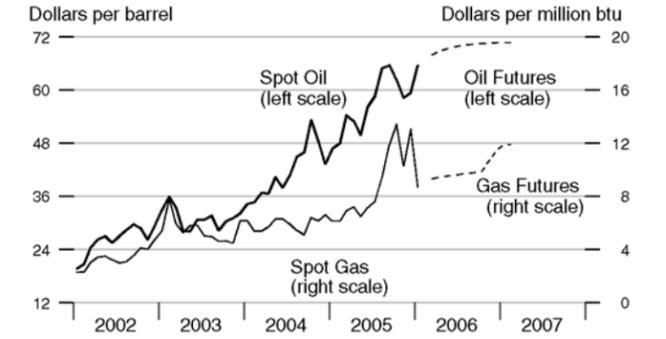
**Producer Price Index, Finished Goods**



**Employment Cost Index**

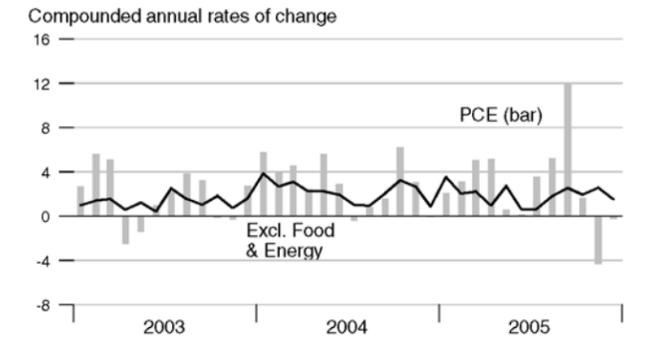


**Oil & Natural Gas Prices: Spot & Futures**

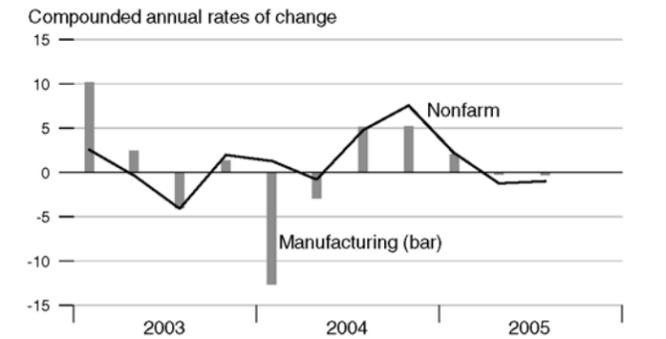


Note: Futures prices as of 01/31/2006.

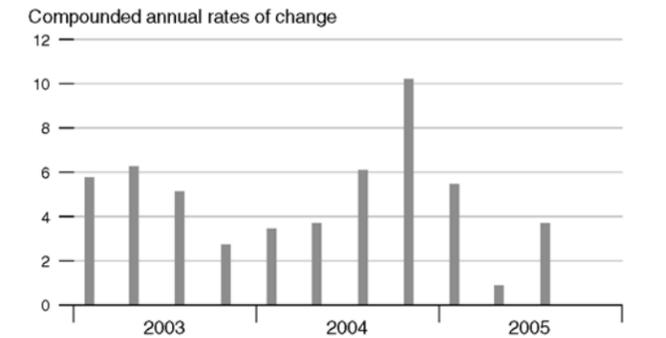
**Consumption Chain Price Index**



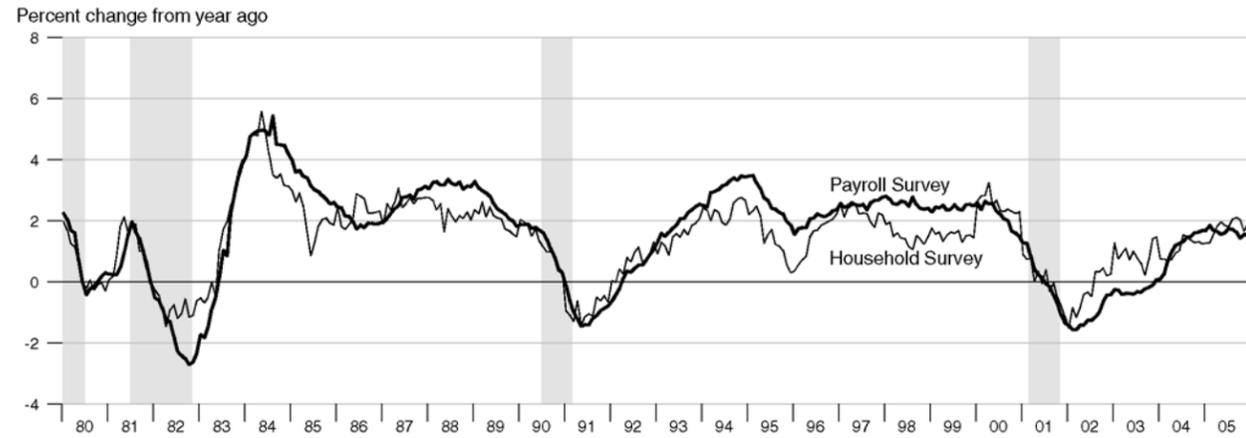
**Unit Labor Cost**



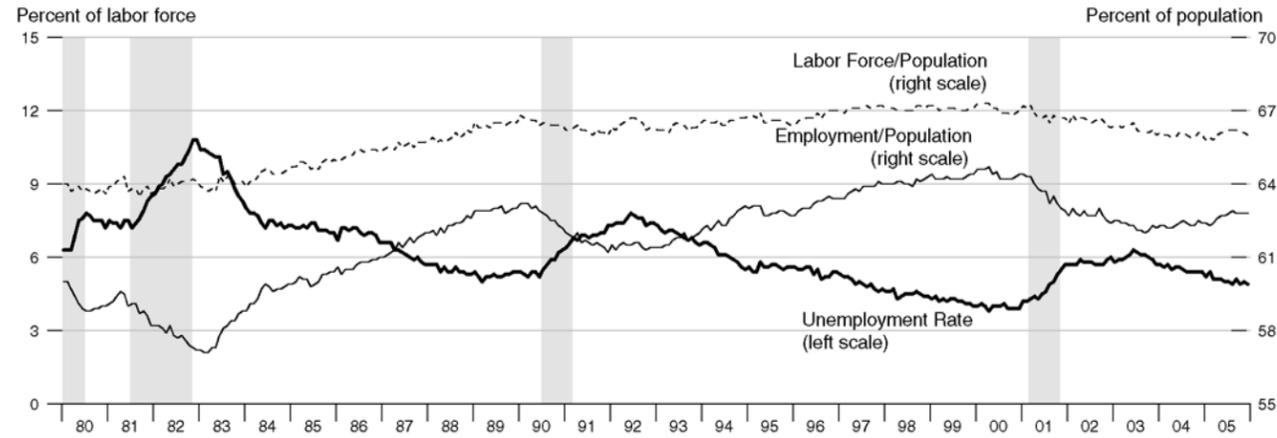
**Compensation per Hour**



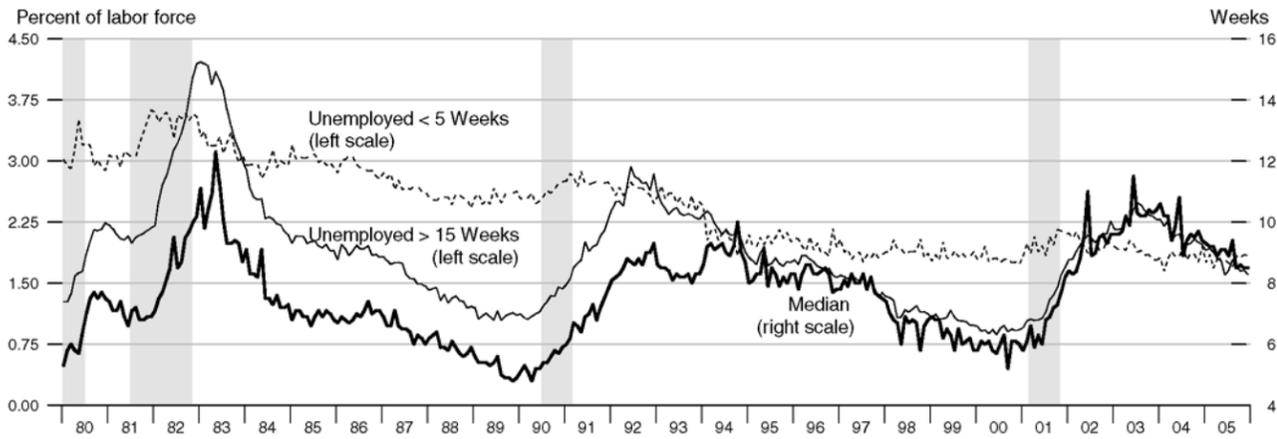
**Employment**



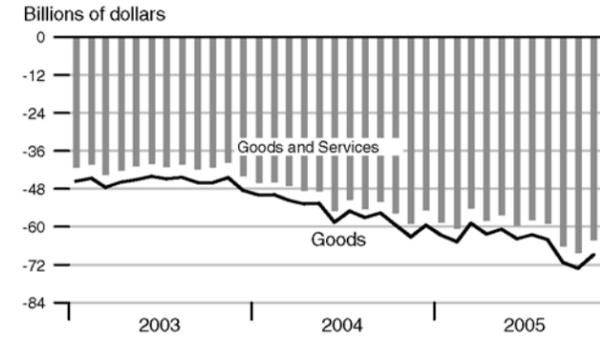
**Unemployment, Labor Force Participation, and Employment Rates**



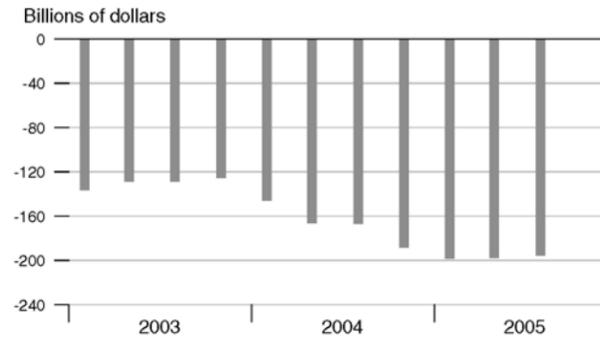
**Duration of Unemployment**



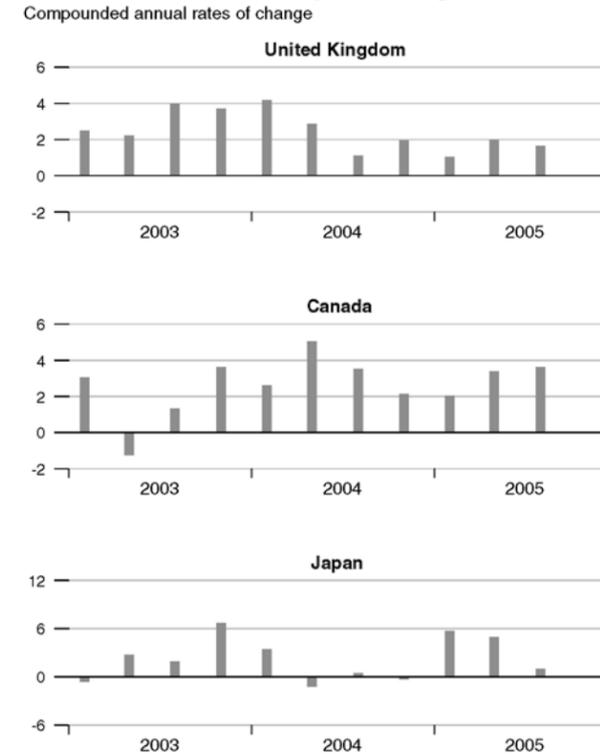
**Trade Balance**



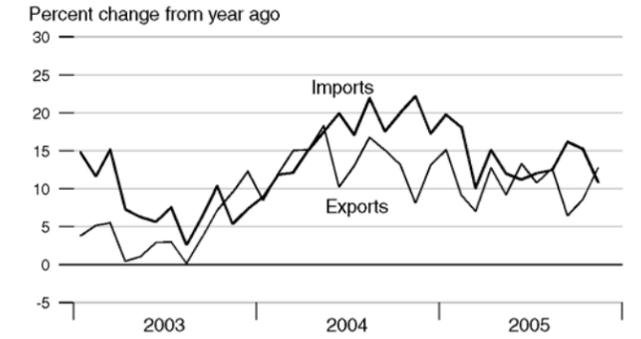
**Current Account Balance**



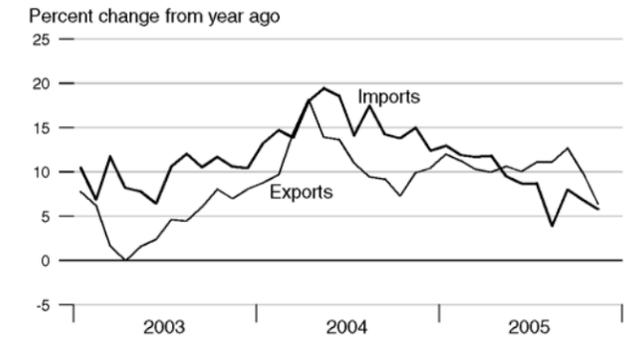
**Real GDP Growth of Major Trading Partners**



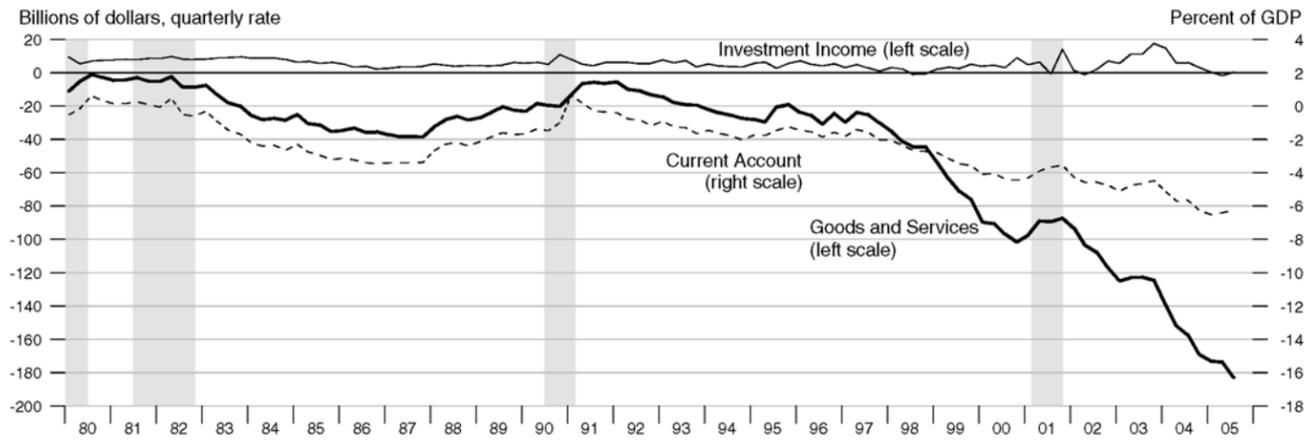
**Goods Trade**



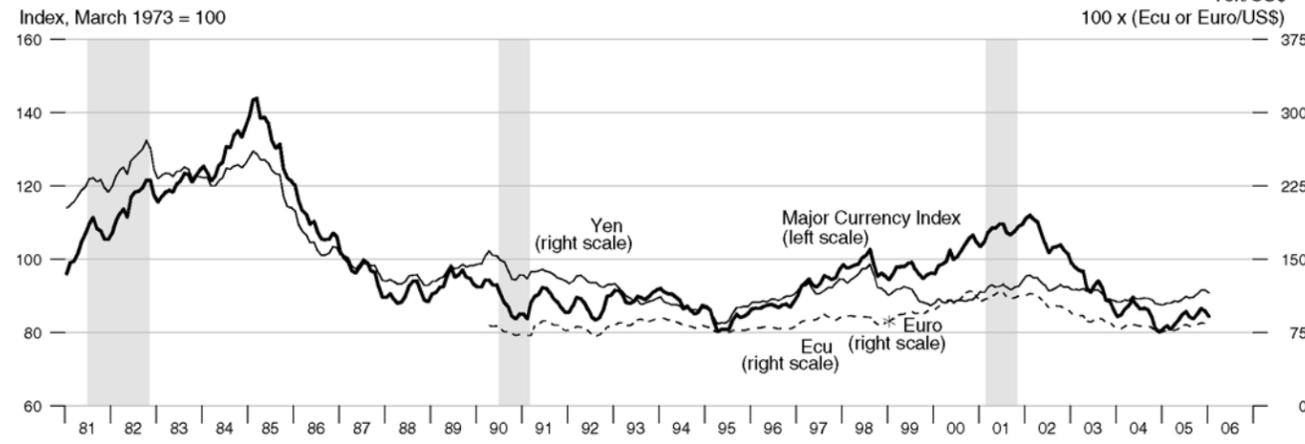
**Services Trade**



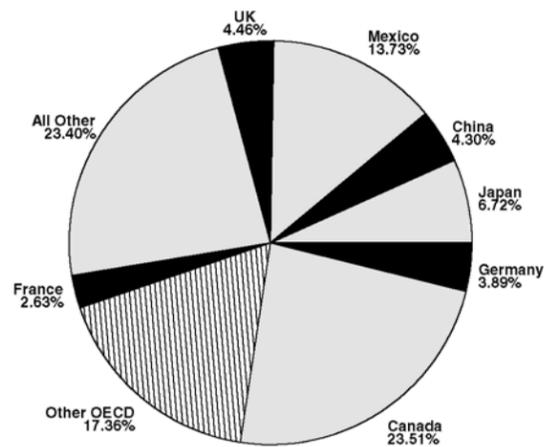
**Current Account, Trade and Investment Income Balances**



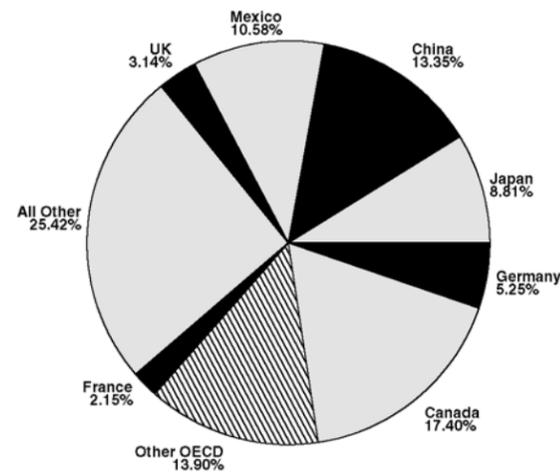
**Exchange Rates**



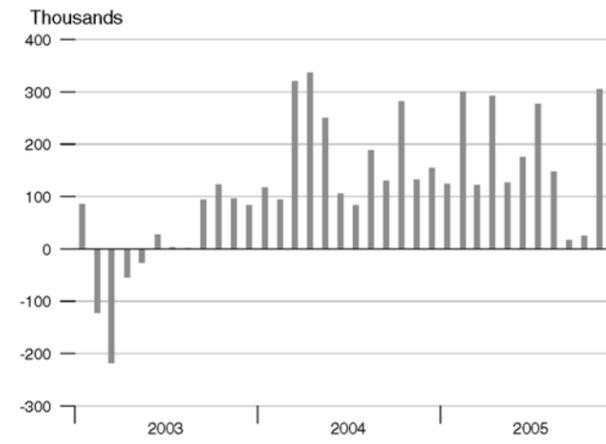
**Goods Export Shares, 2004**



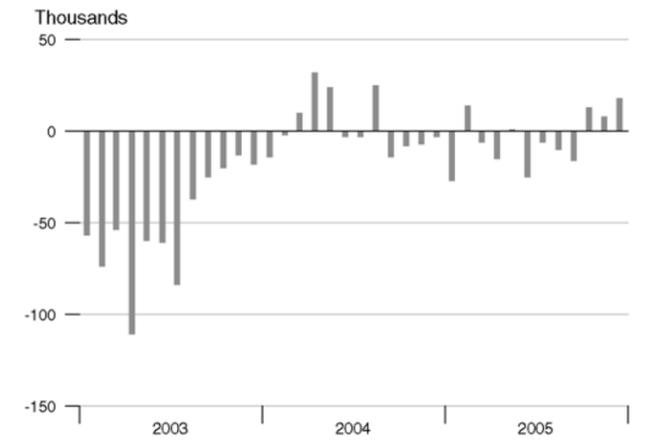
**Goods Import Shares, 2004**



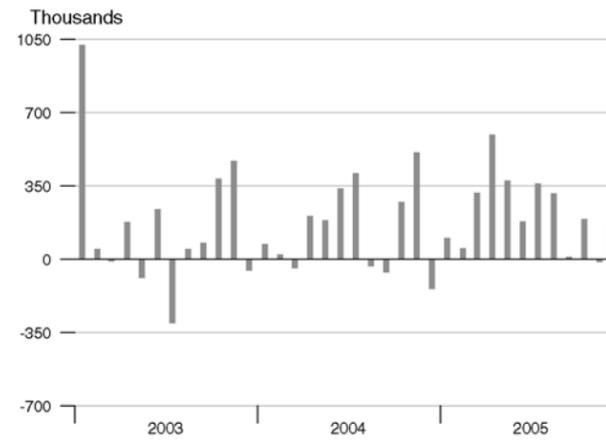
**Change in Nonfarm Payrolls**



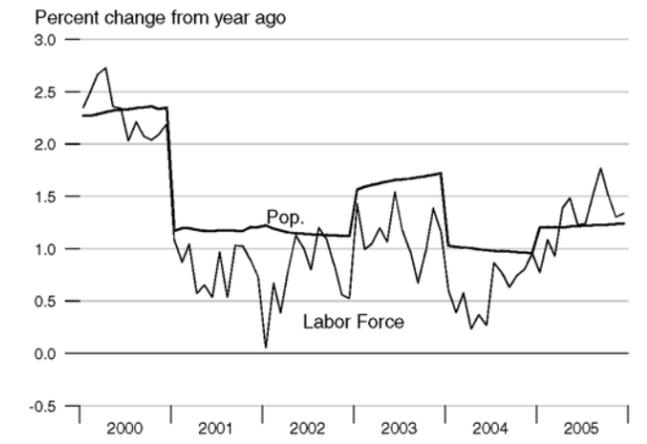
**Change in Manufacturing Payrolls**



**Change in Household Employment**



**Labor Force and Population**



**Available Labor Supply and Components**

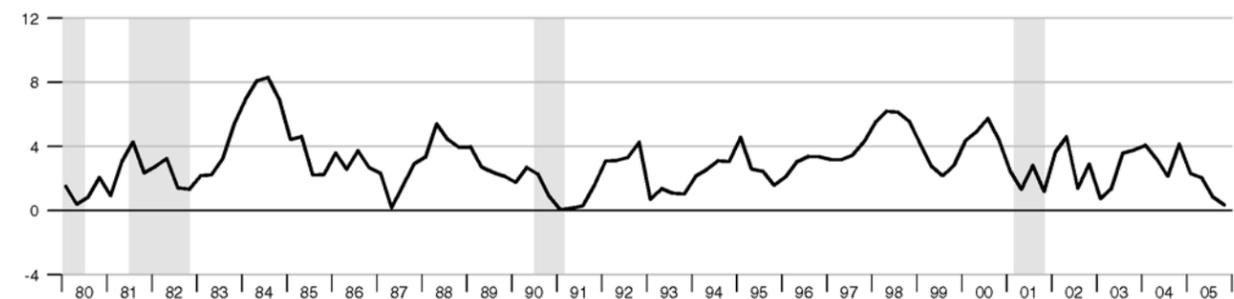


**Unemployment Rate & Help-Wanted Index**



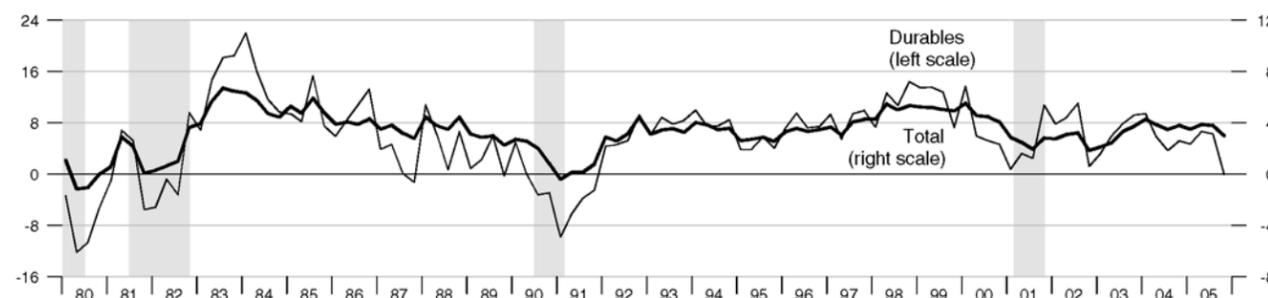
**Real Disposable Personal Income**

Percent change from year ago, quarterly data



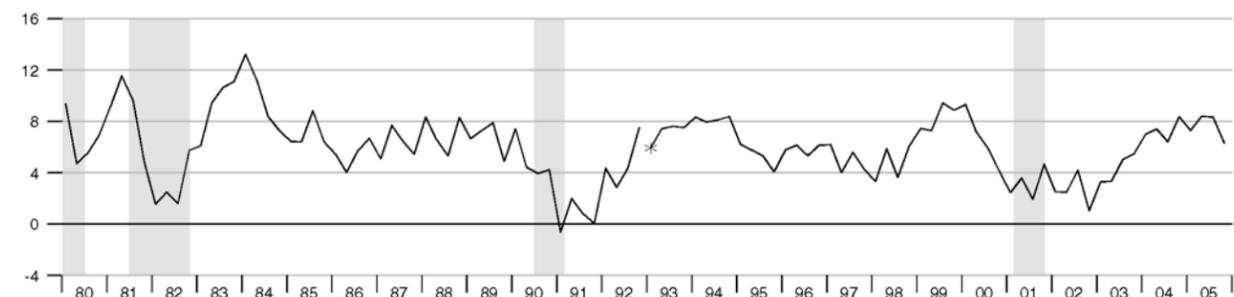
**Real Consumption**

Percent change from year ago, quarterly data



**Retail and Food Services Sales**

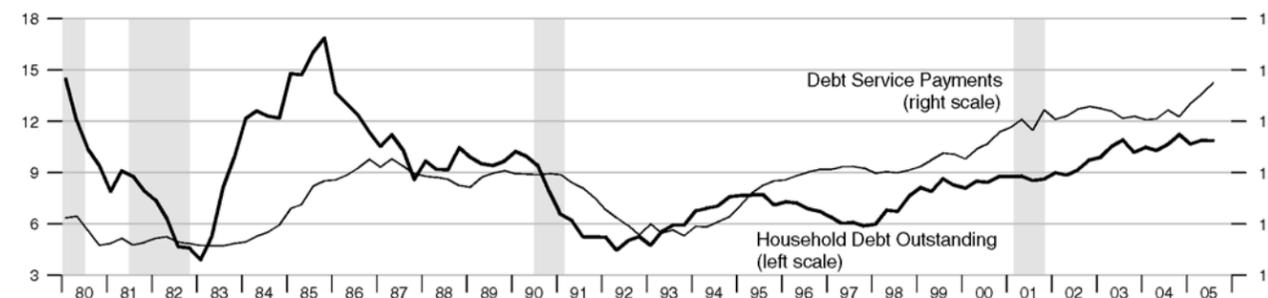
Percent change from year ago, quarterly average



\*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).

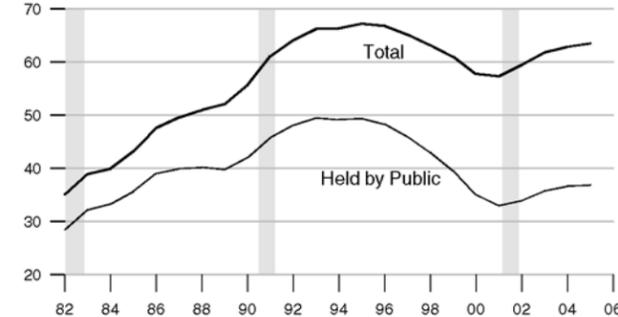
**Debt Service Payments and Household Debt Outstanding**

Percent change from year ago, quarterly data



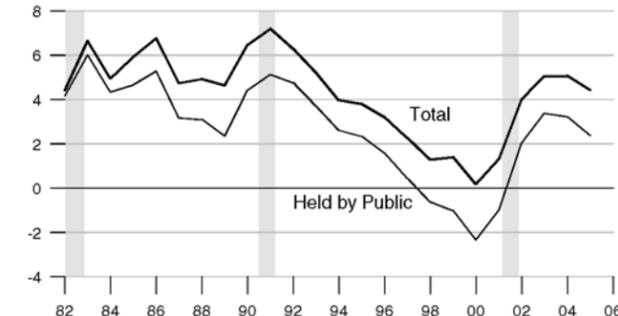
**Federal Debt**

Percent of GDP



**Change in Federal Debt**

Percent of GDP



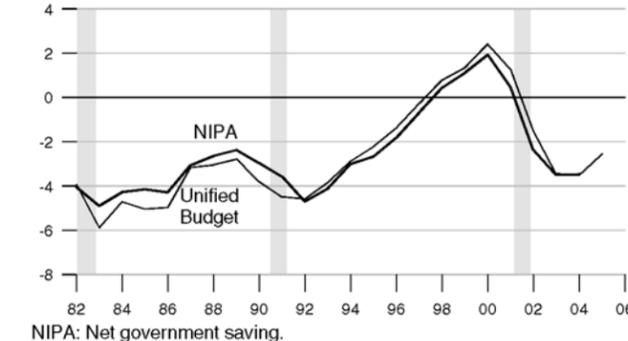
**Federal Government Debt**

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
2003		6783.2	2859.3	3923.9	656.1	3268.0	1454.2
2004		7379.1	3075.7	4303.4	700.3	3607.0	1836.6
2005		7932.7	3331.1	4601.6	736.4	3864.9	2069.0
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	1286.3
	June	6670.1	2853.8	3816.3	652.1	3164.7	1382.8
	September	6783.2	2859.3	3923.9	656.1	3268.0	1454.2
	December	6998.0	2954.5	4044.1	666.7	3377.9	1533.0
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	1983.5
	June	7836.5	3308.9	4527.6	724.7	3803.0	2016.2
	September	7932.7	3331.1	4601.6	736.4	3864.9	2069.0

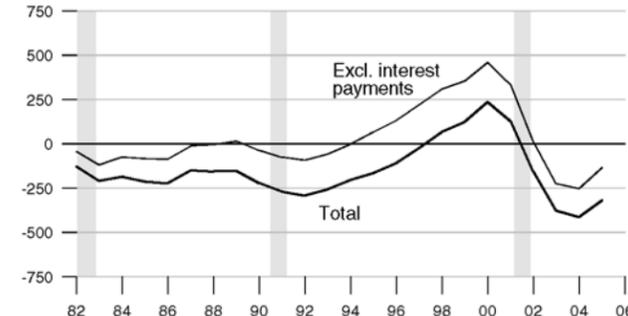
**Federal Surplus (+) / Deficit (-)**

Percent of GDP

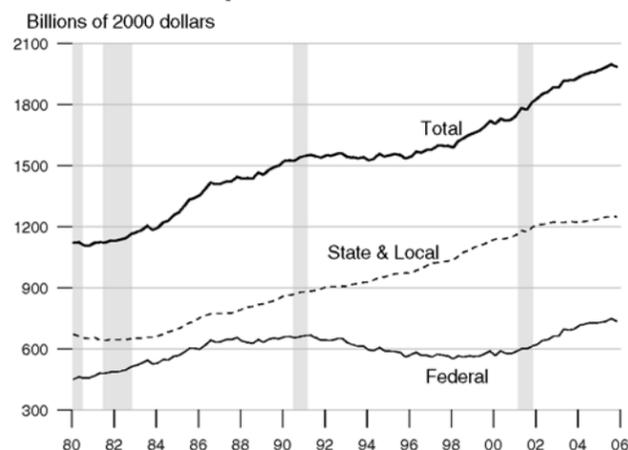


**Federal Surplus (+) / Deficit (-), Unified Basis**

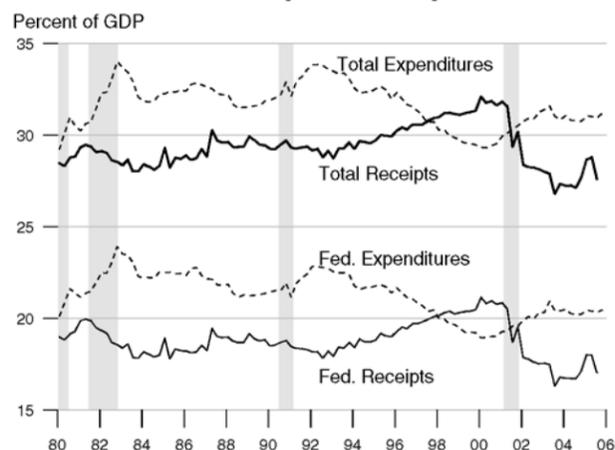
Billions of dollars, fiscal years



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures

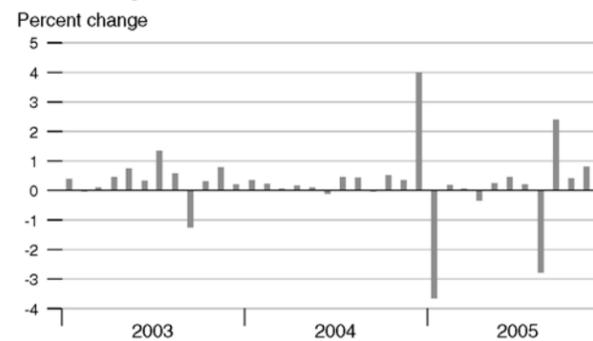


Government Budgets

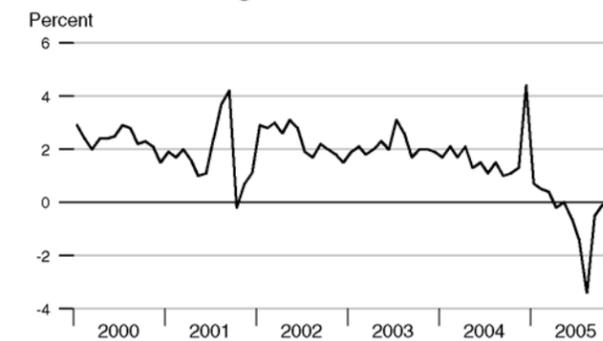
Billions of dollars

	National Income Accounts Calendar Years			Unified Budget Fiscal Years					
	State and Local	Federal		Federal					
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1991	789.2	793.3	-4.1	1101.3	1315.0	-213.7	1055.0	1324.3	-269.3
1992	845.7	845.0	0.7	1147.2	1444.6	-297.4	1091.3	1381.6	-290.3
1993	886.9	886.0	0.9	1222.5	1496.0	-273.5	1154.4	1409.5	-255.1
1994	942.9	932.4	10.5	1320.8	1533.1	-212.3	1258.6	1461.9	-203.2
1995	990.2	978.2	12.0	1406.5	1603.5	-197.0	1351.8	1515.8	-164.0
1996	1043.3	1017.5	25.8	1524.0	1665.8	-141.8	1453.1	1560.5	-107.5
1997	1097.4	1058.3	39.1	1653.1	1708.9	-55.8	1579.3	1601.2	-21.9
1998	1163.2	1111.2	52.0	1773.8	1734.9	38.9	1721.8	1652.6	69.2
1999	1236.7	1186.3	50.4	1891.2	1787.6	103.6	1827.5	1701.9	125.5
2000	1319.5	1269.5	50.0	2053.8	1864.4	189.4	2025.2	1789.1	236.2
2001	1373.0	1368.2	4.8	2016.2	1969.5	46.7	1991.2	1863.0	128.2
2002	1410.1	1444.3	-34.2	1853.2	2101.1	-247.9	1853.2	2011.0	-157.8
2003	1488.6	1512.4	-23.8	1868.6	2251.4	-382.8	1782.3	2159.9	-377.6
2004	1581.7	1587.5	-5.8	1974.8	2381.3	-406.5	1880.1	2292.2	-412.1
2005	.	1685.9	.	.	2547.5	.	2154.3	2472.9	-318.6
2003Q4	1539.0	1526.5	12.5	1887.9	2292.9	-405.0	440.8	569.4	-128.7
2004Q1	1546.8	1553.2	-6.4	1917.8	2347.2	-429.4	409.6	580.4	-170.8
2004Q2	1579.7	1581.3	-1.6	1951.4	2364.9	-413.5	549.9	575.6	-25.7
2004Q3	1574.5	1593.8	-19.3	1975.4	2387.0	-411.6	479.5	565.4	-85.9
2004Q4	1625.7	1621.7	4.0	2054.6	2426.2	-371.6	487.2	605.2	-118.1
2005Q1	1656.7	1649.4	7.3	2196.6	2494.9	-298.3	451.8	628.4	-176.6
2005Q2	1694.9	1673.7	21.2	2227.9	2525.2	-297.3	665.2	619.9	45.2
2005Q3	1684.3	1690.8	-6.5	2148.5	2563.7	-415.2	549.2	618.2	-69.0
2005Q4	.	1729.9	.	.	2606.2	.	530.2	649.5	-119.3

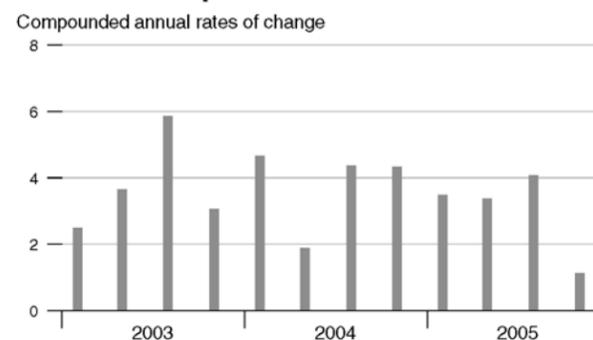
Real Disposable Personal Income



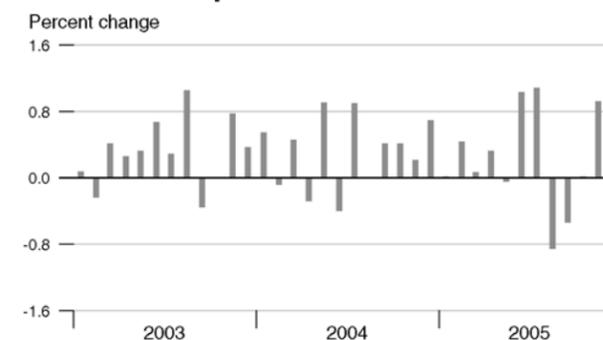
Personal Saving Rate



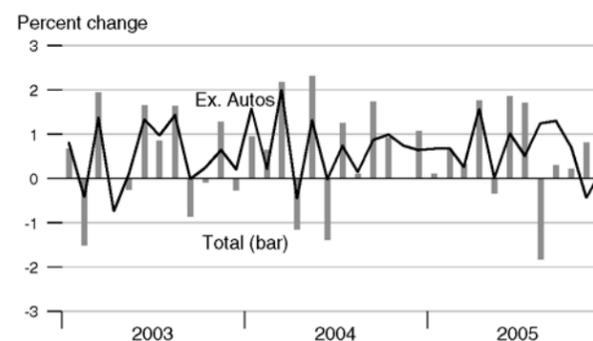
Real Consumption



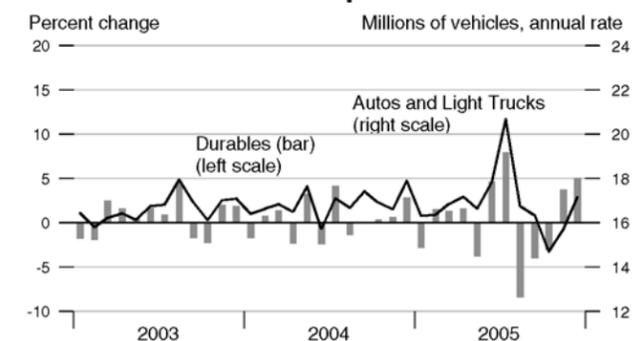
Real Consumption



Retail & Food Services



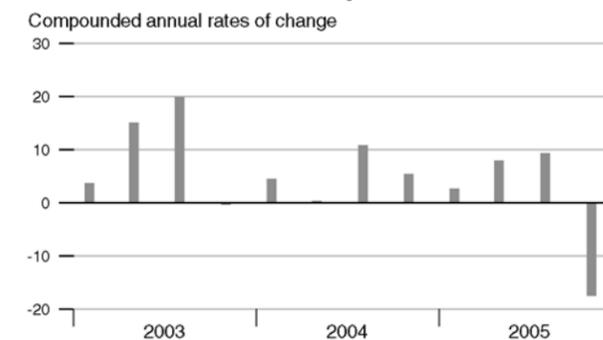
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

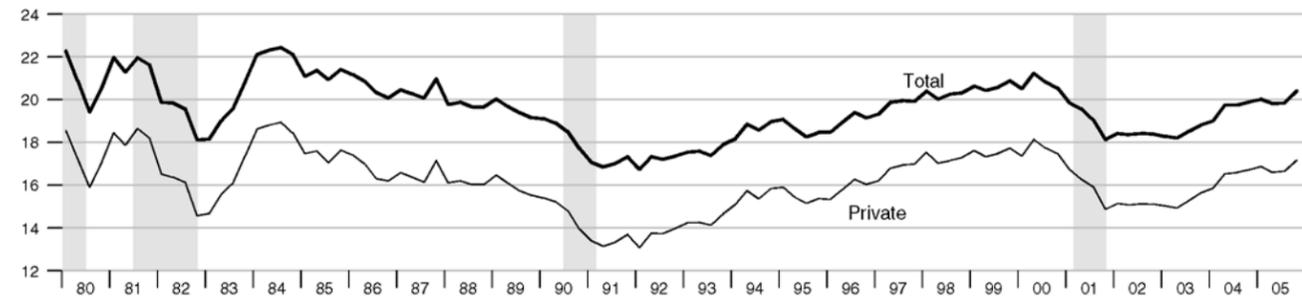


Real Durables Consumption



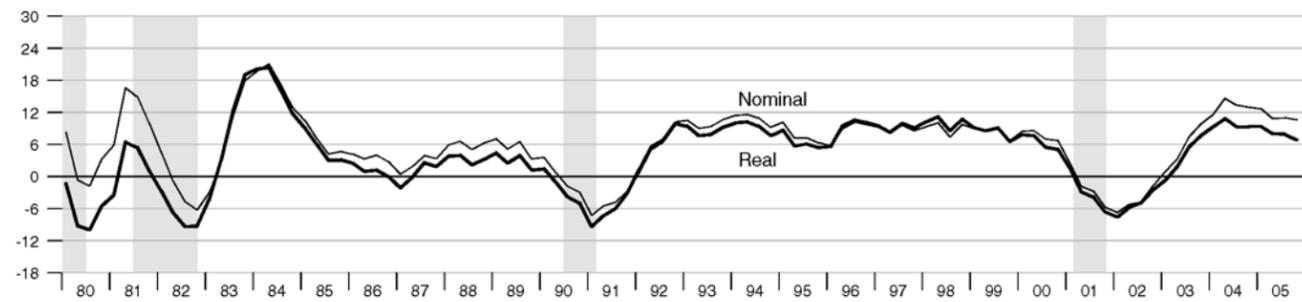
**Investment**

Percent of nominal GDP



**Private Fixed Investment**

Percent change from year ago



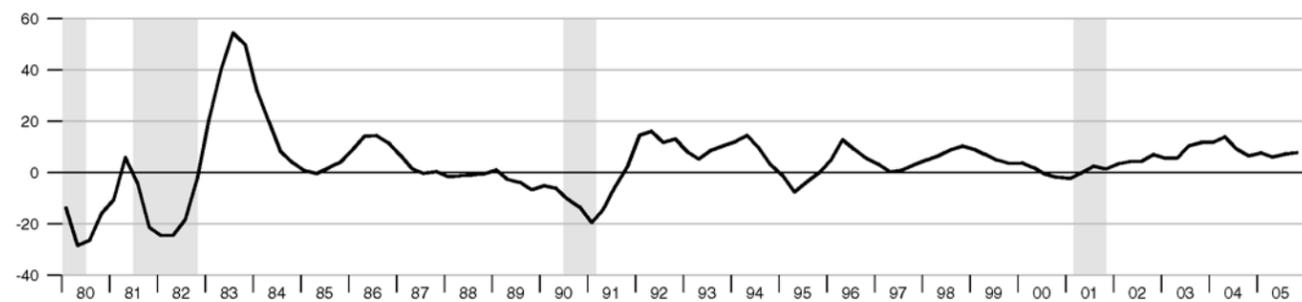
**Real Nonresidential Fixed and Equipment & Software Investment**

Percent change from year ago



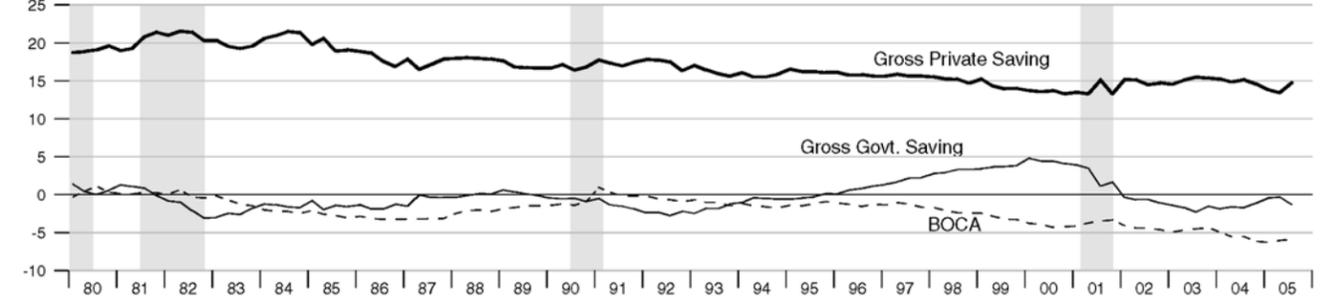
**Real Residential Fixed Investment**

Percent change from year ago



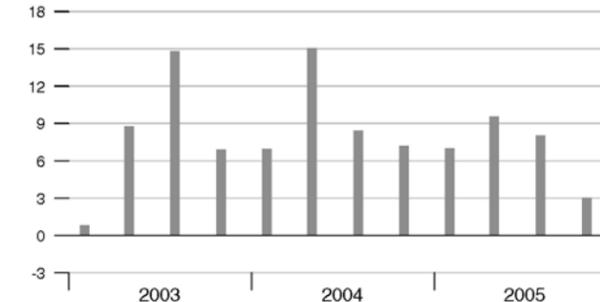
**Gross Saving Rates and Balance on Current Account (NIPA)**

Percent of GDP



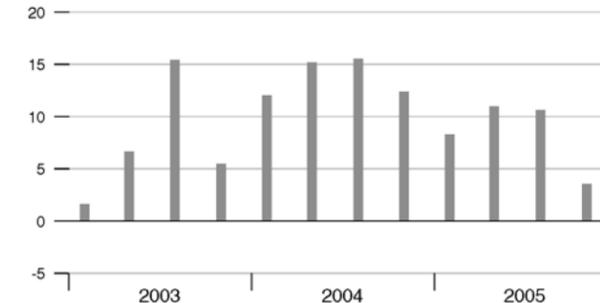
**Real Private Fixed Investment**

Compounded annual rates of change



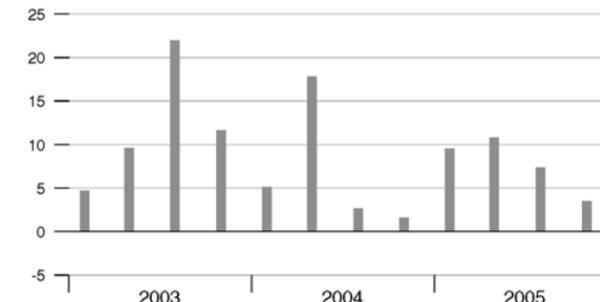
**Real Equipment & Software Investment**

Compounded annual rates of change



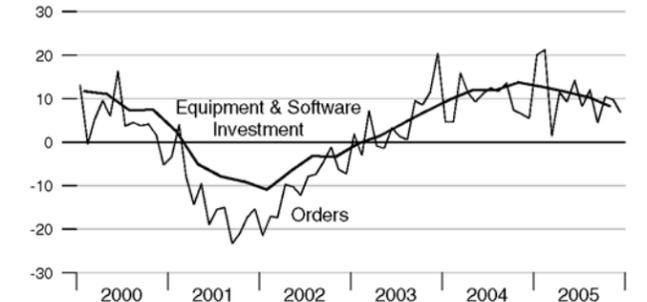
**Real Residential Fixed Investment**

Compounded annual rates of change



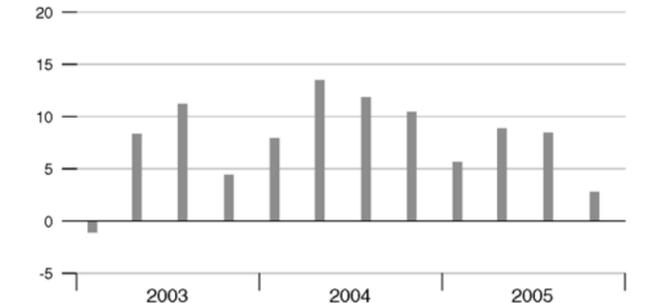
**Nondefense Capital Goods Orders**

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

