National Economic Trends

July 2006

The Seasonal Cycle and the Business Cycle

Since 1984, the variance of U.S. output growth has decreased about 75 percent compared with the postwar period ending in 1983. This change and its potential causes have received an enormous amount of attention, and several hypotheses have been proposed. One major hypothesis is that a fundamental structural change took place in the U.S. economy in the 1980s. A leading example of the structural-change hypothesis, proposed by Kahn, McConnell, and Perez-Quiros (2001), argues that improvements in information technology and inventory management are the chief source of the volatility reduction. Key pieces of evidence in support of this argument are the sharp decline in the inventory-to-sales ratio since 1984 and the corresponding sharp decline in the variance of production relative to the variance of sales. Stock and Watson (2002), however, challenge this IT revolution hypothesis. They conclude, on the basis of detailed analysis of a broad set of variables, that there is no strong evidence to show that the inventory-to-sales ratio has declined since 1984 at the business-cycle frequency. Stock and Watson instead attribute most of the reduction in GDP volatility to "good luck"—that is, reductions in the variance of shocks hitting the U.S. economy.

Macroeconomists typically use seasonally adjusted data, under the assumption that the business cycle and the seasonal cycle are unrelated, or that seasonal fluctuations are fully anticipated.[1] Hence the volatility reduction in the U.S. economy since the early 1980s has so far been confirmed only by the use of seasonally adjusted data. However, about 99 percent of the variance in quarterly GDP growth comes from seasonal fluctuations. Aggregate output can grow rapidly in the fourth quarter at an annual rate of more than 19 percent and decline sharply in the first quarter at an annual rate of –32 percent. These quarterly growth rates vary tremendously from one year to another and are largely driven by Christmas spending. In sharp contrast to seasonal fluctuations, the average drop in GDP during a business cycle is only about 3 percent since World War II. It is therefore intriguing to consider whether output volatility has also changed at the seasonal frequency in seasonally unadjusted data. The result could shed new light on the underlying causes of the reduction of output volatility in the U.S. economy.

The attached chart, which shows the seasonal component of U.S. GDP growth for the period between 1947:Q1 and 2005:Q4, clearly indicates a volatility reduction in output growth at the seasonal frequency since 1979. The seasonal component is extracted by a band-pass filter. The variance of output growth at the seasonal frequency has decreased about 67 percent compared with that over the previous period ending in 1979, suggesting that the output volatility reduction found at the business-cycle frequency may be closely related to the volatility reduction at the seasonal-cycle frequency. However, the break point for the structural change is about 4 to 5 years earlier than the break point found at the business-cycle frequency. Also, the seasonal cycle becomes much more uniform after 1979, suggesting less unpredictability in the magnitude of the seasonal cycle. In my view, the marked reduction in seasonal variation is consistent with "structural" hypotheses; it would be consistent with the "good luck" hypothesis only if one believes that we just happened to experience a marked and persistent reduction in seasonal shocks, as well as in business cycle shocks.[2]

—Yi Wen

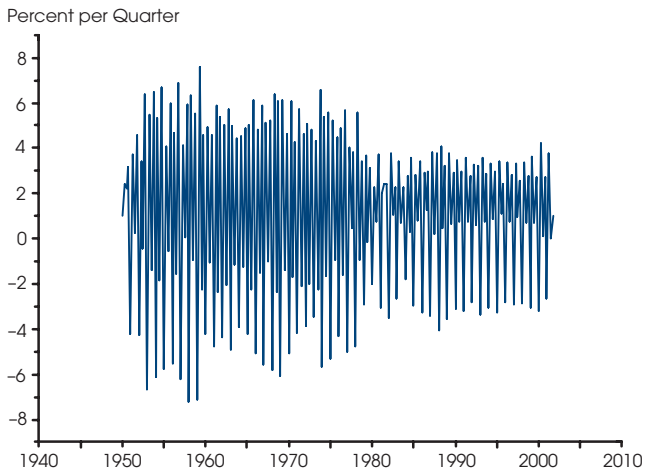
Kahn, James A.; McConnell, Margaret M. and Perez-Quiros, Gabriel. "Inventories and the Information Revolution: Implications for Output Volatility." Unpublished manuscript, Federal Reserve Bank of New York, 2001.

Stock, James H. and Watson, Mark W. "Has the Business Cycle Changed and Why?" Working Paper 9127, National Bureau of Economic Research, 2002.

[1] In fact, the magnitude of the seasonal cycle is as unpredictable as the business cycle, although the timing of the seasonal cycle is perfectly predictable.

[2] Given that movements at the business-cycle frequency account for only about 1 percent of total variance in output growth, a lack of large business-cycle shocks, even if it could completely eliminate the variance of output at the business-cycle frequency, can hardly cause a significant change in the variance of output at the seasonal frequency.

Seasonal Component of Output Growth Rate



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:

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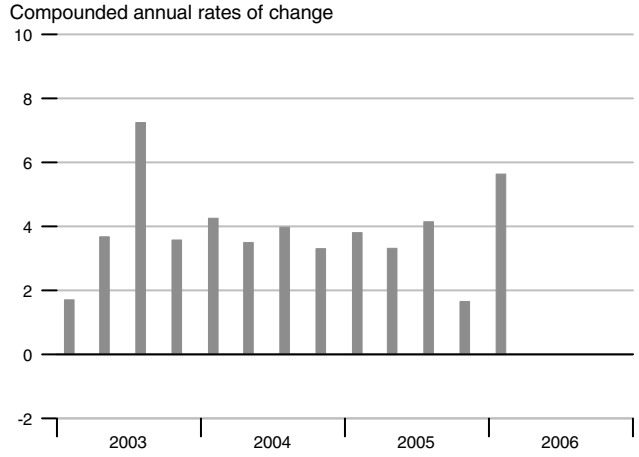
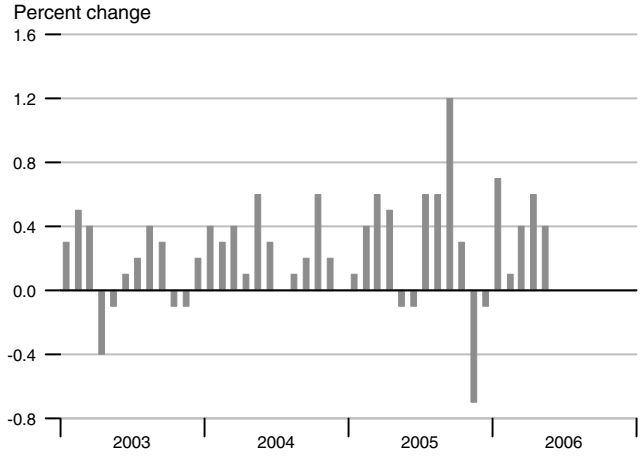
Real GDP Growth

Compounded annual rates of change



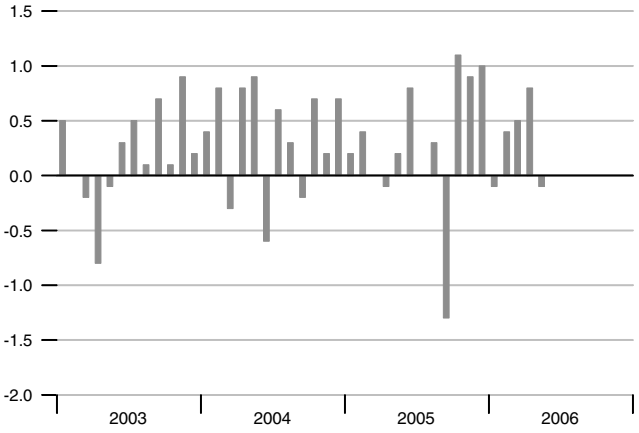
Consumer Price Index

Percent change



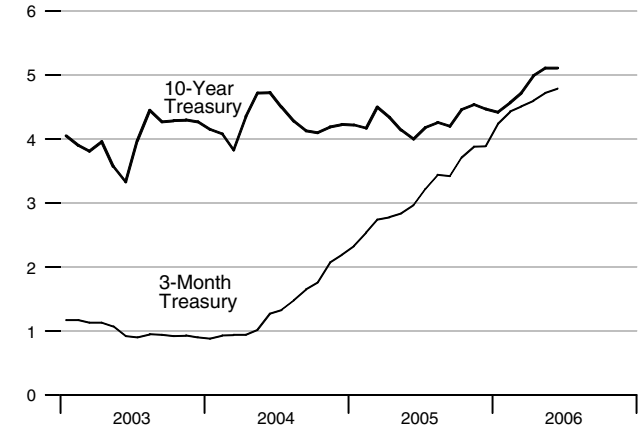
Industrial Production

Percent change



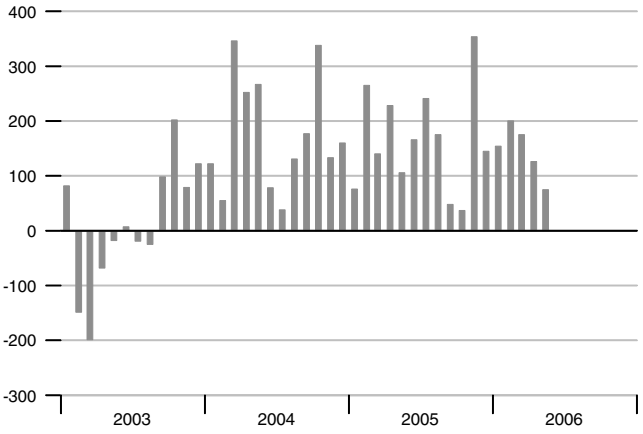
Interest Rates

Percent



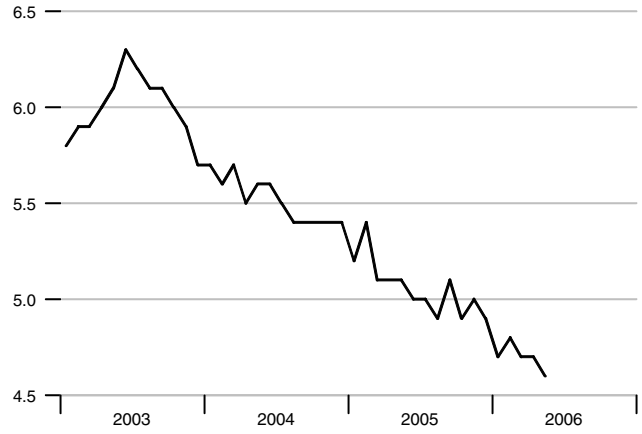
Change in Nonfarm Payrolls

Thousands



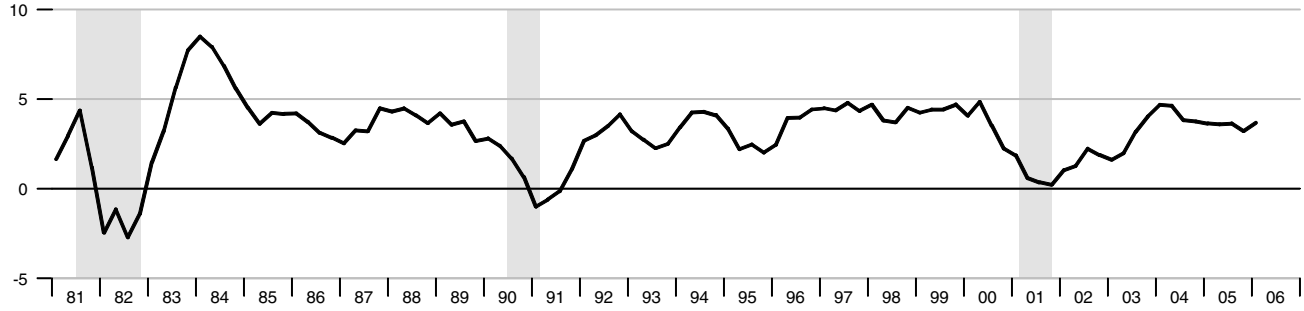
Unemployment Rate

Percent of labor force



Real Gross Domestic Product

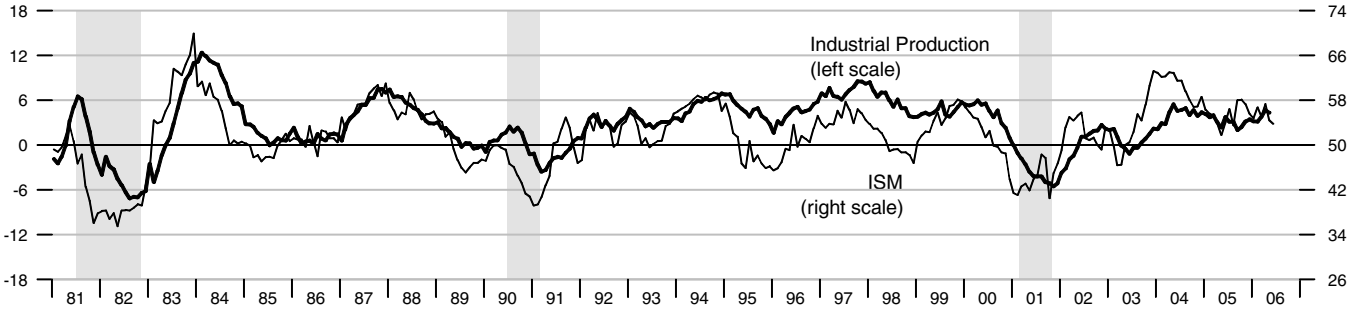
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

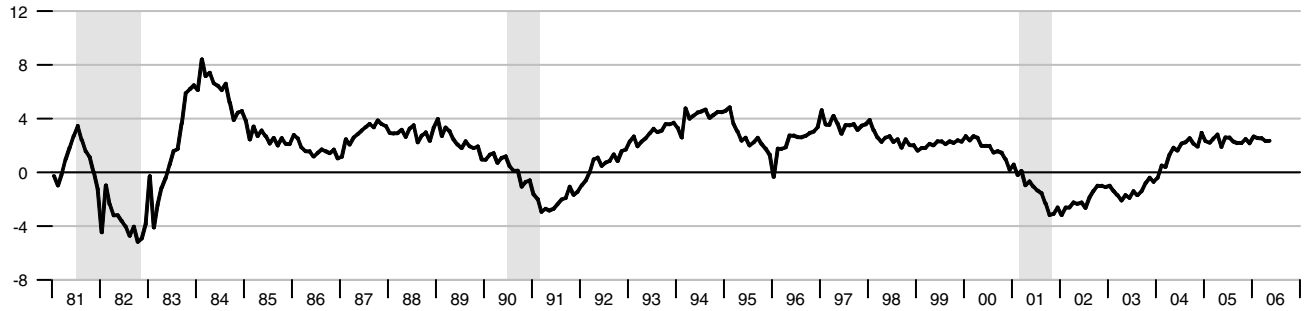
Percent change from year ago

Index



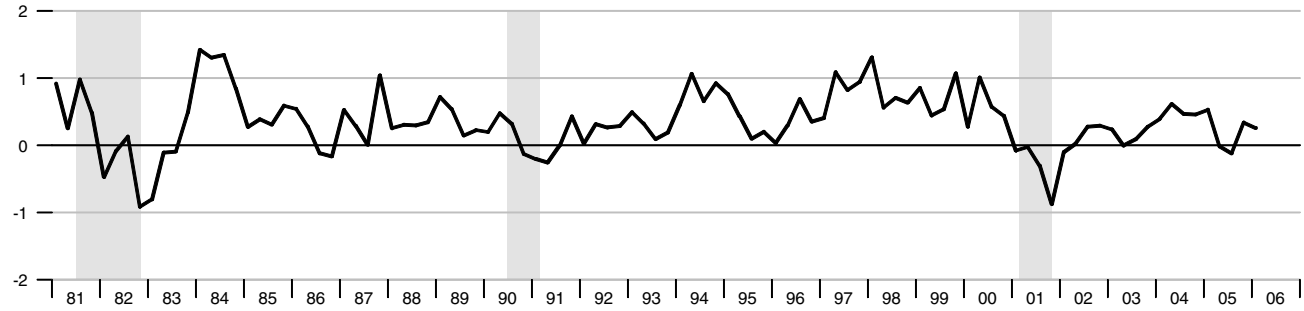
Aggregate Private Nonfarm Hours

Percent change from year ago



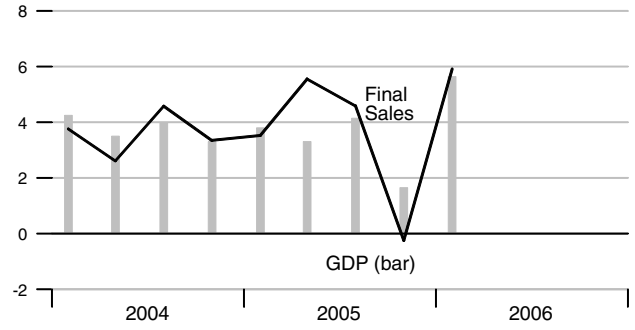
Real Change in Private Inventories

Percent of GDP



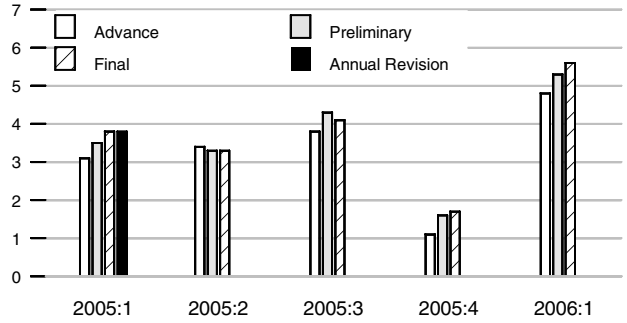
Real Final Sales and GDP

Compounded annual rates of change



Real GDP Revisions

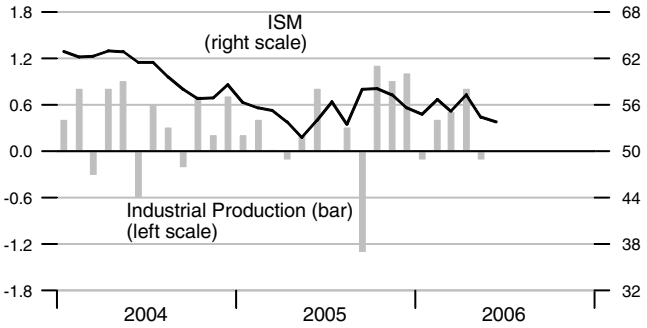
Compounded annual rates of change



Industrial Production and ISM Index

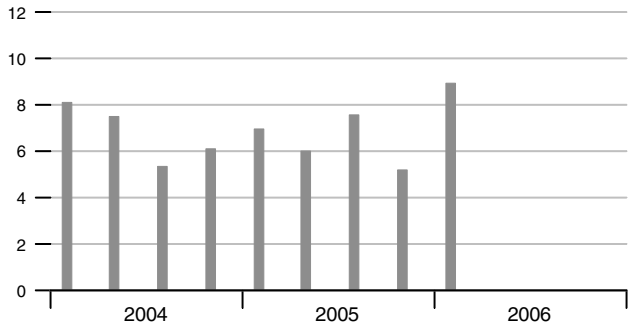
Percent change

Index



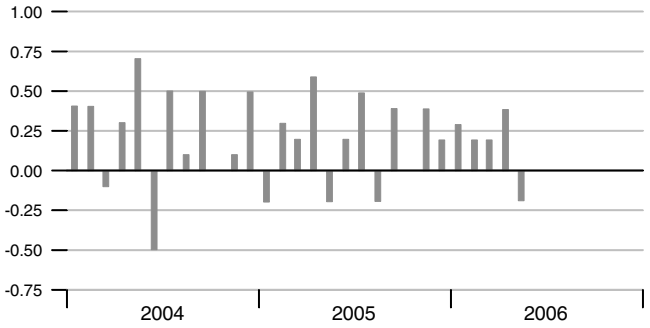
Nominal Gross Domestic Product

Compounded annual rates of change



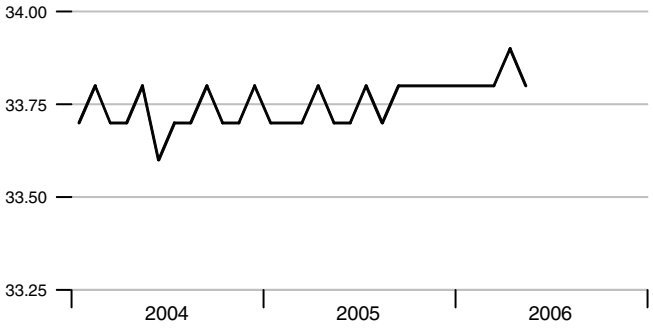
Aggregate Private Nonfarm Hours

Percent change



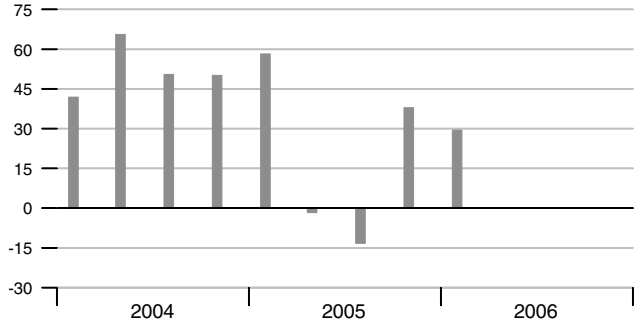
Average Weekly Private Nonfarm Hours

Hours



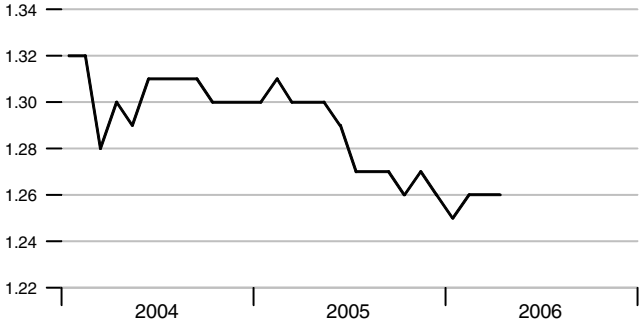
Real Change in Private Inventories

Billions of 2000 dollars



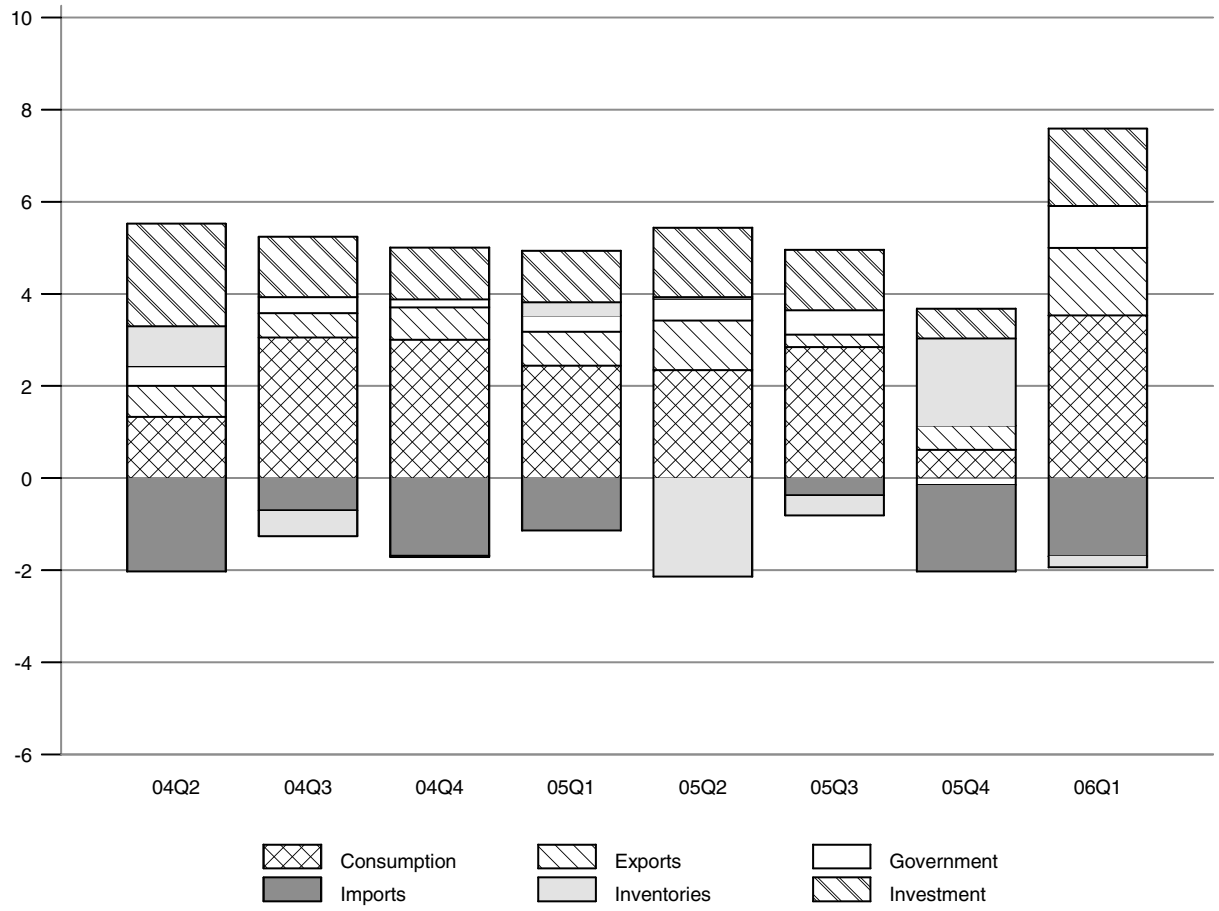
Inventory-Sales Ratio

Manufacturing and trade



Contribution of Components to Real GDP Growth

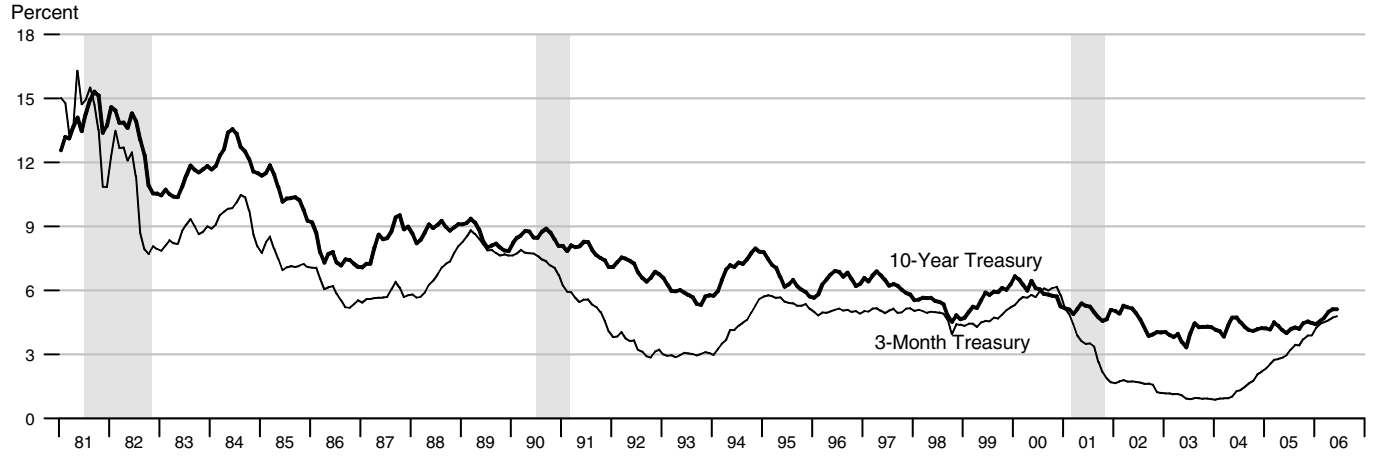
Percentage points at compounded annual rates



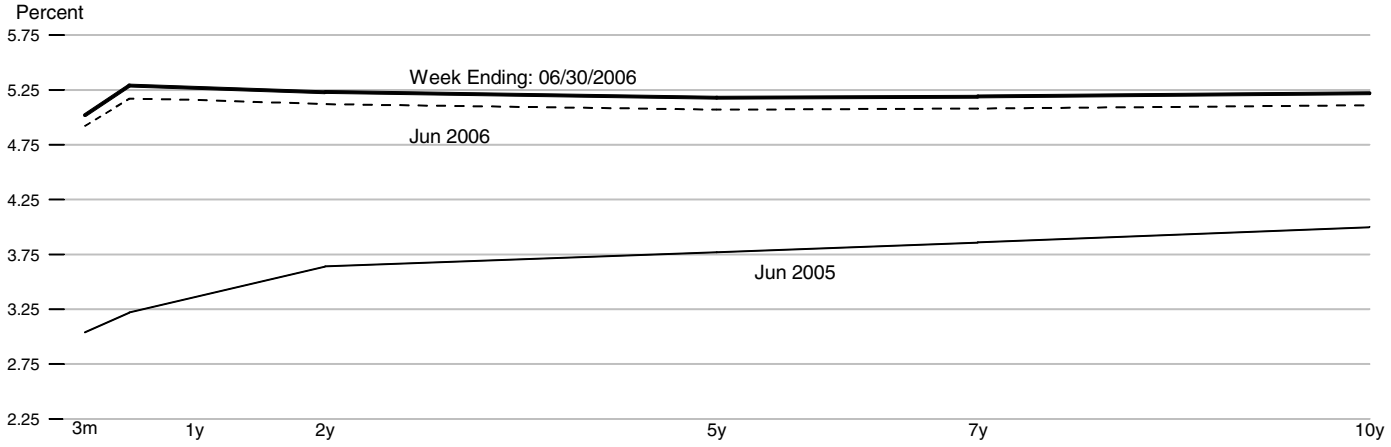
Contributions to Real GDP Growth Rate

	2004			2005				2006
	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Final Sales	2.63	4.53	3.33	3.51	5.45	4.57	-0.24	5.88
Consumption	1.33	3.05	3.01	2.44	2.35	2.85	0.62	3.53
Fixed Investment	2.22	1.31	1.13	1.12	1.51	1.31	0.65	1.68
Nonresidential	1.29	1.15	1.04	0.58	0.90	0.88	0.48	1.47
Residential	0.93	0.15	0.09	0.54	0.62	0.43	0.17	0.21
Government	0.43	0.35	0.17	0.35	0.47	0.54	-0.15	0.91
Federal	0.22	0.25	-0.04	0.17	0.17	0.52	-0.18	0.72
State and Local	0.21	0.10	0.21	0.19	0.31	0.03	0.03	0.19
Net Exports	-1.37	-0.17	-0.98	-0.40	1.11	-0.12	-1.36	-0.24
Exports	0.67	0.53	0.70	0.74	1.07	0.26	0.52	1.47
Imports	-2.03	-0.70	-1.68	-1.14	0.04	-0.38	-1.88	-1.70
Change in Inventory	0.87	-0.56	-0.03	0.29	-2.14	-0.43	1.89	-0.24
Residual	0.05	-0.07	-0.08	0.00	-0.01	-0.05	0.02	-0.07
Real GDP Growth	3.50	3.97	3.30	3.80	3.31	4.14	1.65	5.64

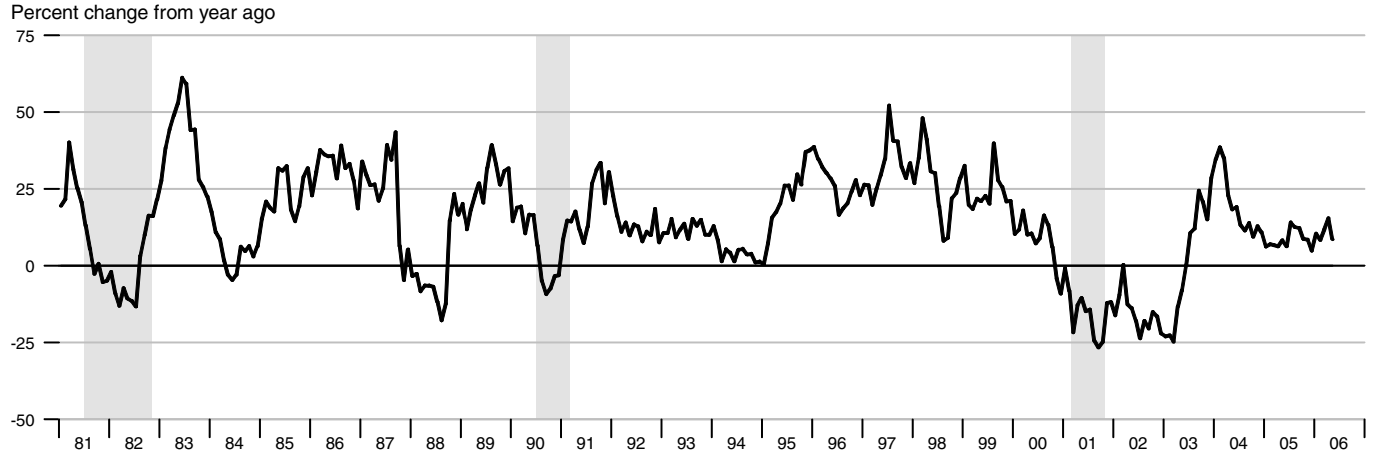
Interest Rates



Treasury Yield Curve

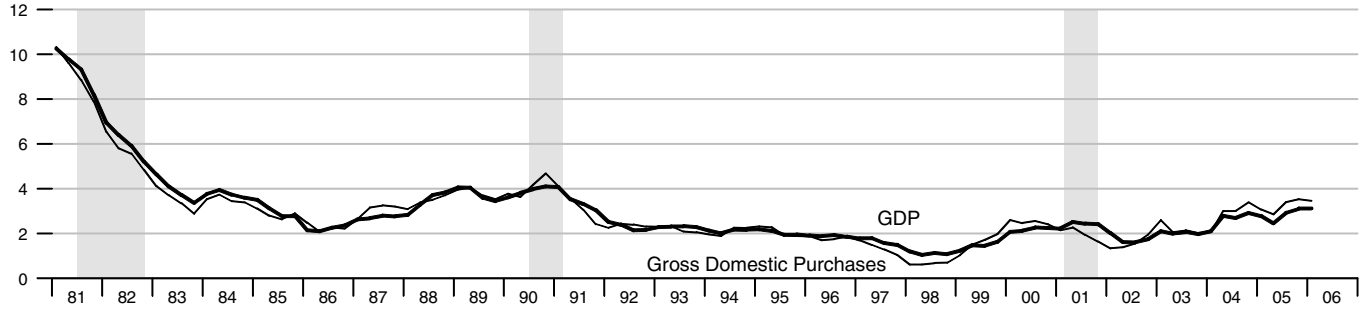


Standard and Poor's 500 Index with Reinvested Dividends



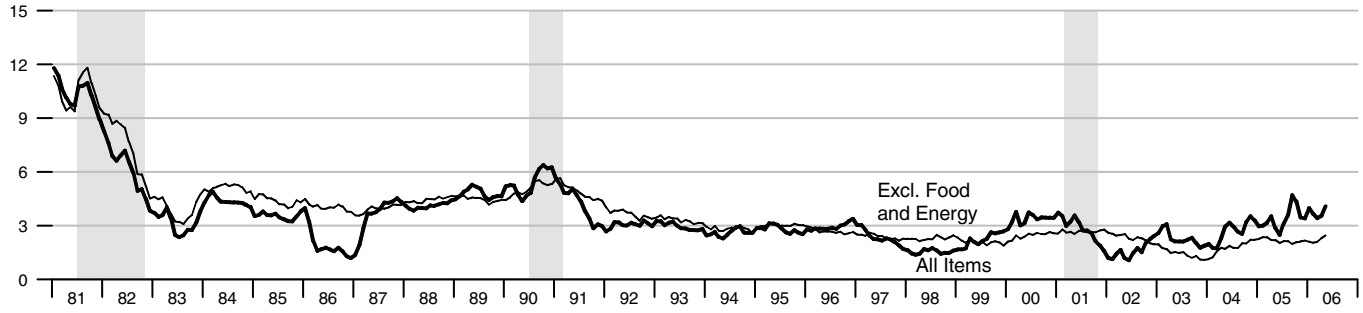
NIPA Chain Price Indexes

Percent change from year ago



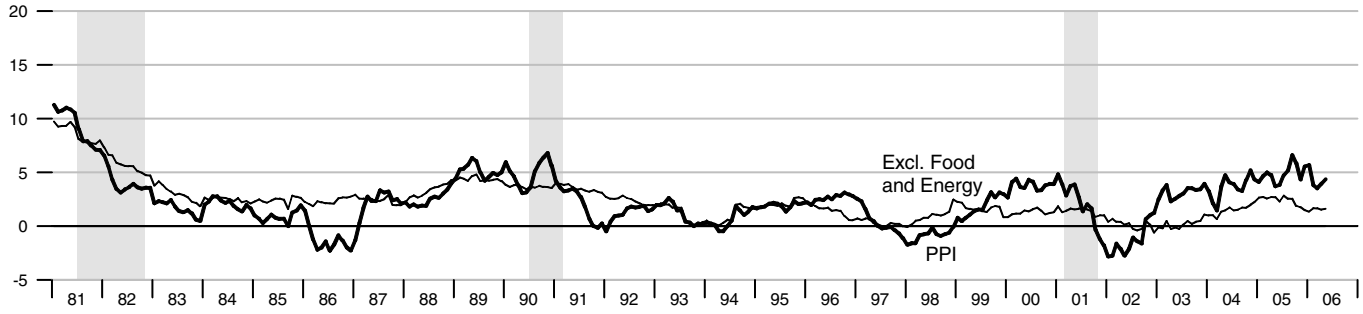
Consumer Price Index

Percent change from year ago



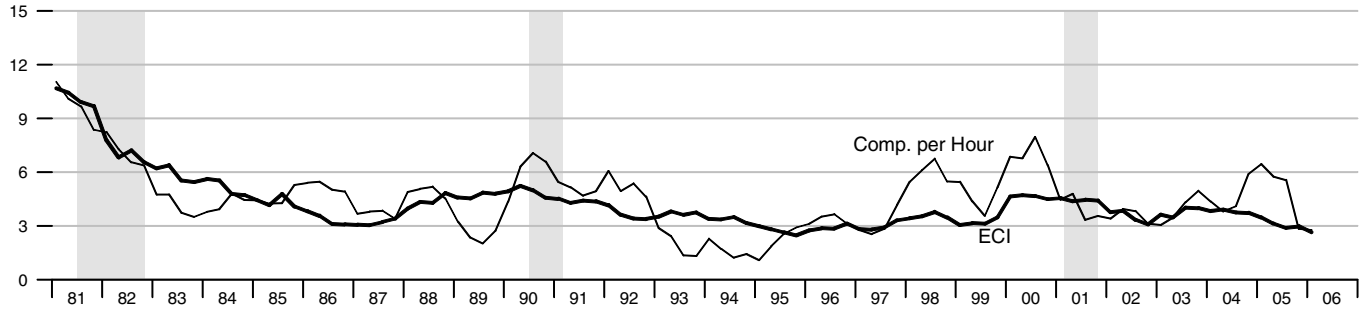
Producer Price Index, Finished Goods

Percent change from year ago



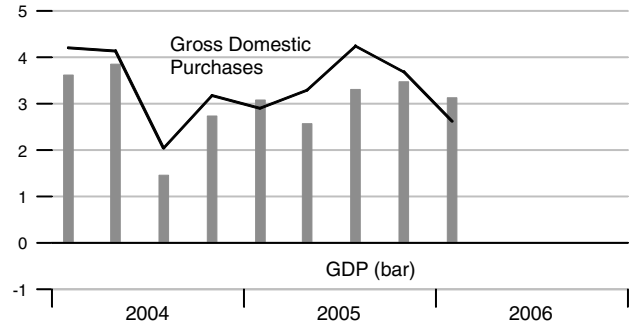
Employment Cost Index and Compensation per Hour

Percent change from year ago



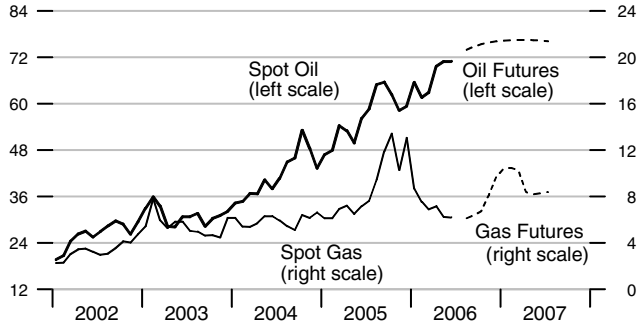
NIPA Chain Price Indexes

Compounded annual rates of change



Oil & Natural Gas Prices: Spot & Futures

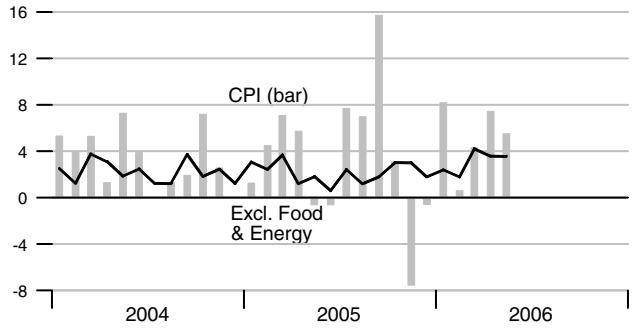
Dollars per barrel | Dollars per million btu



Note: Futures prices as of 06/30/2006.

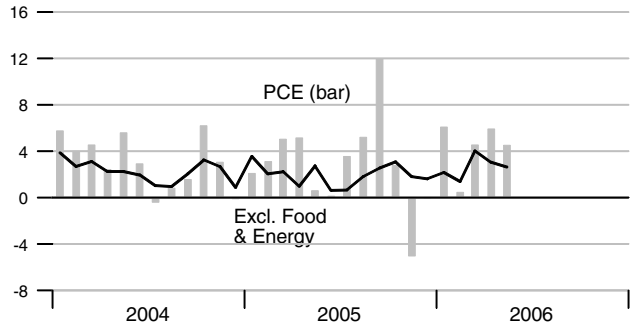
Consumer Price Index

Compounded annual rates of change



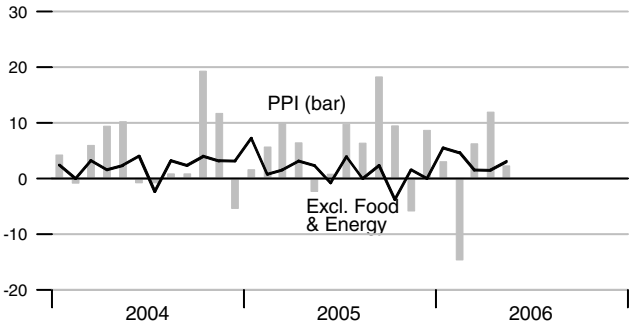
Consumption Chain Price Index

Compounded annual rates of change



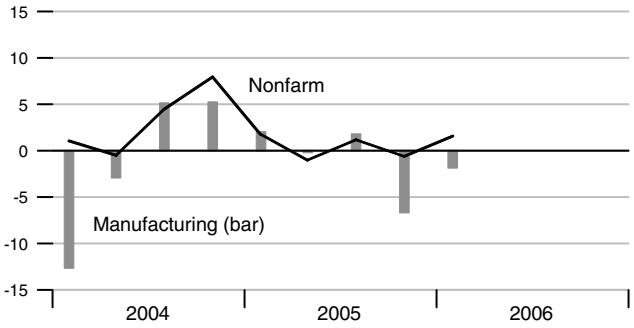
Producer Price Index, Finished Goods

Compounded annual rates of change



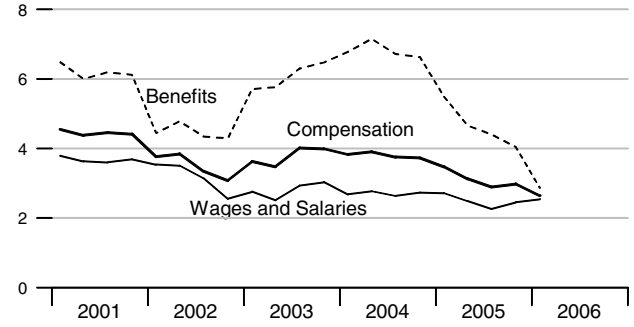
Unit Labor Cost

Compounded annual rates of change



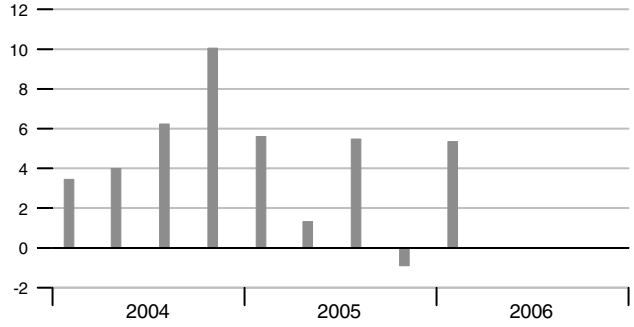
Employment Cost Index

Percent change from year ago

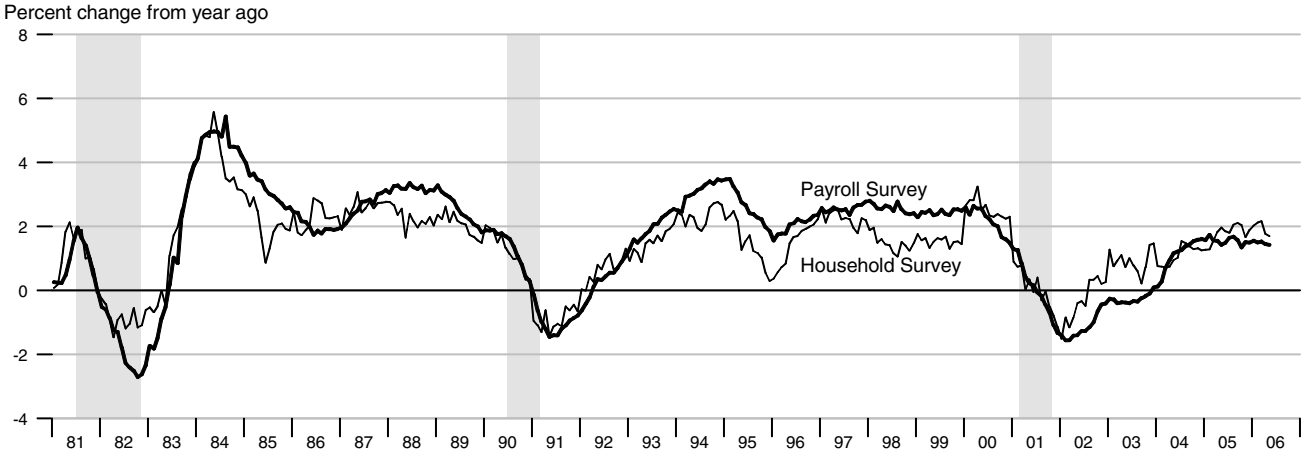


Compensation per Hour

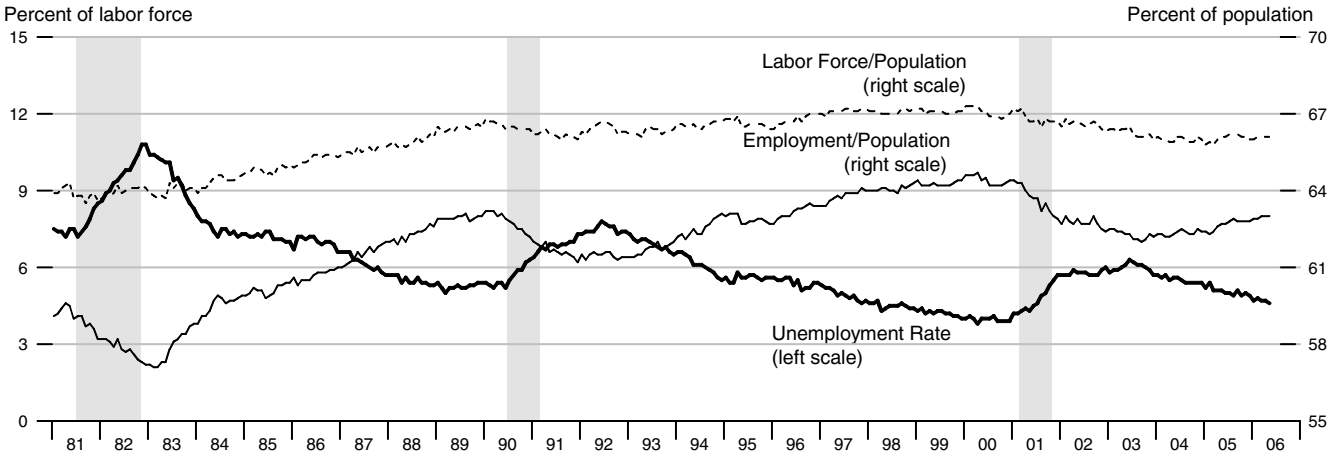
Compounded annual rates of change



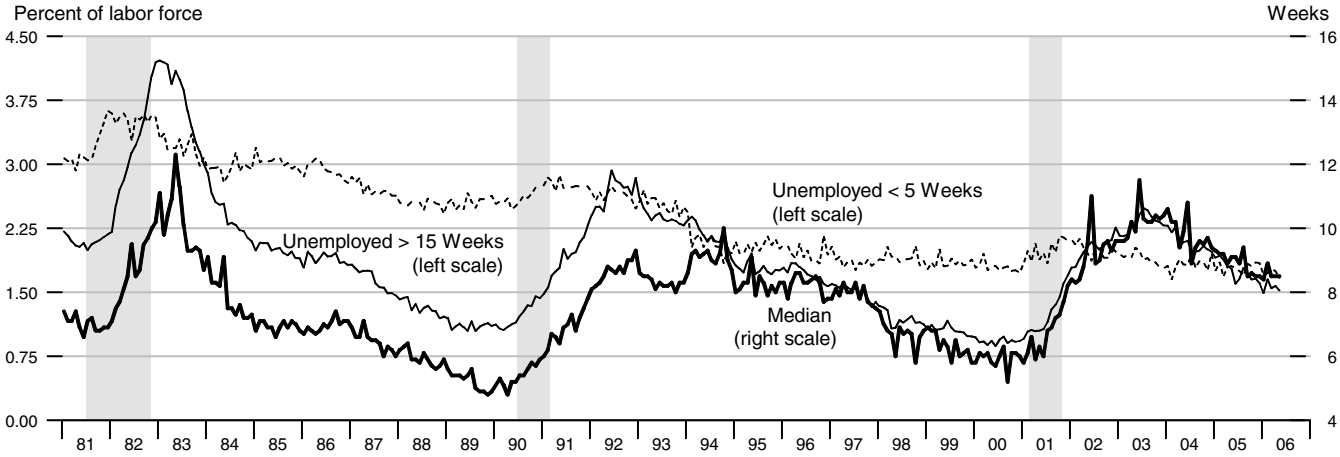
Employment



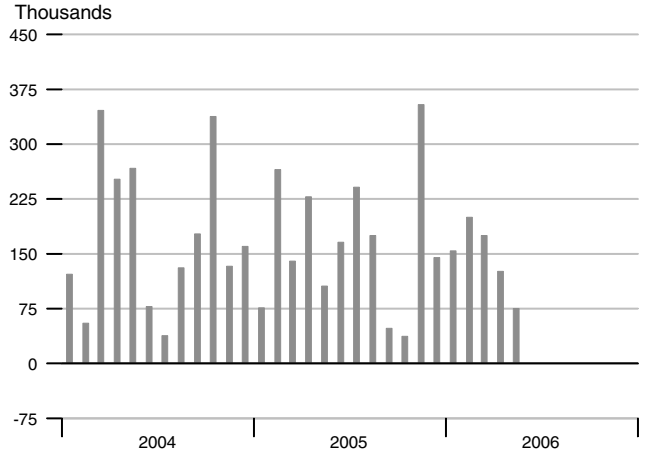
Unemployment, Labor Force Participation, and Employment Rates



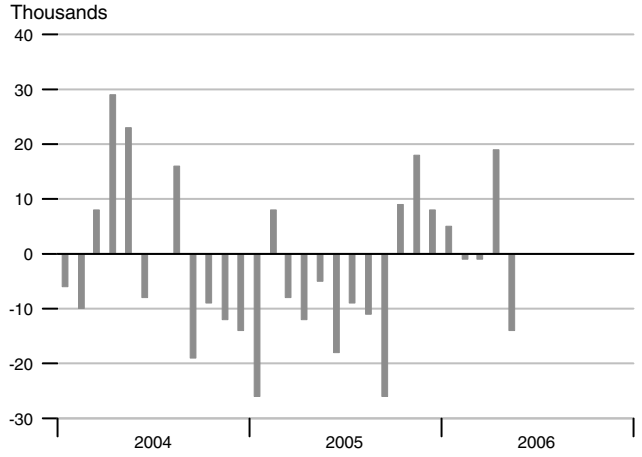
Duration of Unemployment



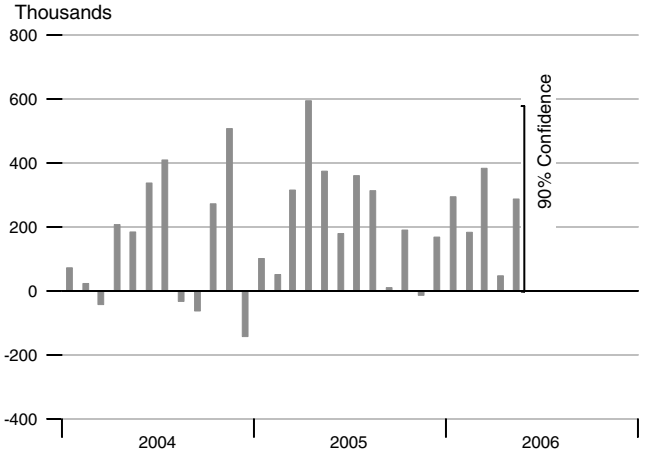
Change in Nonfarm Payrolls



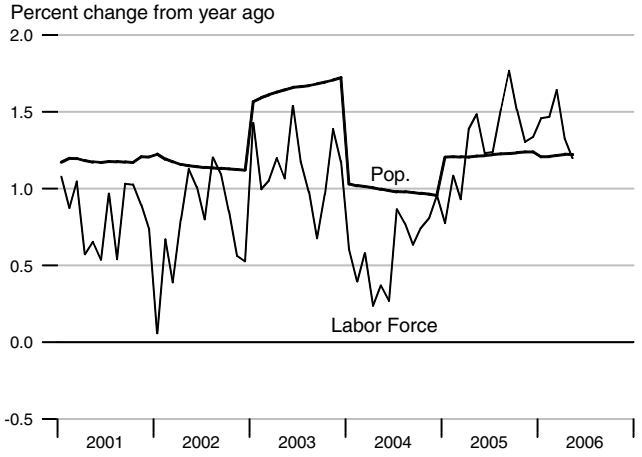
Change in Manufacturing Payrolls



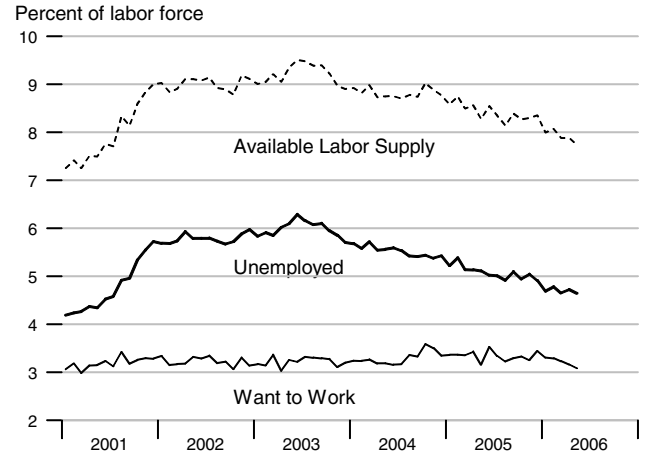
Change in Household Employment



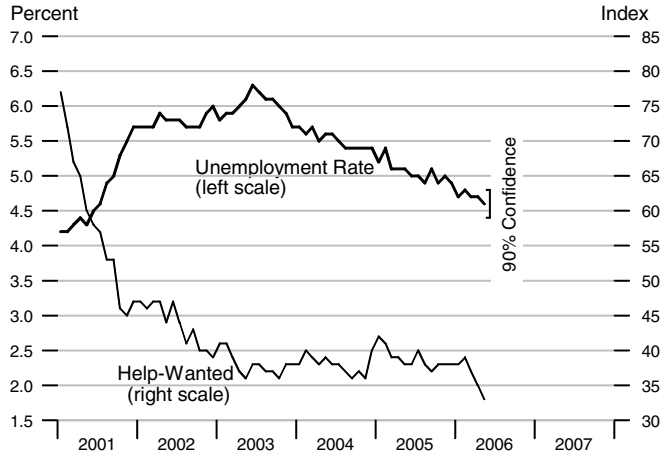
Labor Force and Population



Available Labor Supply and Components

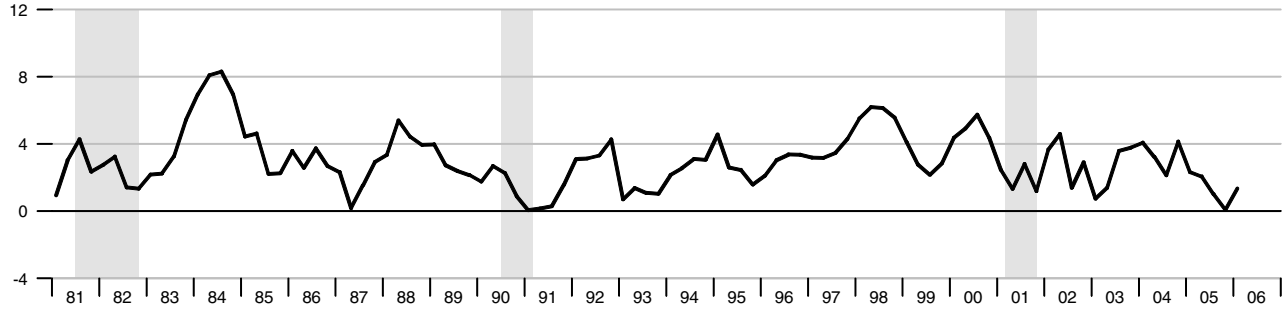


Unemployment Rate & Help-Wanted Index



Real Disposable Personal Income

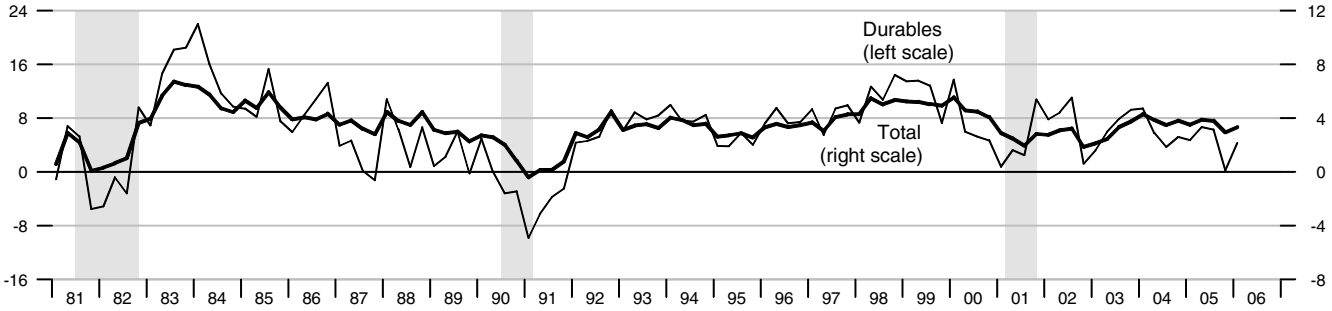
Percent change from year ago, quarterly data



Real Consumption

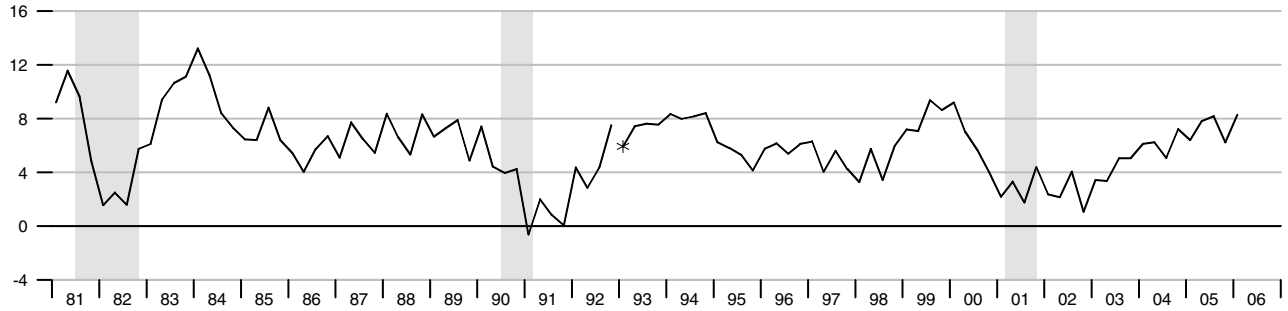
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



Retail and Food Services Sales

Percent change from year ago, quarterly average

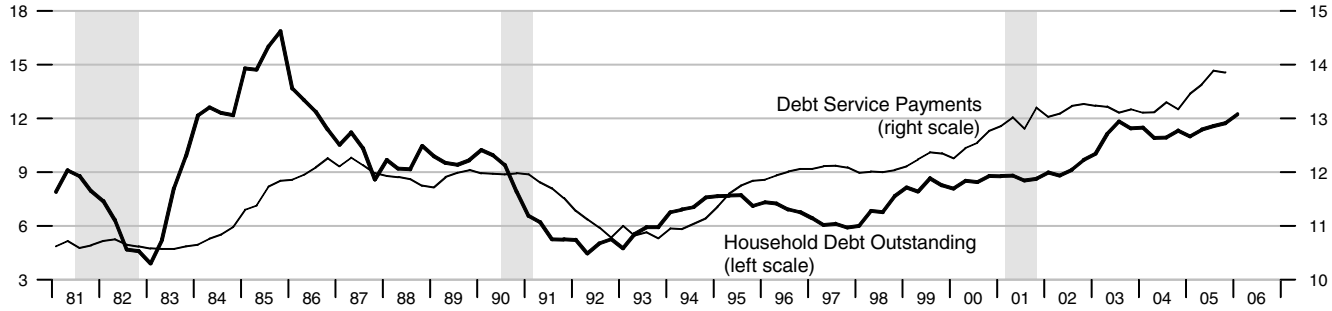


*Data from Jan. 1992 to the present are on a NAICS basis; data prior to Jan. 1992 are on an SIC basis and are not strictly comparable (see End Note).

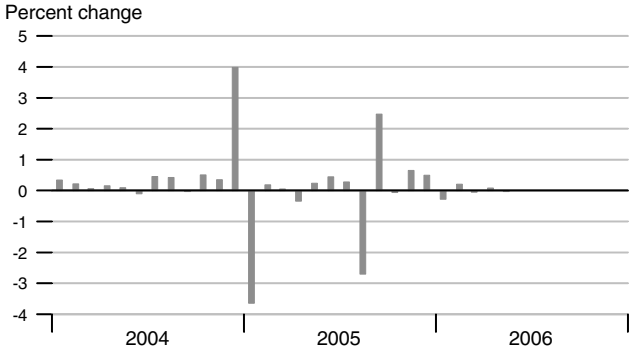
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

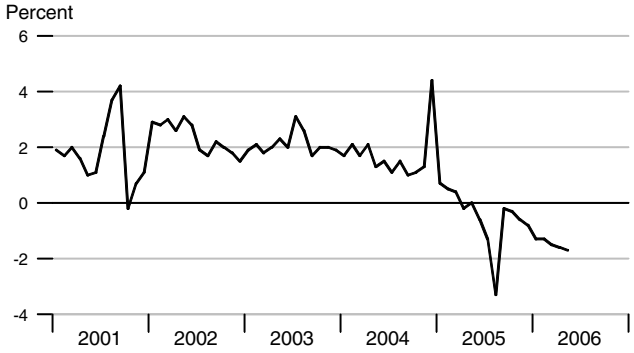
Percent of disposable personal income



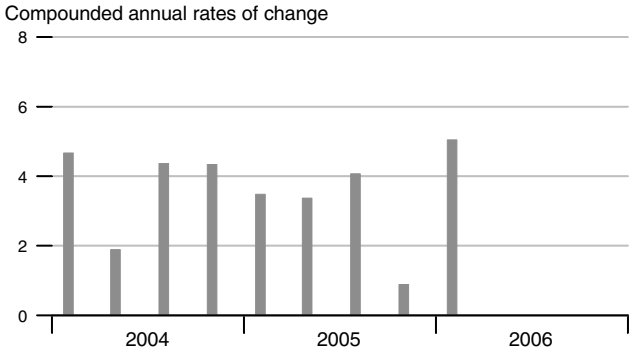
Real Disposable Personal Income



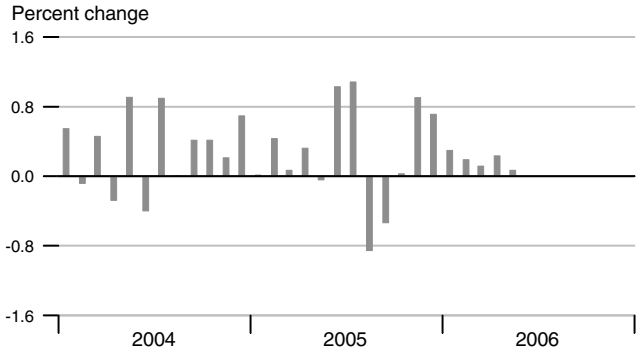
Personal Saving Rate



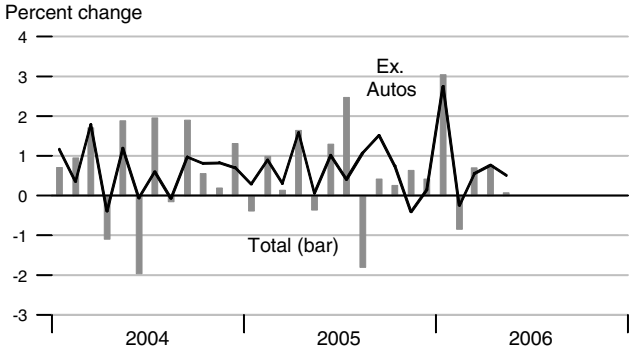
Real Consumption



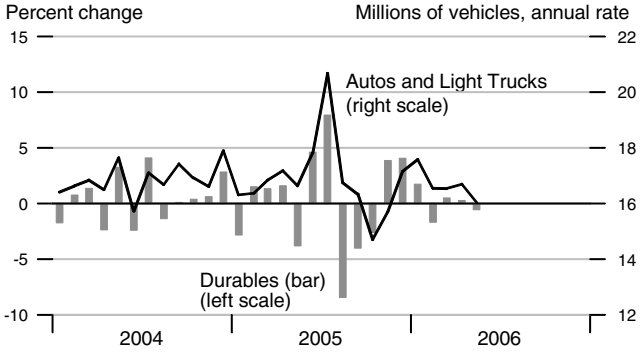
Real Consumption



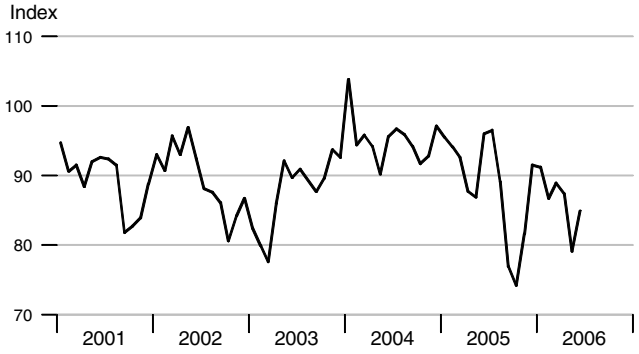
Retail & Food Services



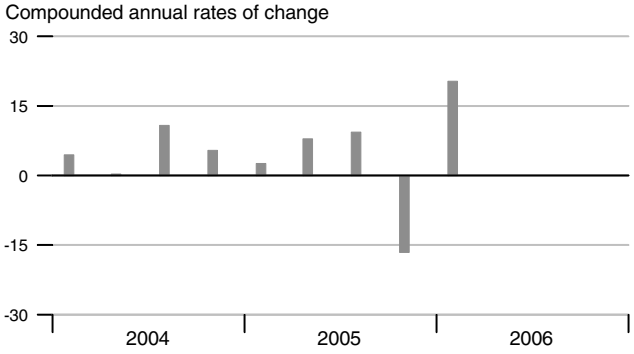
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

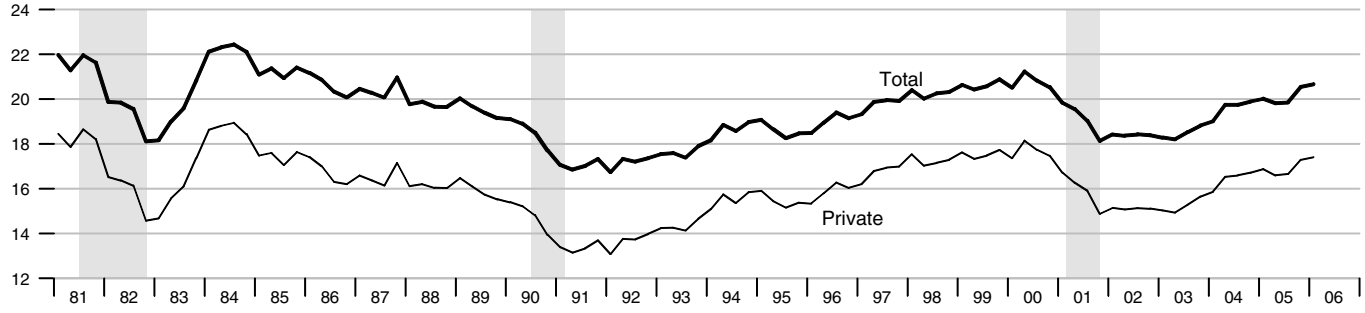


Real Durables Consumption



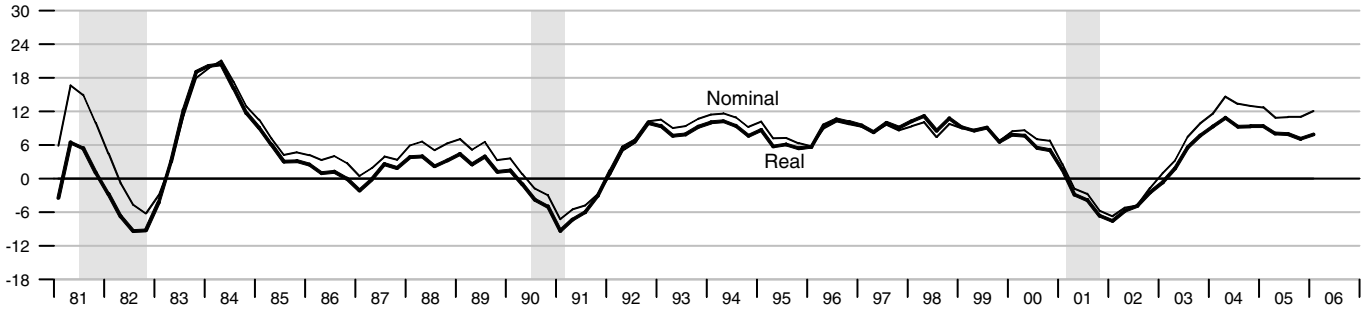
Investment

Percent of nominal GDP



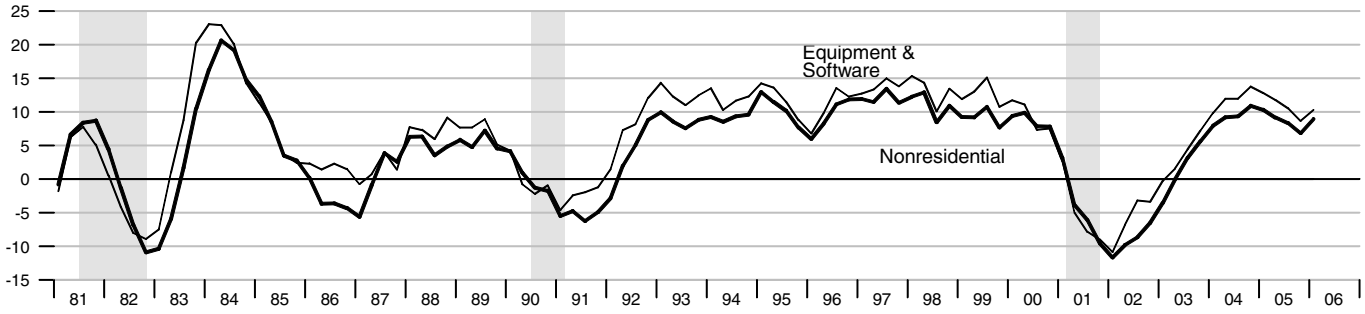
Private Fixed Investment

Percent change from year ago



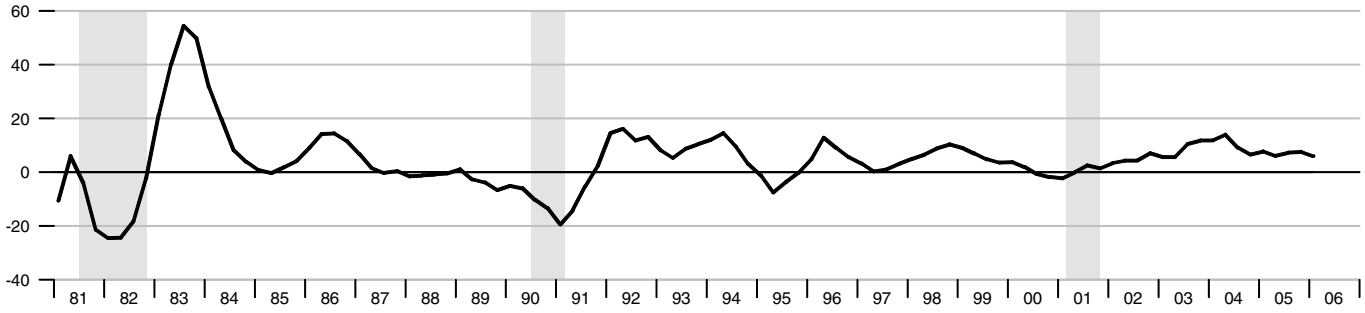
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

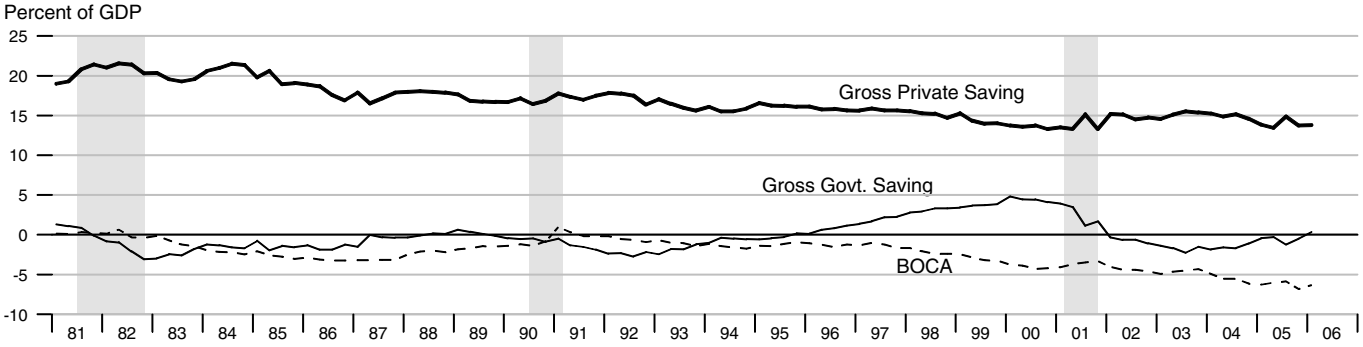


Real Residential Fixed Investment

Percent change from year ago

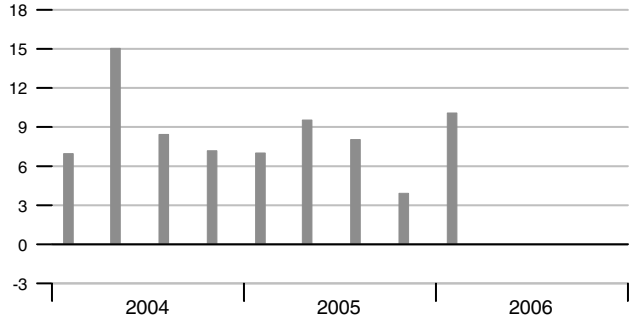


Gross Saving Rates and Balance on Current Account (NIPA)



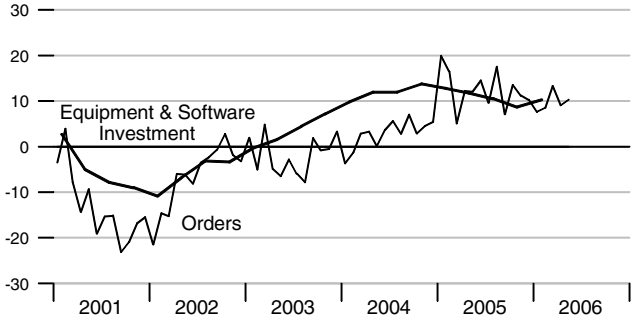
Real Private Fixed Investment

Compounded annual rates of change



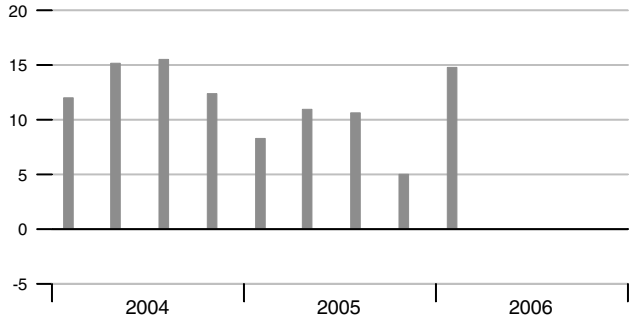
Nondefense Capital Goods Orders

Percent change from year ago, excluding aircraft



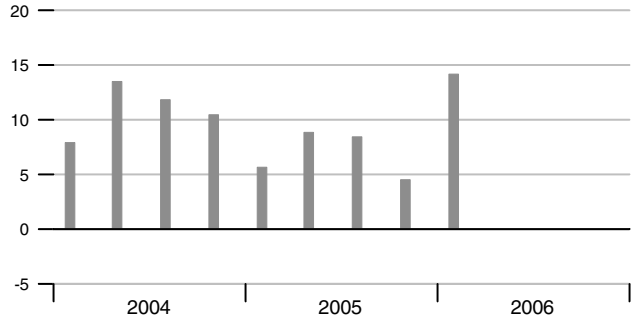
Real Equipment & Software Investment

Compounded annual rates of change



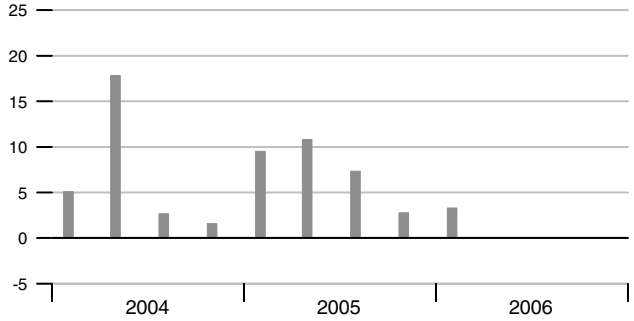
Real Nonresidential Fixed Investment

Compounded annual rates of change



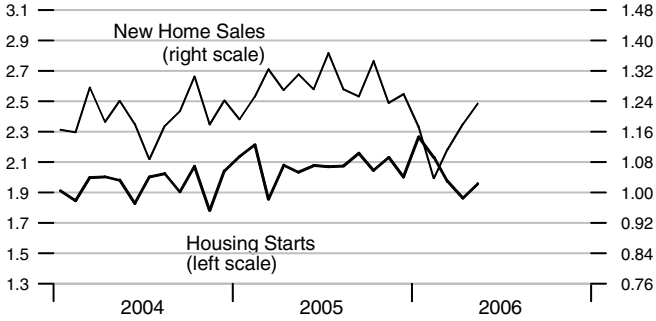
Real Residential Fixed Investment

Compounded annual rates of change

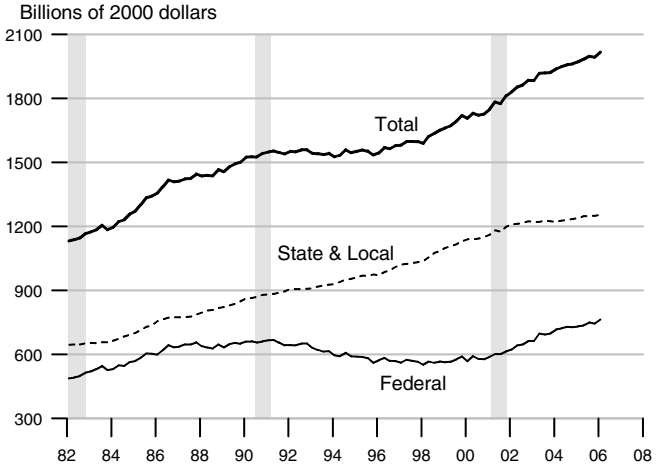


Housing Starts and New Home Sales

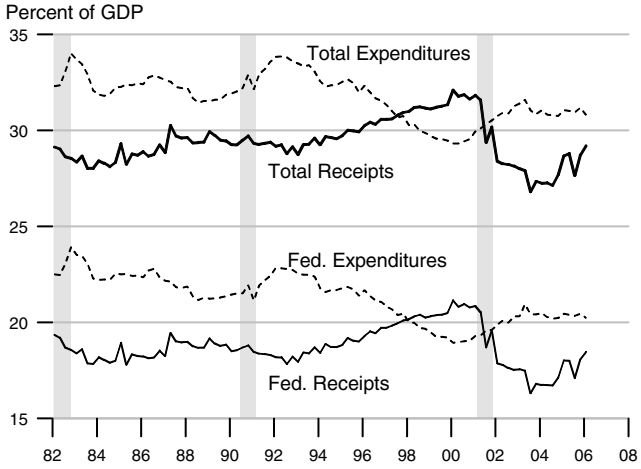
Millions, annual rate | Millions, annual rate



Govt. Consumption and Investment



Govt. Current Receipts and Expenditures



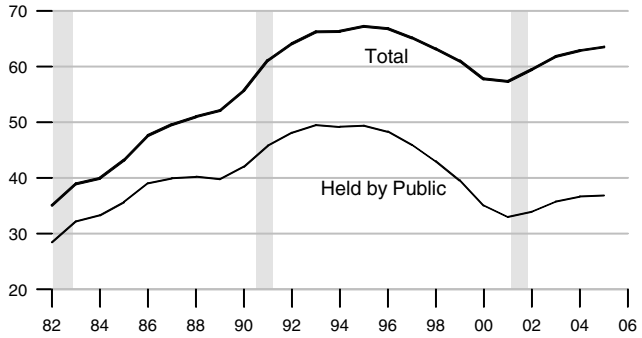
Government Budgets

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	1055.1	1324.3	-269.2
1992	845.7	845.0	0.7	1147.2	1444.6	-297.4	1091.3	1381.6	-290.3
1993	886.9	886.0	0.9	1222.5	1496.0	-273.5	1154.5	1409.5	-255.1
1994	942.9	932.4	10.5	1320.8	1533.1	-212.3	1258.7	1461.9	-203.2
1995	990.2	978.2	12.0	1406.5	1603.5	-197.0	1351.9	1515.9	-164.0
1996	1043.3	1017.5	25.8	1524.0	1665.8	-141.8	1453.2	1560.6	-107.4
1997	1097.4	1058.3	39.1	1653.1	1708.9	-55.8	1579.4	1601.3	-21.9
1998	1163.2	1111.2	52.0	1773.8	1734.9	38.9	1722.0	1652.7	69.3
1999	1236.7	1186.3	50.4	1891.2	1787.6	103.6	1827.6	1702.0	125.6
2000	1319.5	1269.5	50.0	2053.8	1864.4	189.4	2025.5	1789.2	236.2
2001	1373.0	1368.2	4.8	2016.2	1969.5	46.7	1991.4	1863.2	128.2
2002	1410.1	1444.3	-34.2	1853.2	2101.1	-247.9	1853.4	2011.2	-157.8
2003	1488.6	1512.4	-23.8	1868.6	2251.4	-382.8	1782.5	2160.1	-377.6
2004	1581.7	1587.5	-5.8	1974.8	2381.3	-406.5	1880.3	2293.0	-412.7
2005	1689.4	1686.4	3.0	2221.9	2548.4	-326.5	2153.9	2472.2	-318.3
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	2155.8	2563.7	-407.9	549.2	618.2	-69.0
2005Q4	1721.5	1731.7	-10.2	2307.3	2610.0	-302.7	530.2	649.5	-119.3
2006Q1	1750.5	1729.1	21.4	2407.0	2638.1	-231.1	507.4	691.1	-183.7

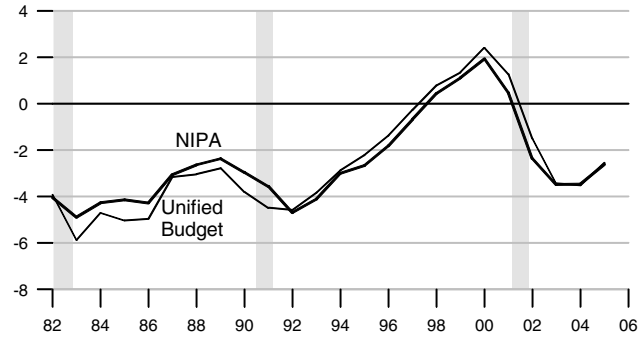
Federal Debt

Percent of GDP



Federal Surplus (+) / Deficit (-)

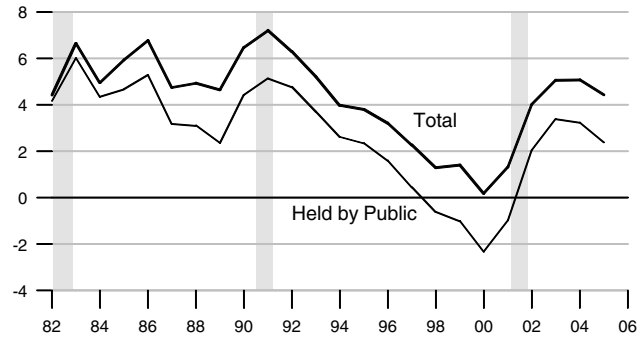
Percent of GDP



NIPA: Net government saving.

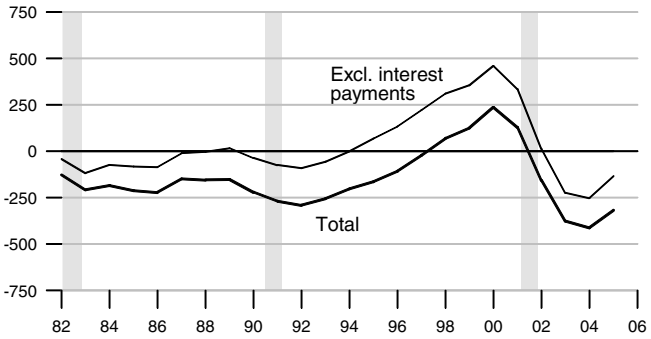
Change in Federal Debt

Percent of GDP



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

Billions of dollars, fiscal years

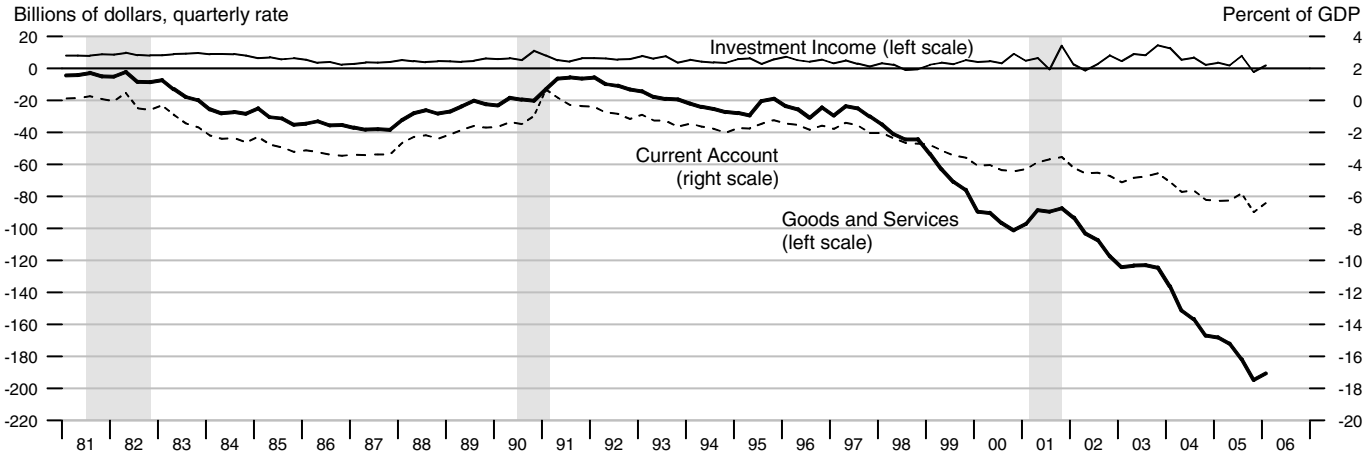


Federal Government Debt

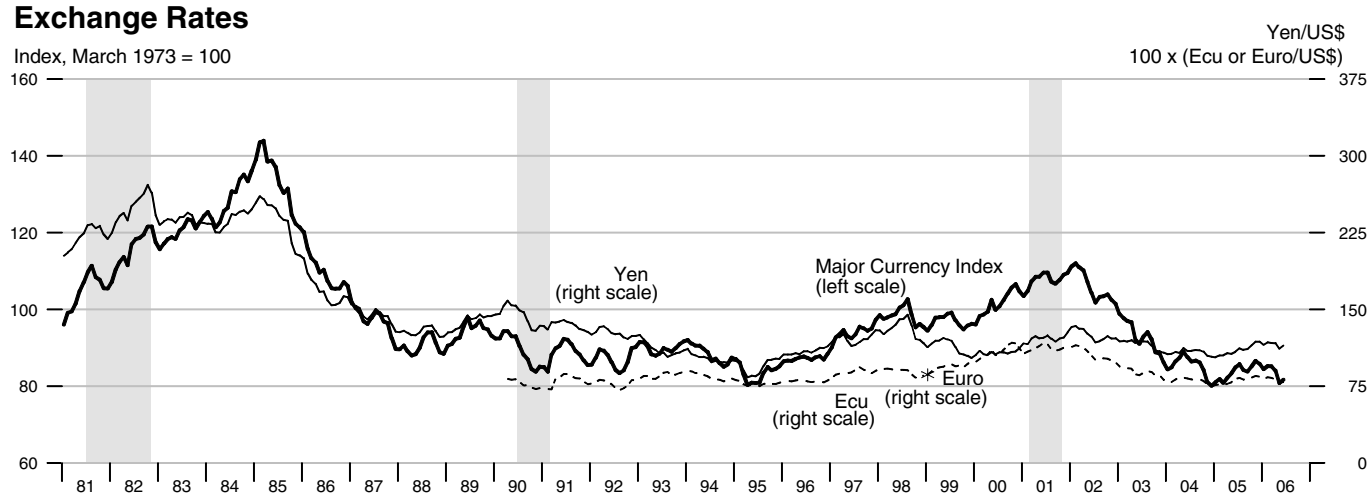
Billions of dollars, end of month or fiscal year
Excludes Agency-issued debt

		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	1798.7
2005		7932.7	3331.3	4601.4	733.4	3864.9	1933.4
2003	March	6460.8	2750.0	3710.8	641.5	3069.9	1286.5
	June	6670.1	2853.8	3816.3	652.1	3164.7	1382.8
	September	6783.2	2859.3	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	1739.6
	September	7379.1	3075.7	4303.4	700.3	3607.0	1798.7
	December	7596.1	3189.8	4406.4	717.8	3667.1	1863.4
2005	March	7776.9	3204.5	4572.4	715.0	3855.4	1956.9
	June	7836.5	3308.9	4527.6	721.9	3803.0	1879.6
	September	7932.7	3331.3	4601.4	733.4	3864.9	1933.4
	December	8170.4	3455.8	4714.6	732.9	3970.6	2041.1
2006	March	8371.1	3198.4	4872.8	755.2	4114.0	2089.2

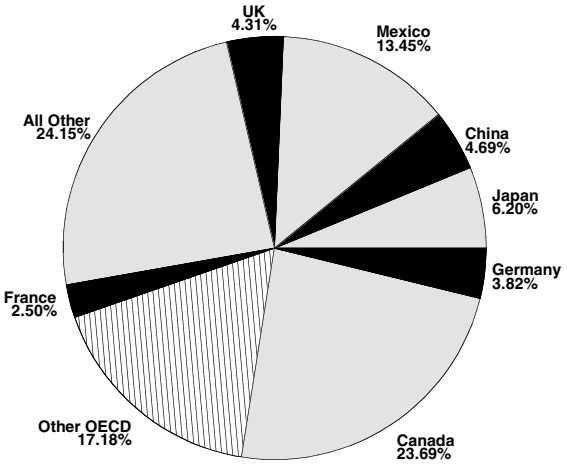
Current Account, Trade and Investment Income Balances



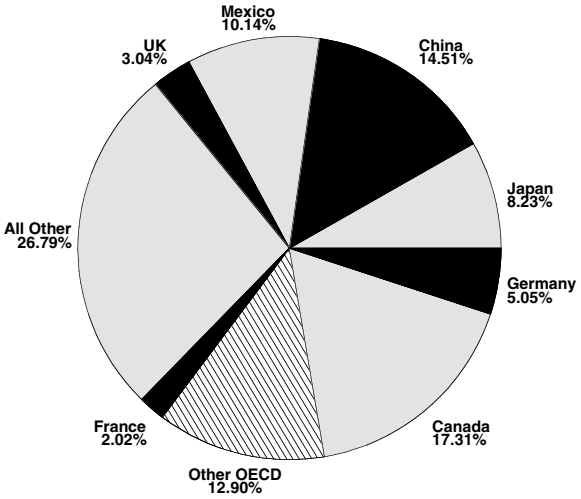
Exchange Rates



Goods Export Shares, 2005

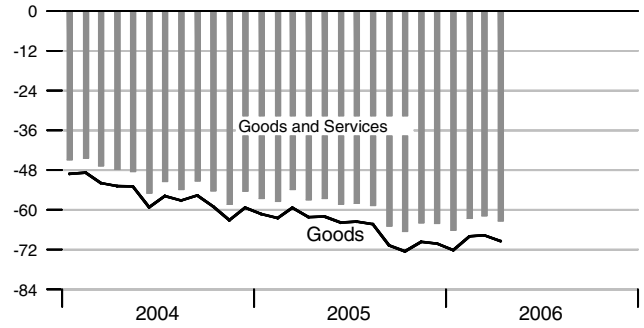


Goods Import Shares, 2005



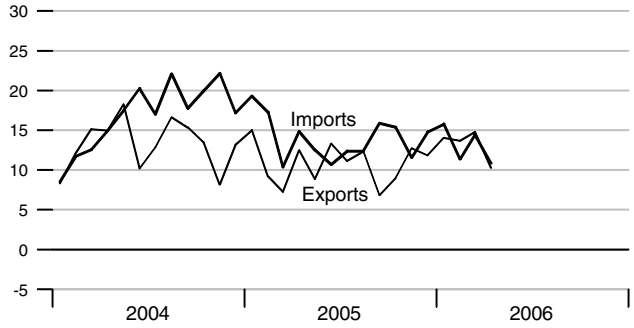
Trade Balance

Billions of dollars



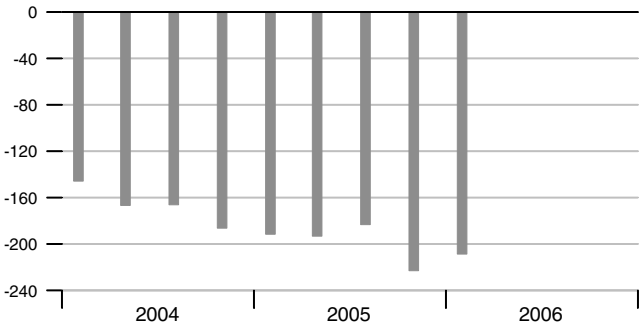
Goods Trade

Percent change from year ago



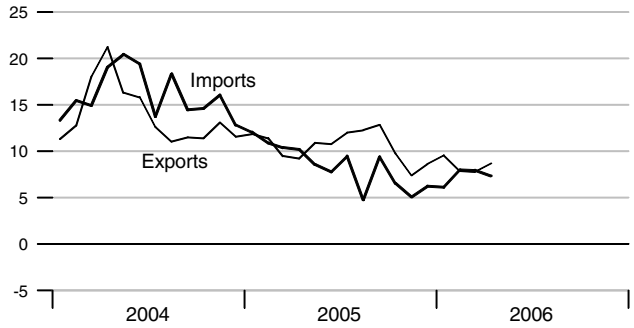
Current Account Balance

Billions of dollars



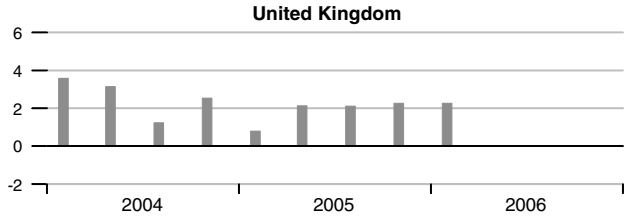
Services Trade

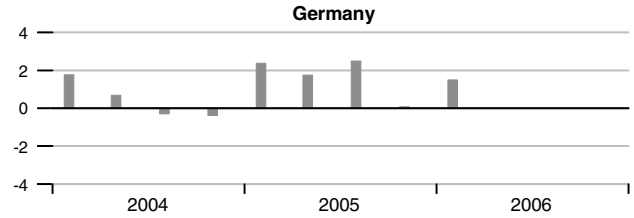
Percent change from year ago

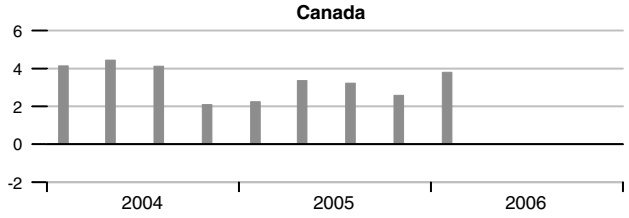


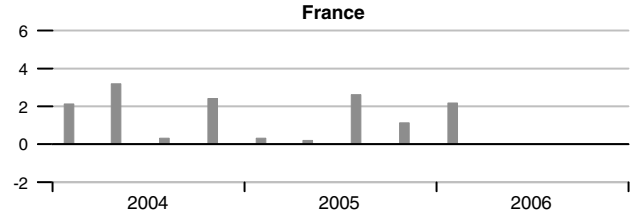
Real GDP Growth of Major Trading Partners

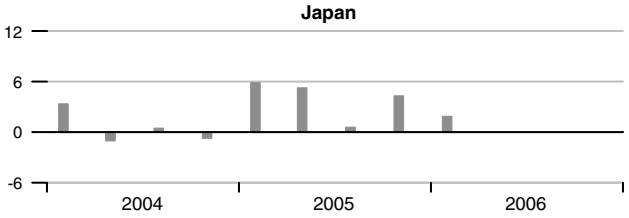
Compounded annual rates of change

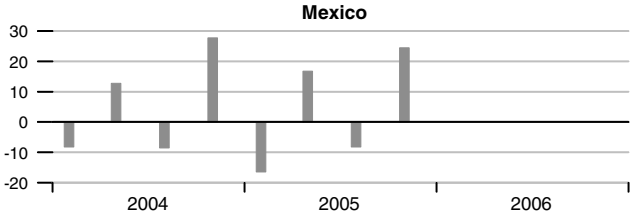




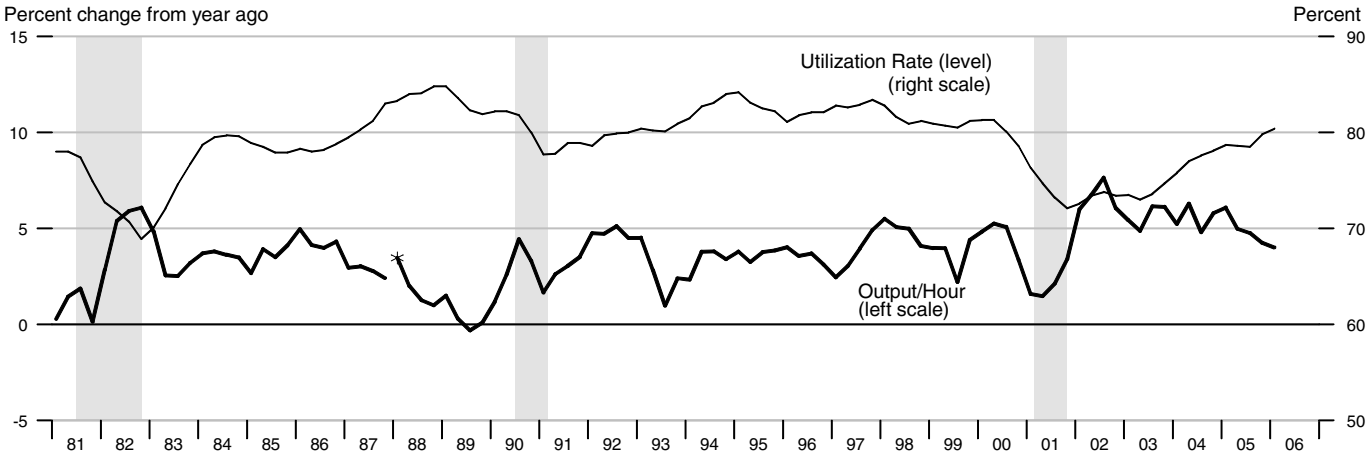






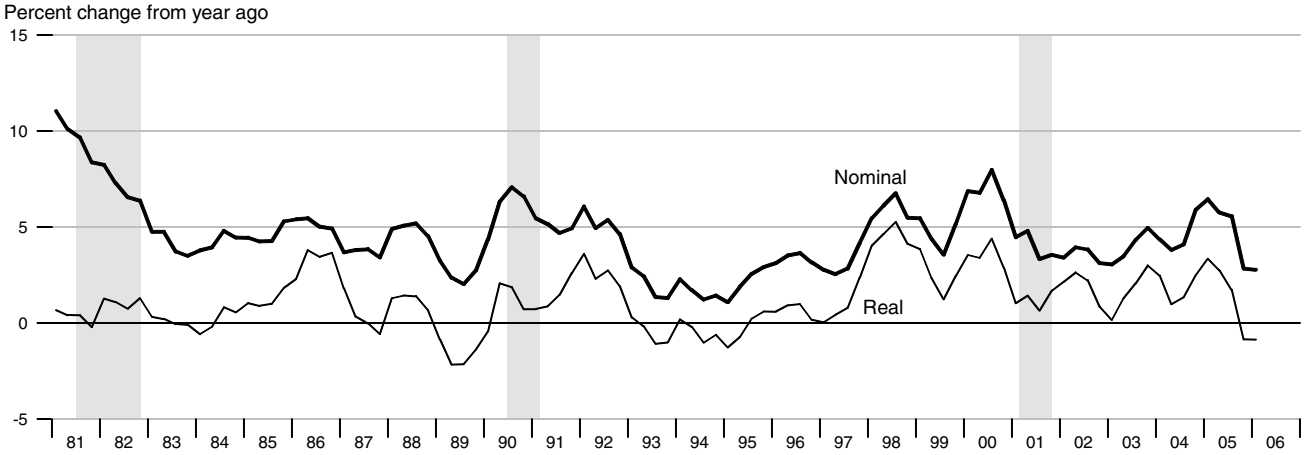


Output per Hour and Capacity Utilization, Manufacturing

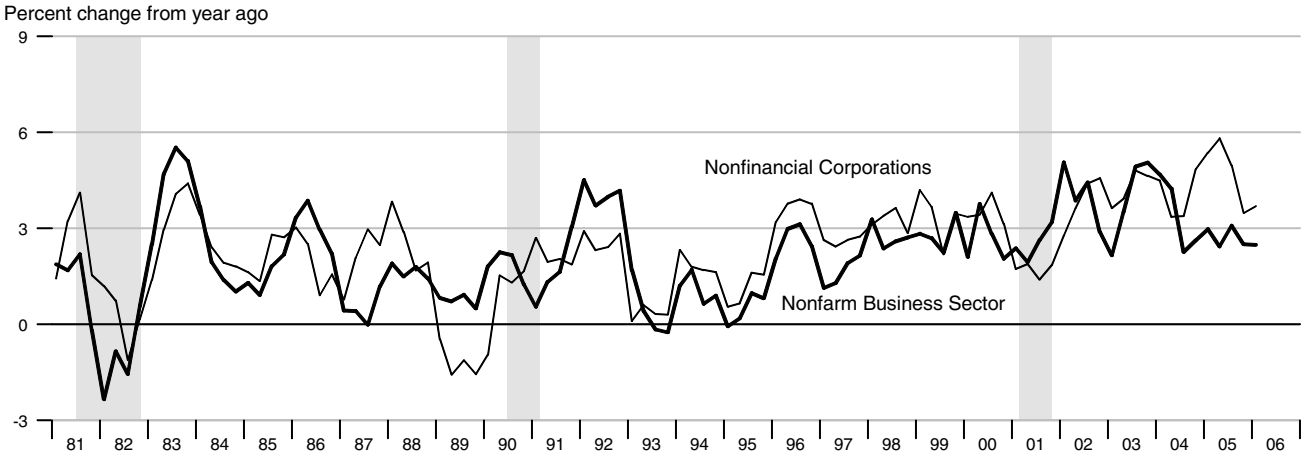


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

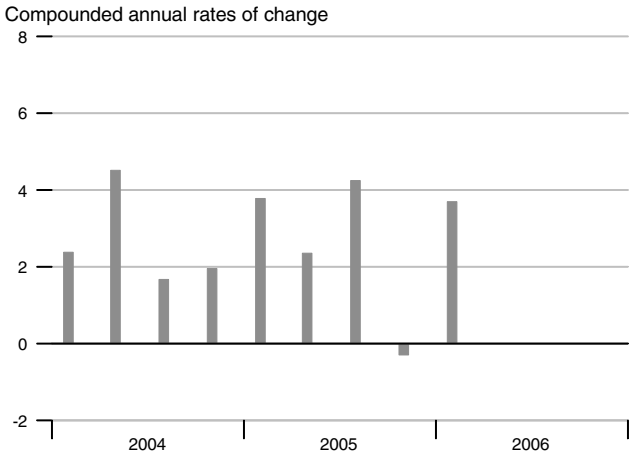
Nonfarm Compensation per Hour



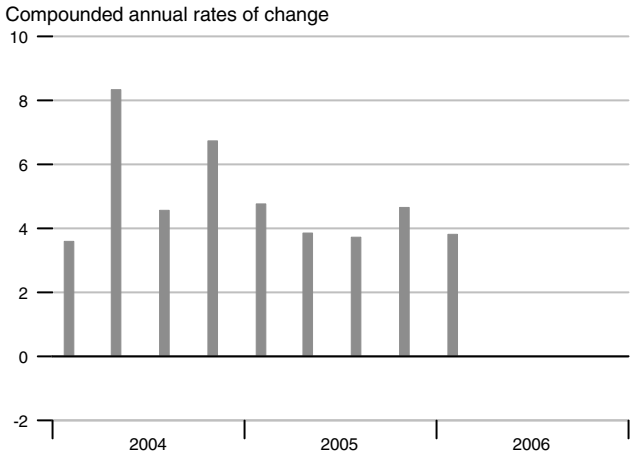
Output per Hour, Nonfarm Business and Nonfinancial Corporations



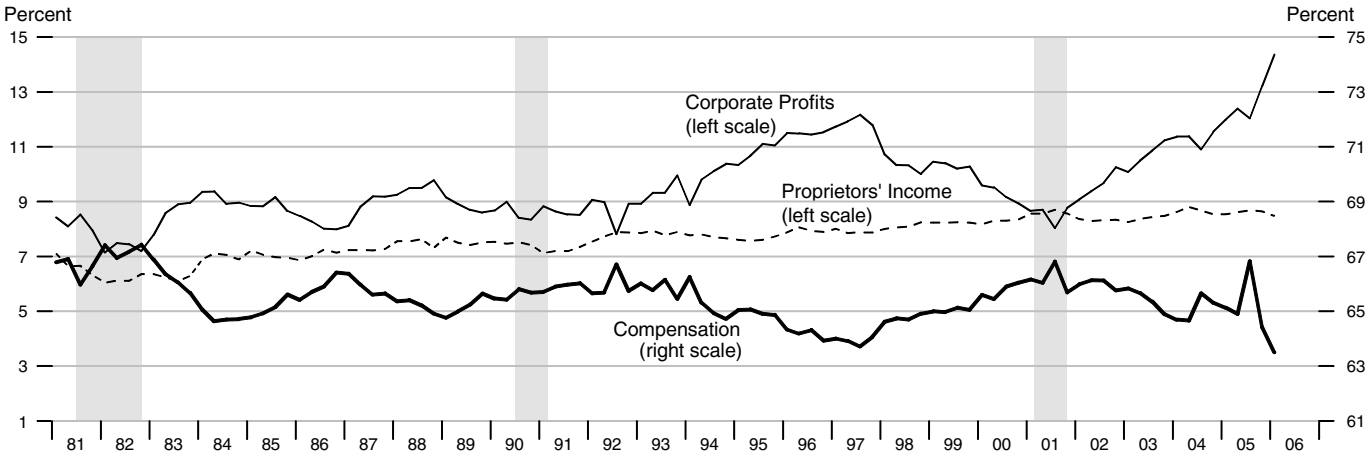
Nonfarm Output per Hour



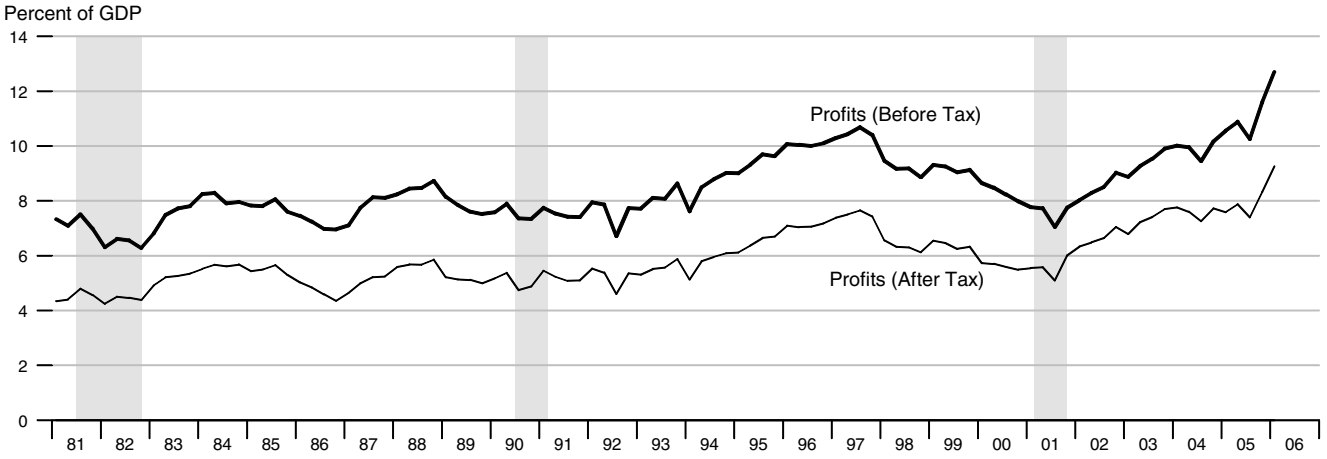
Manufacturing Output per Hour



Selected Component Shares of National Income



Corporate Profits



	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories	
		Percent change			Percent change			Percent change		Billions of 2000 $	
	Billions of $	Annual rate	Year ago	Billions of 2000 $	Annual rate	Year ago	Billions of 2000 $	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	12487.1		6.4	11134.774		3.5	11112.841		3.8		20.283
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	12766.1	5.2	6.4	11248.283	1.7	3.2	11207.469	-0.2	3.3	37.944	20.283
2006 1	13042.3	8.9	6.9	11403.588	5.6	3.7	11369.688	5.9	3.9	29.476	13.111

	Consumption			Durables Consumption			Private Fixed Investment			Nonresidential Fixed Investment		
		Percent change			Percent change			Percent change			Percent change	
	Billions of 2000 $	Annual rate	Year ago	Billions of 2000 $	Annual rate	Year ago	Billions of 2000 $	Annual rate	Year ago	Billions of 2000 $	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	7856.919		3.5	1138.421		4.5	1897.079		8.1	1289.027		8.6
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	7925.374	0.9	2.9	1117.731	-16.6	0.2	1939.956	3.9	7.1	1319.748	4.5	6.9
2006 1	8023.634	5.1	3.3	1170.644	20.3	4.3	1987.236	10.1	7.9	1364.177	14.2	8.9

	GDP Chain Price Index			Employment Cost Index			ECI: Wages			ECI: Benefits		
		Percent change			Percent change			Percent change			Percent change	
	Index	Annual rate	Year ago	Index	Annual rate	Year ago	Index	Annual rate	Year ago	Index	Annual rate	Year ago
2002	104.193		1.7	89.3		3.5	91.6		3.2	83.7		4.5
2003	106.310		2.0	92.7		3.8	94.2		2.8	88.8		6.1
2004	109.102		2.6	96.2		3.8	96.8		2.7	94.8		6.8
2005	112.176		2.8	99.2		3.1	99.2		2.5	99.2		4.6
2003 1	105.724	3.1	2.1	91.4	5.4	3.6	93.2	4.0	2.8	87.0	9.7	5.7
2	106.019	1.1	2.0	92.2	3.5	3.5	93.8	2.6	2.5	88.1	5.2	5.8
3	106.500	1.8	2.1	93.2	4.4	4.0	94.7	3.9	2.9	89.4	6.0	6.3
4	106.996	1.9	2.0	93.8	2.6	4.0	95.1	1.7	3.0	90.5	5.0	6.5
2004 1	107.951	3.6	2.1	94.9	4.8	3.8	95.7	2.5	2.7	92.9	11.0	6.8
2	108.976	3.9	2.8	95.8	3.8	3.9	96.4	3.0	2.8	94.4	6.6	7.2
3	109.371	1.5	2.7	96.7	3.8	3.8	97.2	3.4	2.6	95.4	4.3	6.7
4	110.111	2.7	2.9	97.3	2.5	3.7	97.7	2.1	2.7	96.5	4.7	6.6
2005 1	110.950	3.1	2.8	98.2	3.8	3.5	98.3	2.5	2.7	98.0	6.4	5.5
2	111.655	2.6	2.5	98.8	2.5	3.1	98.8	2.1	2.5	98.8	3.3	4.7
3	112.567	3.3	2.9	99.5	2.9	2.9	99.4	2.5	2.3	99.6	3.3	4.4
4	113.532	3.5	3.1	100.2	2.8	3.0	100.1	2.8	2.5	100.4	3.3	4.0
2006 1	114.409	3.1	3.1	100.8	2.4	2.6	100.8	2.8	2.5	100.8	1.6	2.9

	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
		Percent change			Percent change			Percent change			Percent change	
	Billions of 2000 $	Annual rate	Year ago	Billions of 2000 $	Annual rate	Year ago	Index	Annual rate	Year ago	Index	Annual rate	Year ago
2002	1013.293		-2.3	1484.629		3.4	123.134		4.1	144.160		3.6
2003	1031.207		1.8	1552.573		4.6	127.960		3.9	149.869		4.0
2004	1117.879		8.4	1719.187		10.7	132.357		3.4	156.692		4.6
2005	1195.254		6.9	1828.341		6.3	135.988		2.7	164.717		5.1
2003 1	1009.709	-2.9	1.7	1520.372	-2.5	6.0	124.976	3.8	2.2	147.021	5.9	3.1
2	1004.457	-2.1	-1.3	1532.901	3.3	3.8	126.903	6.3	3.5	149.243	6.2	3.5
3	1032.248	11.5	0.7	1548.412	4.1	3.4	129.893	9.8	4.9	151.088	5.0	4.3
4	1078.445	19.1	6.0	1608.623	16.5	5.1	130.062	0.5	5.0	152.123	2.8	5.0
2004 1	1091.798	5.0	8.1	1654.829	12.0	8.8	130.828	2.4	4.7	153.416	3.4	4.3
2	1110.194	6.9	10.5	1711.867	14.5	11.7	132.280	4.5	4.2	154.927	4.0	3.8
3	1125.027	5.5	9.0	1731.480	4.7	11.8	132.829	1.7	2.3	157.285	6.2	4.1
4	1144.496	7.1	6.1	1778.556	11.3	10.6	133.472	2.0	2.6	161.096	10.0	5.9
2005 1	1165.293	7.5	6.7	1810.728	7.4	9.4	134.715	3.8	3.0	163.307	5.6	6.4
2	1195.353	10.7	7.7	1809.577	-0.3	5.7	135.500	2.4	2.4	163.843	1.3	5.8
3	1202.731	2.5	6.9	1820.202	2.4	5.1	136.915	4.2	3.1	166.040	5.5	5.6
4	1217.640	5.1	6.4	1872.858	12.1	5.3	136.814	-0.3	2.5	165.666	-0.9	2.8
2006 1	1260.209	14.7	8.1	1921.071	10.7	6.1	138.062	3.7	2.5	167.837	5.3	2.8

		Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
				Percent change				Percent change			Percent change		
		Thousands	Change	Annual rate	Year ago	Thousands	Change	Annual rate	Year ago	Index	Monthly rate	Annual rate	Year ago
2001		136939	39		0.0	131832	40		0.0	102.0			-1.4
2002		136480	-459		-0.3	130342	-1490		-1.1	100.0			-2.0
2003		137731	1251		0.9	129993	-349		-0.3	98.6			-1.4
2004		139244	1513		1.1	131424	1431		1.1	100.2			1.6
2005		141719	2475		1.8	133459	2035		1.5	102.6			2.4
2004	1	138473	193	0.6	0.7	130572	382	1.2	0.4	99.2	0.4	1.6	0.2
	2	138894	421	1.2	0.9	131277	705	2.2	1.1	99.9	0.7	2.7	1.6
	3	139548	654	1.9	1.5	131602	325	1.0	1.4	100.5	0.6	2.6	2.3
	4	140059	511	1.5	1.3	132244	642	2.0	1.6	101.1	0.6	2.4	2.3
2005	1	140373	314	0.9	1.4	132694	450	1.4	1.6	101.6	0.4	1.7	2.4
	2	141506	1132	3.3	1.9	133230	536	1.6	1.5	102.3	0.8	3.1	2.4
	3	142324	818	2.3	2.0	133750	520	1.6	1.6	102.9	0.6	2.2	2.4
	4	142672	348	1.0	1.9	134161	412	1.2	1.4	103.4	0.5	2.1	2.3
2006	1	143324	652	1.8	2.1	134722	560	1.7	1.5	104.2	0.7	3.0	2.6
2004	May	138843	184	1.6	0.9	131340	267	2.5	1.2	100.3	0.7	8.8	1.8
	Jun	139181	338	3.0	1.0	131418	78	0.7	1.2	99.8	-0.5	-5.8	1.6
	Jul	139591	410	3.6	1.5	131456	38	0.3	1.3	100.3	0.5	6.2	2.1
	Aug	139558	-33	-0.3	1.5	131587	131	1.2	1.4	100.4	0.1	1.2	2.2
	Sep	139495	-63	-0.5	1.4	131764	177	1.6	1.4	100.9	0.5	6.1	2.5
	Oct	139768	273	2.4	1.3	132102	338	3.1	1.5	100.9	0.0	0.0	2.1
	Nov	140276	508	4.4	1.3	132235	133	1.2	1.6	101.0	0.1	1.2	1.9
	Dec	140133	-143	-1.2	1.3	132395	160	1.5	1.6	101.5	0.5	6.1	2.9
2005	Jan	140234	101	0.9	1.3	132471	76	0.7	1.6	101.3	-0.2	-2.3	2.3
	Feb	140285	51	0.4	1.3	132736	265	2.4	1.7	101.6	0.3	3.6	2.2
	Mar	140601	316	2.7	1.6	132876	140	1.3	1.6	101.8	0.2	2.4	2.5
	Apr	141196	595	5.2	1.8	133104	228	2.1	1.5	102.4	0.6	7.3	2.8
	May	141571	375	3.2	2.0	133210	106	1.0	1.4	102.2	-0.2	-2.3	1.9
	Jun	141750	179	1.5	1.8	133376	166	1.5	1.5	102.4	0.2	2.4	2.6
	Jul	142111	361	3.1	1.8	133617	241	2.2	1.6	102.9	0.5	6.0	2.6
	Aug	142425	314	2.7	2.1	133792	175	1.6	1.7	102.7	-0.2	-2.3	2.3
	Sep	142435	10	0.1	2.1	133840	48	0.4	1.6	103.1	0.4	4.8	2.2
	Oct	142625	190	1.6	2.0	133877	37	0.3	1.3	103.1	0.0	0.0	2.2
	Nov	142611	-14	-0.1	1.7	134231	354	3.2	1.5	103.5	0.4	4.8	2.5
	Dec	142779	168	1.4	1.9	134376	145	1.3	1.5	103.7	0.2	2.3	2.2
2006	Jan	143074	295	2.5	2.0	134530	154	1.4	1.6	104.0	0.3	3.5	2.7
	Feb	143257	183	1.5	2.1	134730	200	1.8	1.5	104.2	0.2	2.3	2.6
	Mar	143641	384	3.3	2.2	134905	175	1.6	1.5	104.4	0.2	2.3	2.6
	Apr	143688	47	0.4	1.8	135031	126	1.1	1.4	104.8	0.4	4.7	2.3
	May	143976	288	2.4	1.7	135106	75	0.7	1.4	104.6	-0.2	-2.3	2.3

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields (Percent)	
			Billions of dollars	Percent change Monthly/ quarterly	Percent change Annual rate	Percent change Year ago	Index	Percent change Monthly/ quarterly	Percent change Annual rate	Percent change Year ago	3-mo	10-yr
2001		4.7	3385.830			2.9	99.8784			-3.5	3.39	5.02
2002		5.8	3467.083			2.4	100.0000			0.1	1.60	4.61
2003		6.0	3614.287			4.2	100.6244			0.6	1.01	4.02
2004		5.5	3836.987			6.2	104.7252			4.1	1.37	4.27
2005		5.1	4111.595			7.2	108.0621			3.2	3.15	4.29
2004	1	5.7	938.788	2.0	8.3	6.1	103.1294	1.3	5.3	2.6	0.92	4.02
	2	5.6	947.407	0.9	3.7	6.2	104.4460	1.3	5.2	4.8	1.08	4.60
	3	5.4	964.134	1.8	7.3	5.1	105.1248	0.6	2.6	4.6	1.49	4.30
	4	5.4	986.658	2.3	9.7	7.2	106.2005	1.0	4.2	4.3	2.01	4.17
2005	1	5.2	998.909	1.2	5.1	6.4	107.2067	0.9	3.8	4.0	2.54	4.30
	2	5.1	1021.427	2.3	9.3	7.8	107.6359	0.4	1.6	3.1	2.86	4.16
	3	5.0	1043.116	2.1	8.8	8.2	108.0066	0.3	1.4	2.7	3.36	4.21
	4	4.9	1048.143	0.5	1.9	6.2	109.3991	1.3	5.3	3.0	3.83	4.49
2006	1	4.7	1081.608	3.2	13.4	8.3	110.8076	1.3	5.3	3.4	4.39	4.57
	2										4.70	5.07
2004	Jun	5.6	313.578	-2.0	-21.2	4.9	104.3773	-0.6	-6.4	4.6	1.27	4.73
	Jul	5.5	319.699	2.0	26.1	5.3	104.9954	0.6	7.3	4.7	1.33	4.50
	Aug	5.4	319.188	-0.2	-1.9	3.5	105.3165	0.3	3.7	4.9	1.48	4.28
	Sep	5.4	325.247	1.9	25.3	6.4	105.0624	-0.2	-2.9	4.0	1.65	4.13
	Oct	5.4	327.054	0.6	6.9	7.4	105.8234	0.7	9.0	4.7	1.76	4.10
	Nov	5.4	327.663	0.2	2.3	6.2	106.0348	0.2	2.4	3.9	2.07	4.19
	Dec	5.4	331.941	1.3	16.8	8.1	106.7432	0.7	8.3	4.4	2.19	4.23
2005	Jan	5.2	330.643	-0.4	-4.6	6.9	106.9478	0.2	2.3	4.2	2.33	4.22
	Feb	5.4	333.908	1.0	12.5	7.0	107.3608	0.4	4.7	3.7	2.54	4.17
	Mar	5.1	334.358	0.1	1.6	5.3	107.3115	-0.0	-0.5	4.0	2.74	4.50
	Apr	5.1	339.841	1.6	21.6	8.2	107.1838	-0.1	-1.4	3.1	2.78	4.34
	May	5.1	338.604	-0.4	-4.3	5.9	107.4337	0.2	2.8	2.4	2.84	4.14
	Jun	5.0	342.982	1.3	16.7	9.4	108.2903	0.8	10.0	3.7	2.97	4.00
	Jul	5.0	351.454	2.5	34.0	9.9	108.2725	-0.0	-0.2	3.1	3.22	4.18
	Aug	4.9	345.111	-1.8	-19.6	8.1	108.5868	0.3	3.5	3.1	3.44	4.26
	Sep	5.1	346.551	0.4	5.1	6.6	107.1604	-1.3	-14.7	2.0	3.42	4.20
	Oct	4.9	347.443	0.3	3.1	6.2	108.3814	1.1	14.6	2.4	3.71	4.46
	Nov	5.0	349.630	0.6	7.8	6.7	109.3877	0.9	11.7	3.2	3.88	4.54
	Dec	4.9	351.070	0.4	5.1	5.8	110.4282	1.0	12.0	3.5	3.89	4.47
2006	Jan	4.7	361.743	3.0	43.2	9.4	110.3486	-0.1	-0.9	3.2	4.24	4.42
	Feb	4.8	358.675	-0.8	-9.7	7.4	110.7354	0.4	4.3	3.1	4.43	4.57
	Mar	4.7	361.190	0.7	8.7	8.0	111.3389	0.5	6.7	3.8	4.51	4.72
	Apr	4.7	363.943	0.8	9.5	7.1	112.1919	0.8	9.6	4.7	4.60	4.99
	May	4.6	364.198	0.1	0.8	7.6	112.0991	-0.1	-1.0	4.3	4.72	5.11
	Jun										4.79	5.11

		Consumer Price Index					Consumer Price Index less Food and Energy					Producer Price Index Finished Goods			
			Percent change					Percent change					Percent change		
		Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago
2001		177.0			2.8		186.1			2.7		140.7			1.9
2002		179.9			1.6		190.5			2.3		138.9			-1.3
2003		184.0			2.3		193.2			1.4		143.3			3.2
2004		188.9			2.7		196.6			1.8		148.5			3.6
2005		195.3			3.4		200.9			2.2		155.7			4.9
2004	1	186.6	0.9	3.7	1.8	3.7	194.9	0.4	1.8	1.3	1.8	145.9	0.7	2.9	2.3
	2	188.4	1.0	4.1	2.8	3.9	196.2	0.7	2.7	1.8	2.2	148.2	1.6	6.5	4.1
	3	189.4	0.5	2.1	2.7	3.3	197.1	0.5	1.8	1.8	2.1	148.5	0.2	0.9	3.5
	4	191.1	0.9	3.5	3.3	3.3	198.2	0.6	2.3	2.1	2.1	151.5	2.0	8.3	4.6
2005	1	192.2	0.6	2.5	3.0	2.5	199.5	0.6	2.5	2.3	2.5	152.6	0.7	2.8	4.6
	2	194.0	0.9	3.7	3.0	3.1	200.4	0.5	2.0	2.1	2.2	154.2	1.1	4.4	4.1
	3	196.6	1.4	5.5	3.8	3.9	201.2	0.4	1.6	2.1	2.0	156.7	1.6	6.5	5.5
	4	198.2	0.8	3.2	3.7	3.7	202.4	0.6	2.4	2.1	2.1	159.4	1.8	7.3	5.2
2006	1	199.3	0.6	2.2	3.7	2.2	203.6	0.6	2.4	2.1	2.4	159.2	-0.2	-0.7	4.3
2004	May	188.6	0.6	7.3	2.9	4.6	196.2	0.2	1.9	1.7	2.5	148.6	0.8	10.2	4.7
	Jun	189.2	0.3	3.9	3.2	4.5	196.6	0.2	2.5	1.9	2.5	148.5	-0.1	-0.8	4.1
	Jul	189.2	0.0	0.0	2.9	3.8	196.8	0.1	1.2	1.8	2.3	148.4	-0.1	-0.8	3.9
	Aug	189.4	0.1	1.3	2.7	3.5	197.0	0.1	1.2	1.8	2.2	148.5	0.1	0.8	3.4
	Sep	189.7	0.2	1.9	2.5	3.3	197.6	0.3	3.7	2.0	2.3	148.6	0.1	0.8	3.3
	Oct	190.8	0.6	7.2	3.2	3.7	197.9	0.2	1.8	2.0	2.3	150.8	1.5	19.3	4.3
	Nov	191.2	0.2	2.5	3.5	3.6	198.3	0.2	2.5	2.2	2.3	152.2	0.9	11.7	5.2
	Dec	191.2	0.0	0.0	3.3	3.3	198.5	0.1	1.2	2.2	2.2	151.5	-0.5	-5.4	4.3
2005	Jan	191.4	0.1	1.3	3.0	1.3	199.0	0.3	3.1	2.3	3.1	151.7	0.1	1.6	4.1
	Feb	192.1	0.4	4.5	3.0	2.9	199.4	0.2	2.4	2.4	2.8	152.4	0.5	5.7	4.7
	Mar	193.2	0.6	7.1	3.2	4.3	200.0	0.3	3.7	2.4	3.1	153.6	0.8	9.9	5.0
	Apr	194.1	0.5	5.7	3.5	4.6	200.2	0.1	1.2	2.2	2.6	154.4	0.5	6.4	4.7
	May	194.0	-0.1	-0.6	2.9	3.6	200.5	0.1	1.8	2.2	2.4	154.1	-0.2	-2.3	3.7
	Jun	193.9	-0.1	-0.6	2.5	2.8	200.6	0.0	0.6	2.0	2.1	154.2	0.1	0.8	3.8
	Jul	195.1	0.6	7.7	3.1	3.5	201.0	0.2	2.4	2.1	2.2	155.4	0.8	9.7	4.7
	Aug	196.2	0.6	7.0	3.6	3.9	201.2	0.1	1.2	2.1	2.0	156.2	0.5	6.4	5.2
	Sep	198.6	1.2	15.7	4.7	5.2	201.5	0.1	1.8	2.0	2.0	158.4	1.4	18.3	6.6
	Oct	199.1	0.3	3.1	4.4	5.0	202.0	0.2	3.0	2.1	2.1	159.6	0.8	9.5	5.8
	Nov	197.8	-0.7	-7.6	3.5	3.8	202.5	0.2	3.0	2.1	2.2	158.8	-0.5	-5.9	4.3
	Dec	197.7	-0.1	-0.6	3.4	3.4	202.8	0.1	1.8	2.2	2.2	159.9	0.7	8.6	5.5
2006	Jan	199.0	0.7	8.2	4.0	8.2	203.2	0.2	2.4	2.1	2.4	160.3	0.3	3.0	5.7
	Feb	199.1	0.1	0.6	3.6	4.3	203.5	0.1	1.8	2.1	2.1	158.2	-1.3	-14.6	3.8
	Mar	199.8	0.4	4.3	3.4	4.3	204.2	0.3	4.2	2.1	2.8	159.0	0.5	6.2	3.5
	Apr	201.0	0.6	7.5	3.6	5.1	204.8	0.3	3.6	2.3	3.0	160.5	0.9	11.9	4.0
	May	201.9	0.4	5.5	4.1	5.2	205.4	0.3	3.6	2.4	3.1	160.8	0.2	2.3	4.3

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 (± 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 CCAdj (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 (CCAdj)** increase profits and proprietors' income by the difference between estimates of economic depreciation and depreciation allowed by the tax code. Components of national income not shown are rental income of persons and net interest.

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

Sources

Bureau of Economic Analysis (BEA), U.S. Dept. of Commerce
National income and product accounts, international trade and investment data (except by country), auto and light truck sales.

Census Bureau, U.S. Dept. of Commerce
Inventory-sales ratios, retail sales, capital goods orders, housing starts, exports and imports by country.

Bureau of Labor Statistics (BLS), U.S. Dept. of Labor
All employment-related data, employment cost index, consumer and producer price indexes, unit labor cost, output per hour, compensation per hour, multifactor productivity.

United States Department of Treasury
Unified budget receipts, outlays, deficit, debt.

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

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

The Conference Board
Help-wanted advertising index.

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