National Economic Trends

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Metropolitan Growth: Sun Belt vs. Snow Belt

For more than a century, cities in the United States with more skilled residents have grown faster than comparable cities with fewer educated people.[1] The reasons why the relationship between skills and population growth is so persistent are not clearly understood. One explanation proposes that skills (measured by the percentage of residents with a bachelor's degree) foster growth because an educated population is an indicator of favorable quality of life, which attracts more people to a city. An alternative explanation argues that having skilled residents allows cities to grow because educated people adapt more easily to a constantly evolving economy. The latter explanation views skills as a production amenity, whereas the first views skills as a consumption amenity.

Recent evidence suggests that productivity drives most of the connection between skills and growth, especially in metropolitan areas, supporting the production amenity explanation. Economists Edward Glaeser and Albert Saiz have found that education levels have a positive impact on the growth of wages and housing prices, as a result of rising productivity. If skills are merely consumption amenities, they argue, then wages would decline following migration to a city.[2]

Interestingly, the relationship between skills and city growth does not hold among all types of cities. In the latter part of the 20th century, cities with warm and dry climates have dominated the list of the fastest growing metropolitan areas, in terms of both population and employment growth.[3] A favorable climate, especially since the advent of air conditioning, seems to have spurred growth in such areas without relying on a high level of education in the local population. The correlation between skills and growth, however, seems to be more important in cold and wet metropolitan areas (the Snow Belt) than in warm and dry locations (the Sun Belt).

The chart presents the correlation between the fraction of residents aged 25 years or older with college degrees as of 1990 and population growth in 155 Snow Belt metropolitan areas over the 1990-2000 decade. The correlation between skills and population growth is 0.52 and the relationship is statistically significant. The line of best fit in the chart suggests that, as the fraction of people with bachelor's degrees increases by 1 percent, population growth in the following decade increases by 1.2 percent. A similar exercise among Sun Belt metropolitan areas reveals no significant correlation between skill levels and subsequent population growth, perhaps, in part, because the Sun Belt receives a disproportionate share of the immigrant population. The same pattern arises if, instead of population growth, one examines employment growth, as measured by the change in the number of employed civilians aged 16 years or older. The correlation between employment growth in the 1990s in Snow Belt metropolitan areas and the initial level of skills is 0.39, whereas the correlation is only 0.03 in Sun Belt metropolitan areas.

One caveat—which we can call the Las Vegas explanation—is that relatively low-skilled service workers comprise a large share of a Sun Belt metropolitan area's permanent population, even though the share of college-educated people in the city at any given time—including tourists and snowbirds—may be actually quite high.

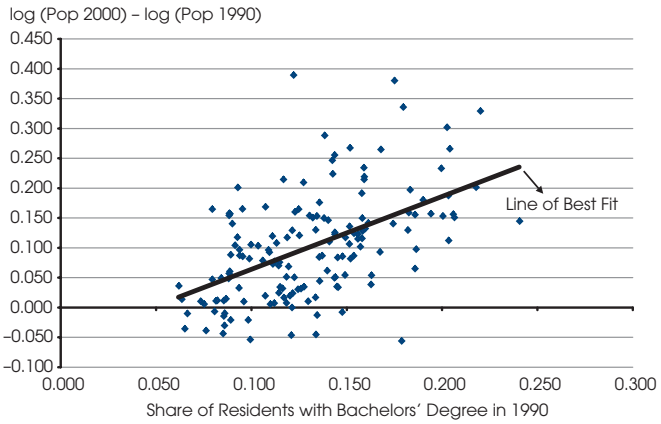
—Rubén Hernández-Murillo

[1] Glaeser, Edward L. "Why Does Schooling Generate Economic Growth?" *Economics Letters*, 1994, *44*(3), pp. 333-37.

[2] Glaeser, Edward L. and Saiz, Albert. "The Rise of the Skilled City." NBER Working Paper No. 10191, National Bureau of Economic Research, 2003.

[3] Bureau of Labor Statistics. "Warm Areas Continue Hottest Job Growth." *Issues in Labor Statistics*, May 1997.

Population Growth in Cold MSAs
(Average January Temperature under 40 F in 1961-90)



NOTE: Data are from the U.S. Census Bureau.

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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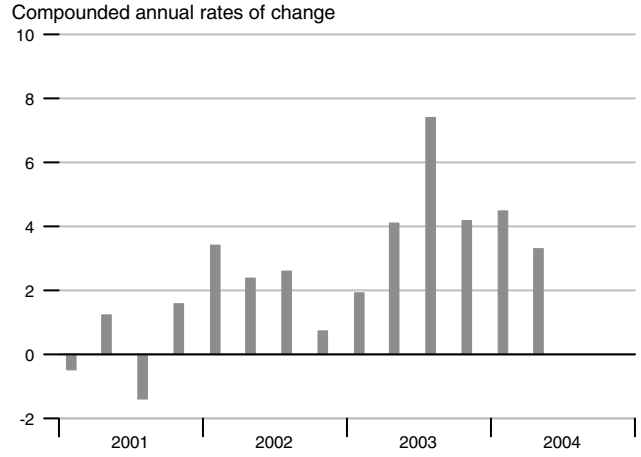
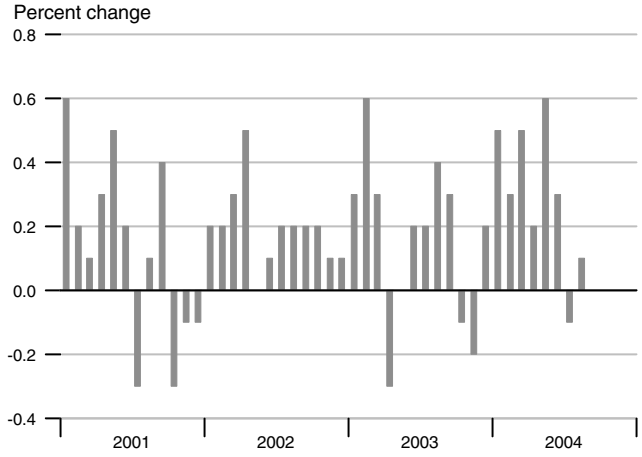
Real GDP Growth

Compounded annual rates of change



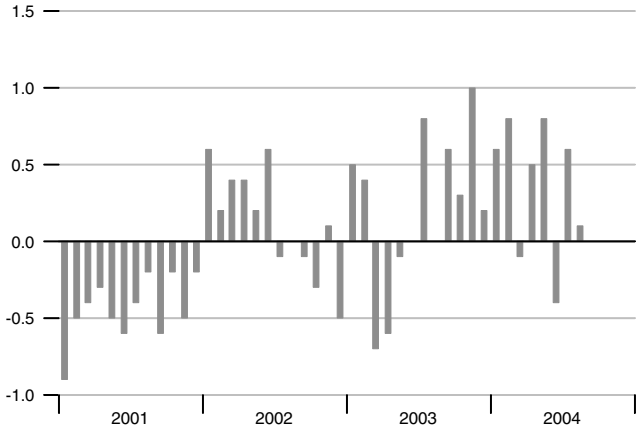
Consumer Price Index

Percent change



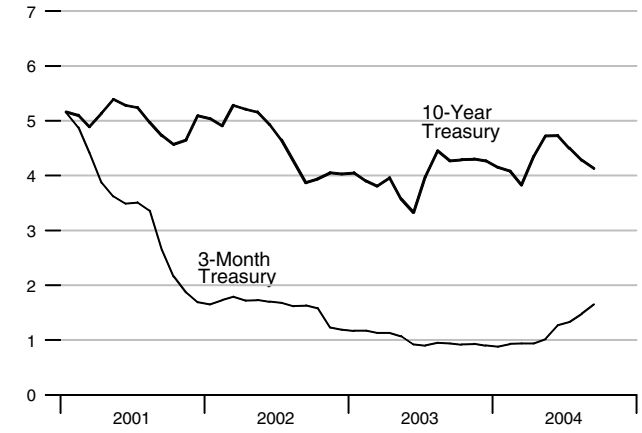
Industrial Production

Percent change



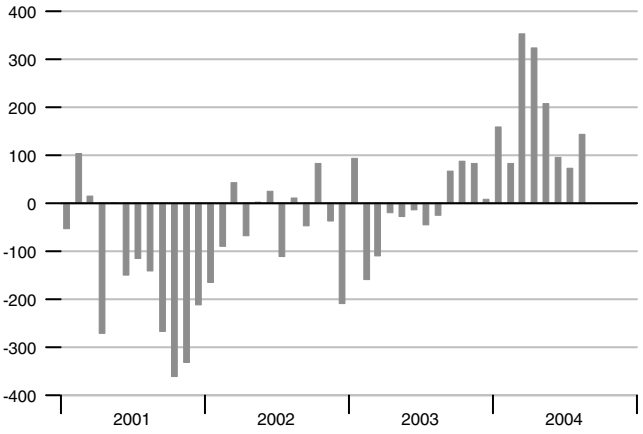
Interest Rates

Percent



Change in Nonfarm Payrolls

Thousands

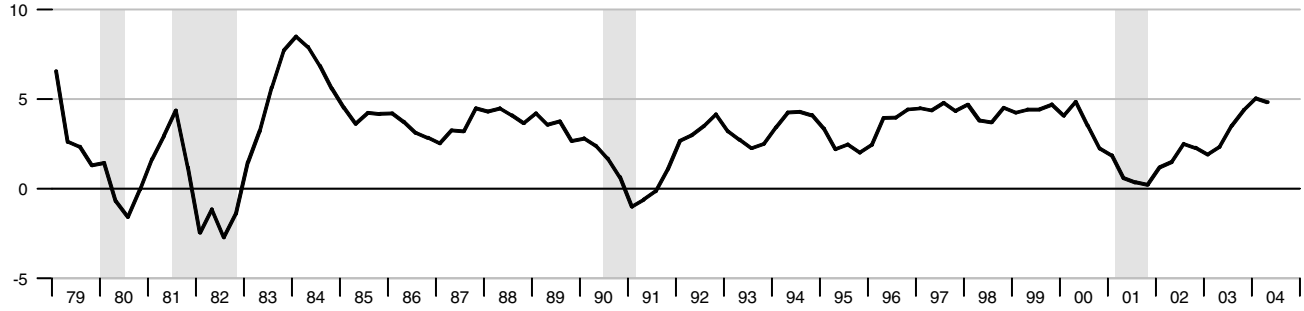


Unemployment Rate

Percent of labor force

Real Gross Domestic Product

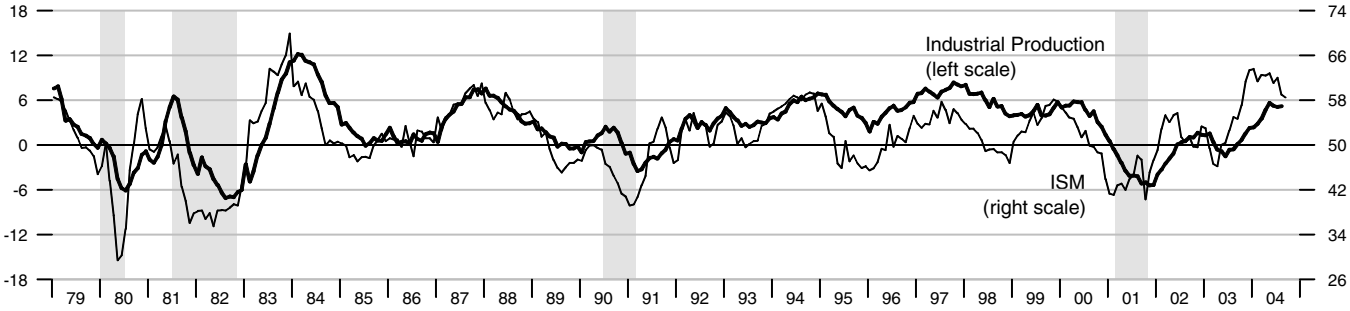
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

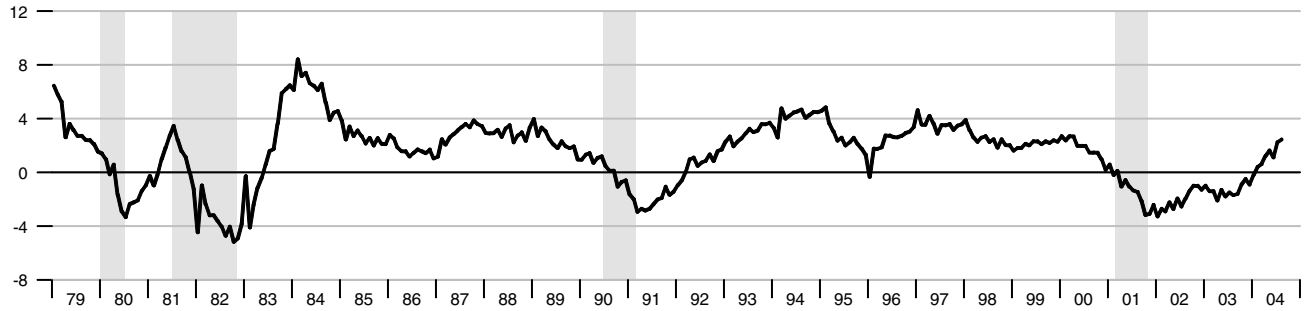
Percent change from year ago

Index



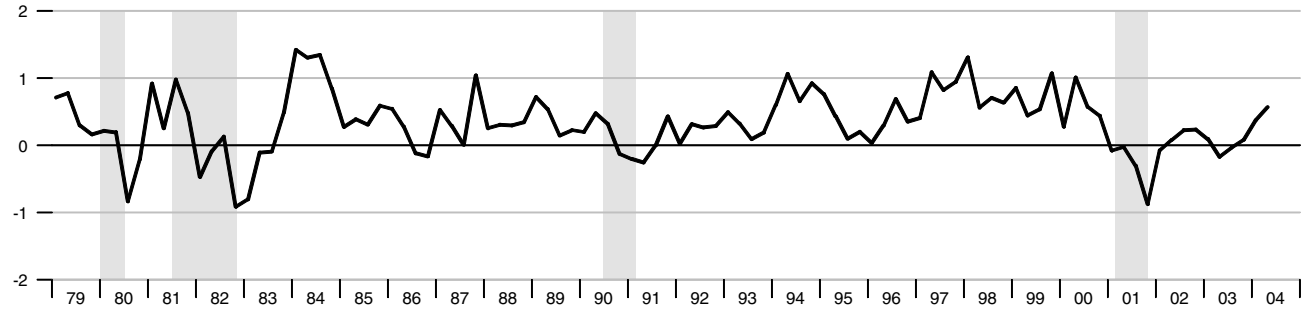
Aggregate Private Nonfarm Hours

Percent change from year ago



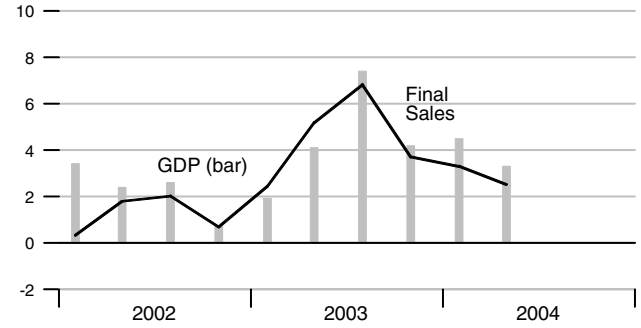
Real Change in Private Inventories

Percent of GDP



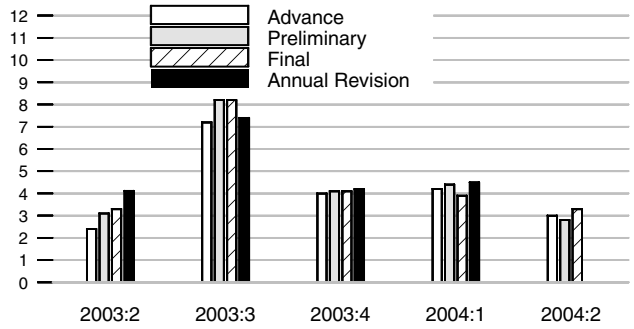
Real Final Sales and GDP

Compounded annual rates of change



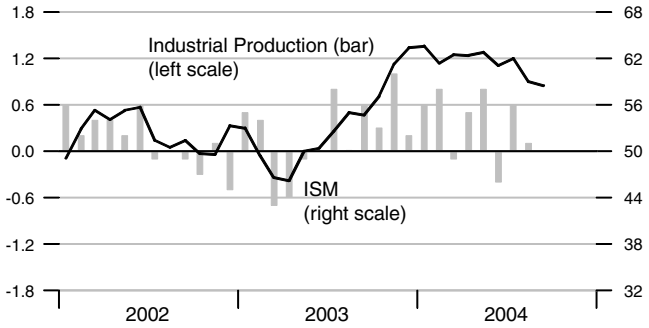
Real GDP Revisions

Compounded annual rates of change



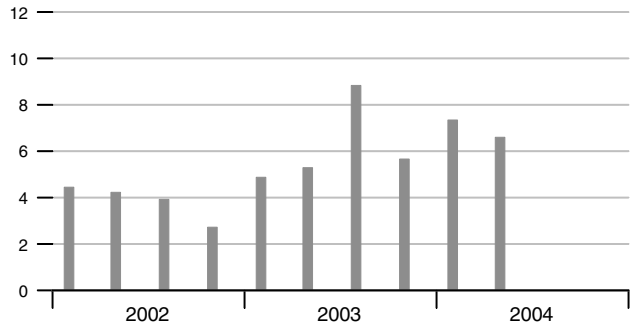
Industrial Production and ISM Index

Percent change | Index



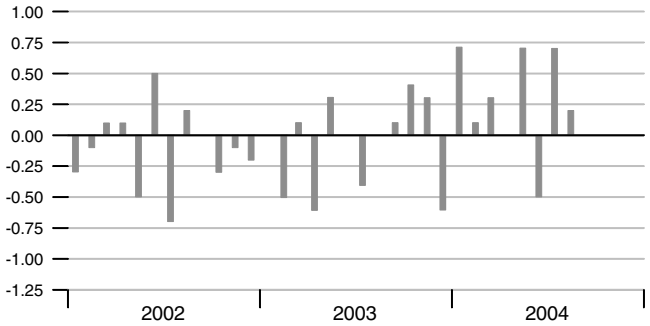
Nominal Gross Domestic Product

Compounded annual rates of change



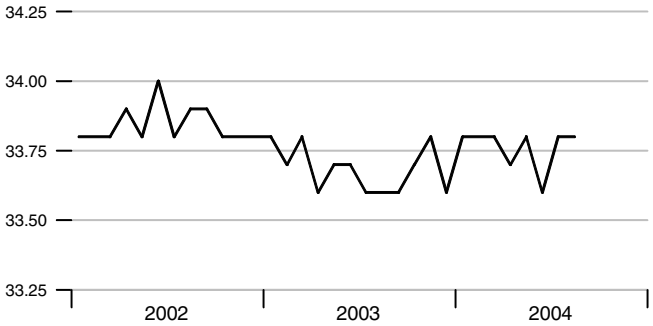
Aggregate Private Nonfarm Hours

Percent change



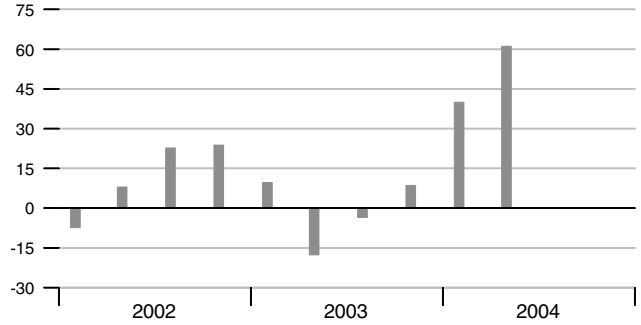
Average Weekly Private Nonfarm Hours

Hours



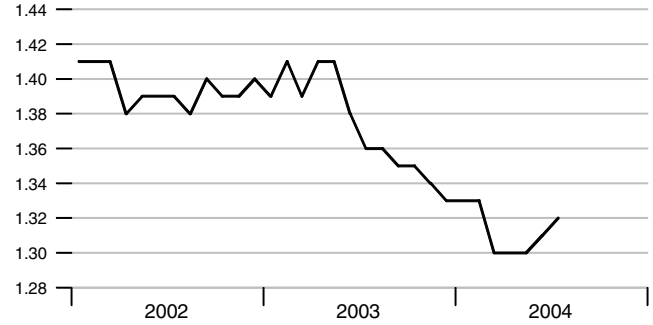
Real Change in Private Inventories

Billions of 2000 dollars



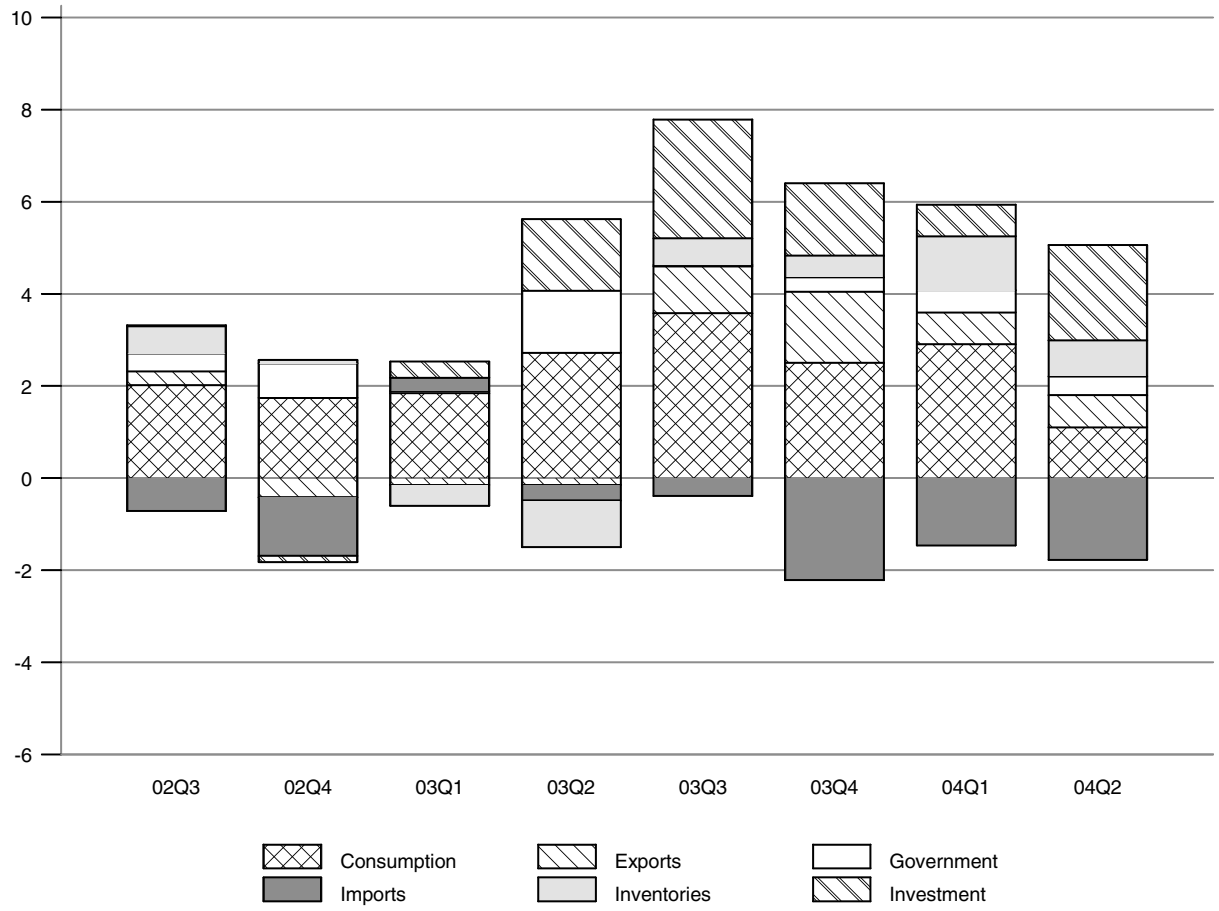
Inventory-Sales Ratio

Manufacturing and trade



Contribution of Components to Real GDP Growth

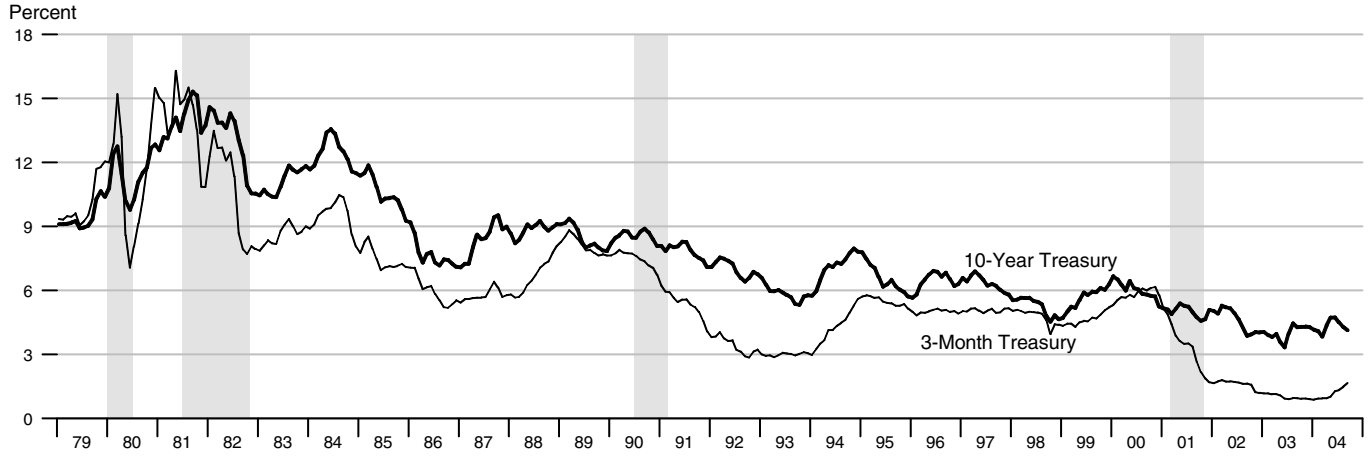
Percentage points at compounded annual rates



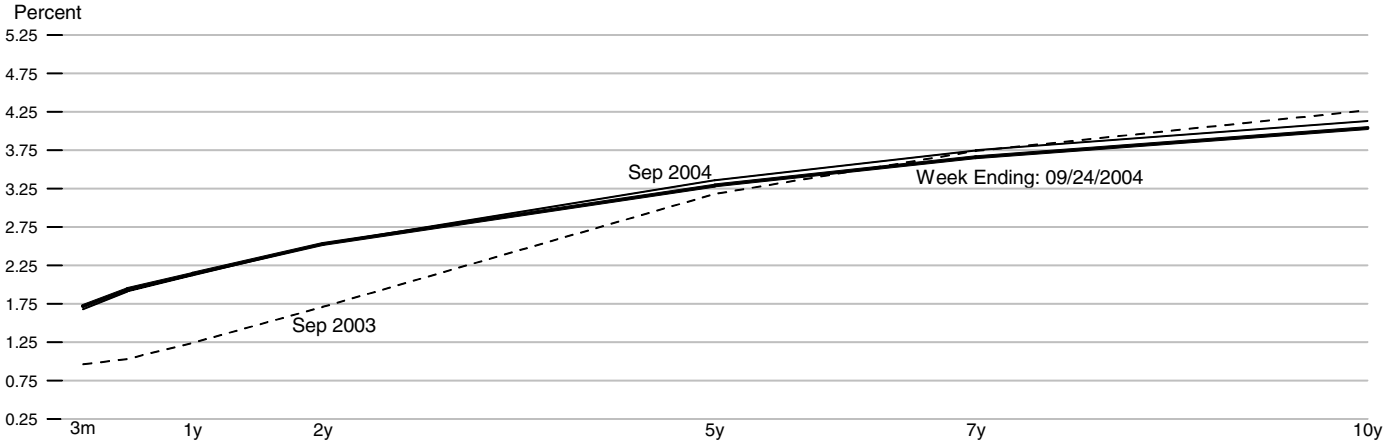
Contributions to Real GDP Growth Rate

	2002		2003				2004	
	3rd	4th	1st	2nd	3rd	4th	1st	2nd
Final Sales	2.01	0.67	2.38	5.12	6.84	3.72	3.32	2.52
Consumption	2.02	1.74	1.84	2.72	3.58	2.50	2.90	1.10
Fixed Investment	0.02	-0.13	0.35	1.55	2.59	1.57	0.69	2.07
Nonresidential	-0.12	-0.33	-0.01	1.10	1.50	1.07	0.42	1.21
Residential	0.13	0.20	0.36	0.44	1.09	0.50	0.27	0.86
Federal	0.19	0.58	0.04	1.40	-0.23	0.33	0.48	0.18
Government	0.40	0.75	0.05	1.35	0.03	0.31	0.48	0.41
State and Local	0.21	0.17	0.02	-0.05	0.26	-0.02	0.00	0.23
Imports	-0.72	-1.27	0.29	-0.34	-0.39	-2.22	-1.46	-1.77
Change in Inventory	0.59	0.07	-0.45	-1.01	0.57	0.47	1.17	0.78
Exports	0.29	-0.42	-0.15	-0.15	1.02	1.55	0.70	0.70
Net Exports	-0.43	-1.69	0.14	-0.50	0.64	-0.66	-0.76	-1.06
Residual	0.03	0.13	0.09	0.05	-0.10	0.02	0.02	0.01
Real GDP Growth	2.60	0.74	1.93	4.11	7.41	4.19	4.49	3.30

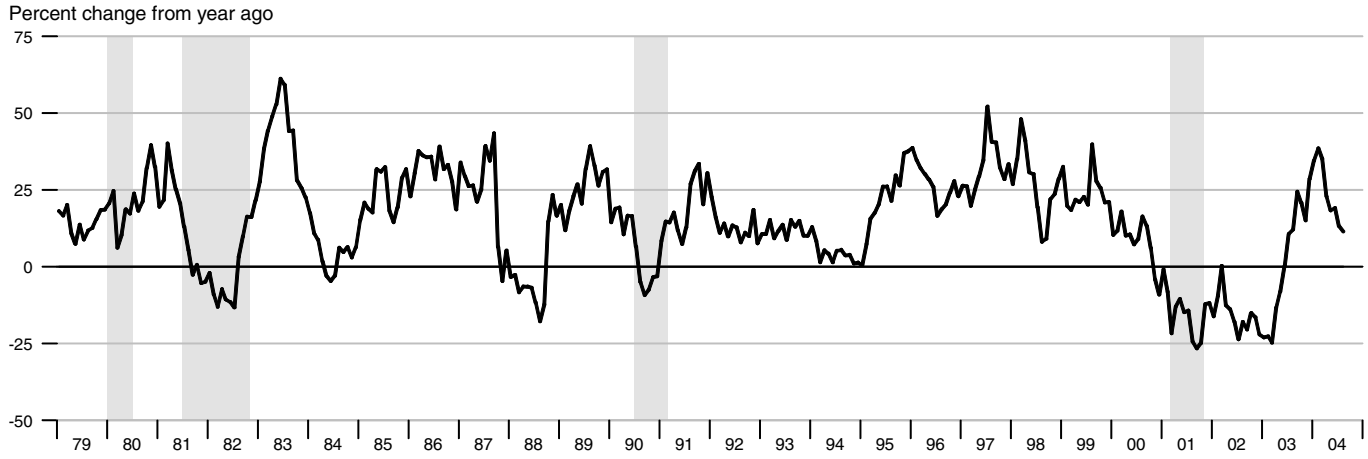
Interest Rates



Treasury Yield Curve

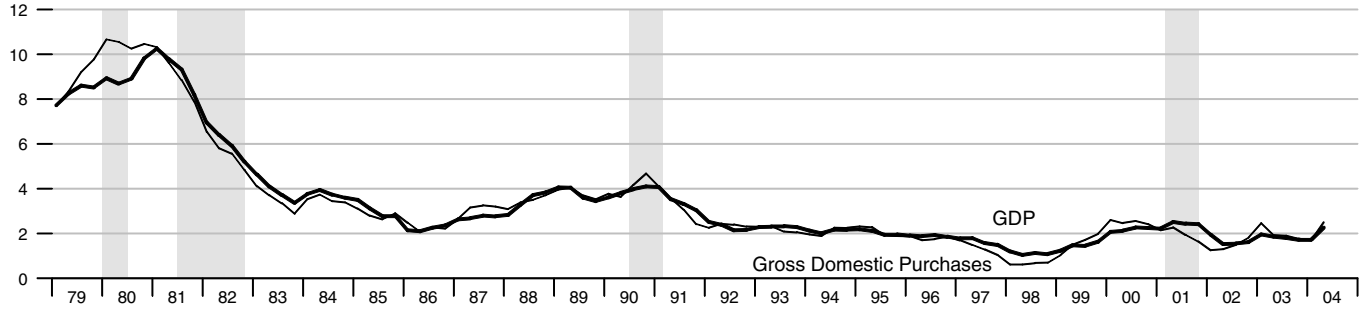


Standard and Poor's 500 Index with Reinvested Dividends



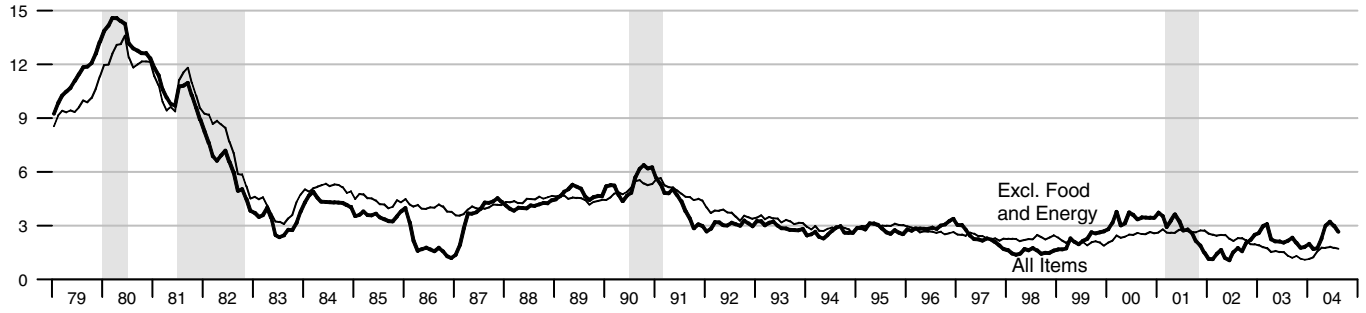
NIPA Chain Price Indexes

Percent change from year ago



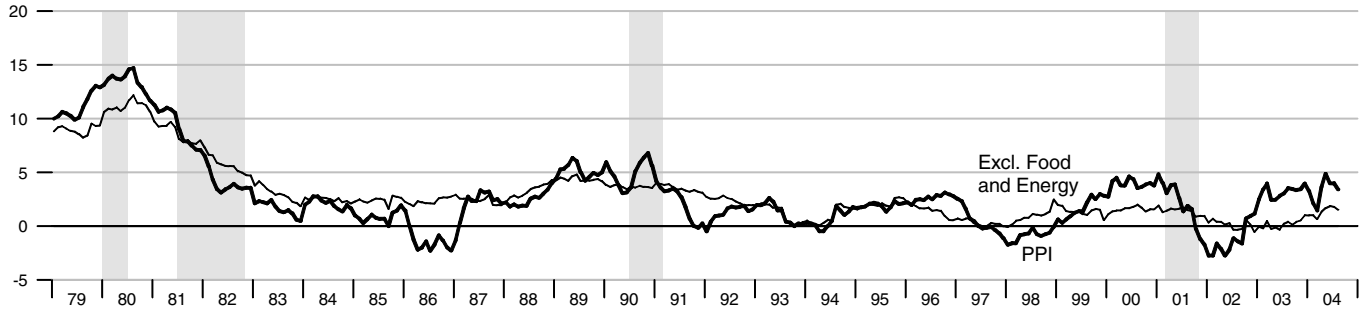
Consumer Price Index

Percent change from year ago



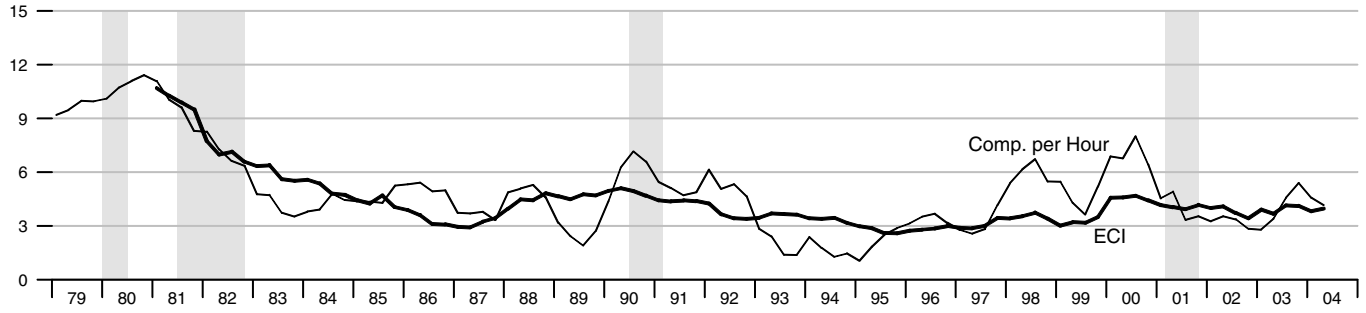
Producer Price Index, Finished Goods

Percent change from year ago



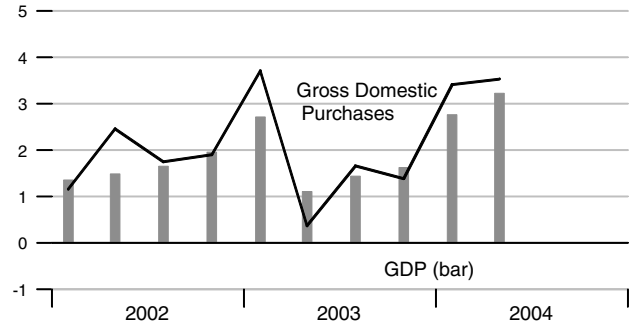
Employment Cost Index and Compensation per Hour

Percent change from year ago

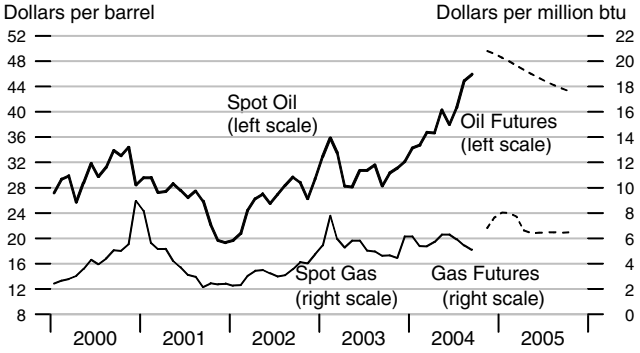


NIPA Chain Price Indexes

Compounded annual rates of change



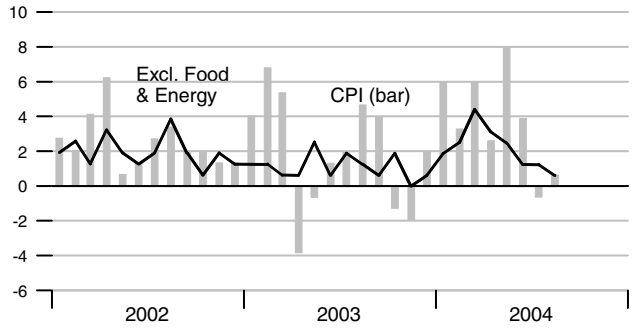
Oil & Natural Gas Prices: Spot & Futures



Note: Futures prices as of 09/30/2004.

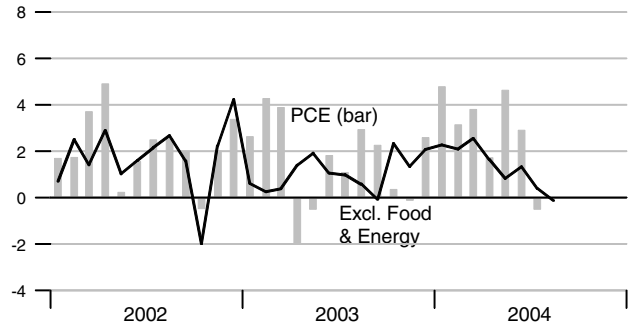
Consumer Price Index

Compounded annual rates of change



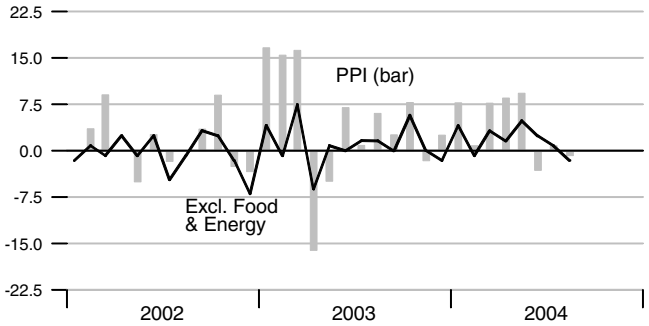
Consumption Chain Price Index

Compounded annual rates of change



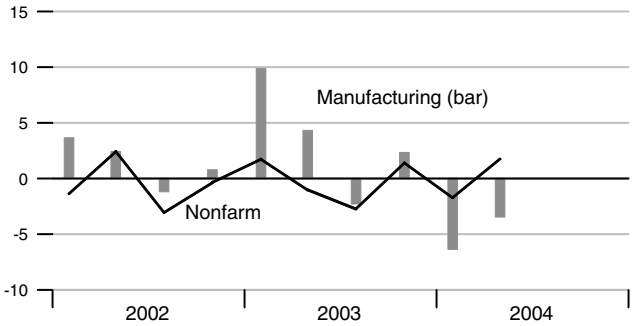
Producer Price Index, Finished Goods

Compounded annual rates of change



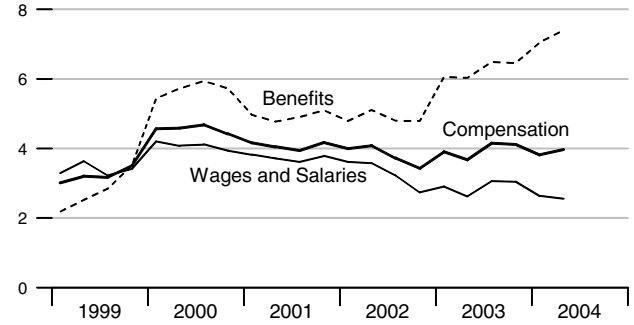
Unit Labor Cost

Compounded annual rates of change



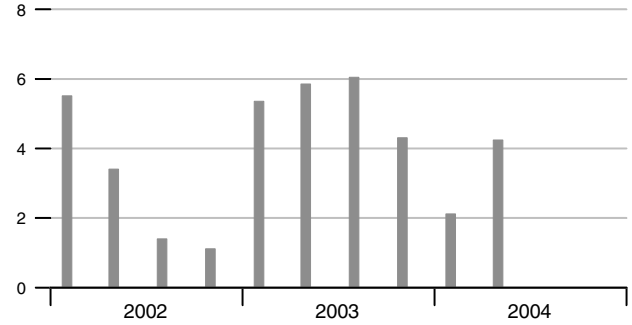
Employment Cost Index

Percent change from year ago

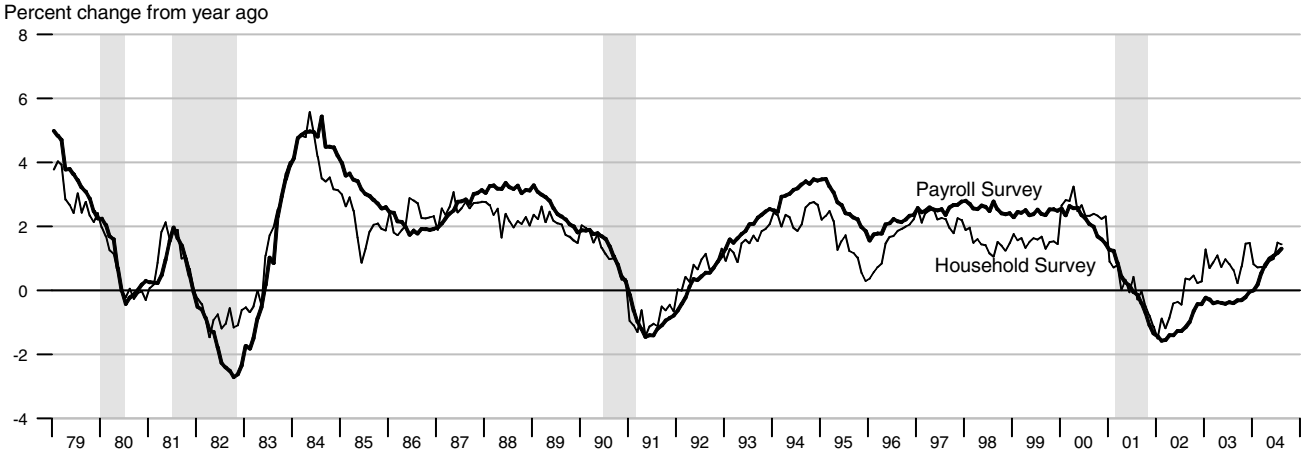


Compensation per Hour

Compounded annual rates of change

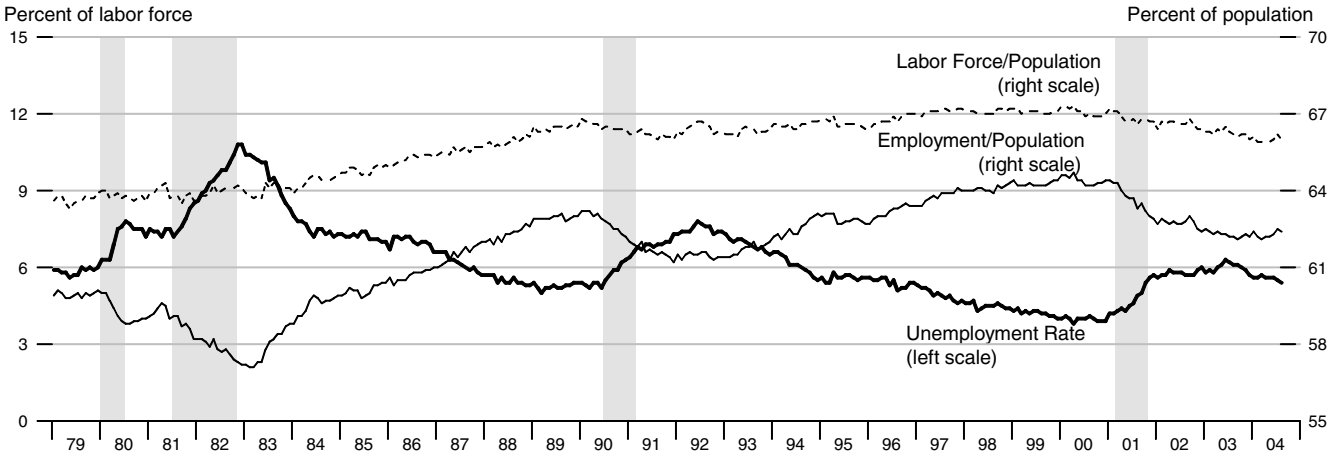


Employment

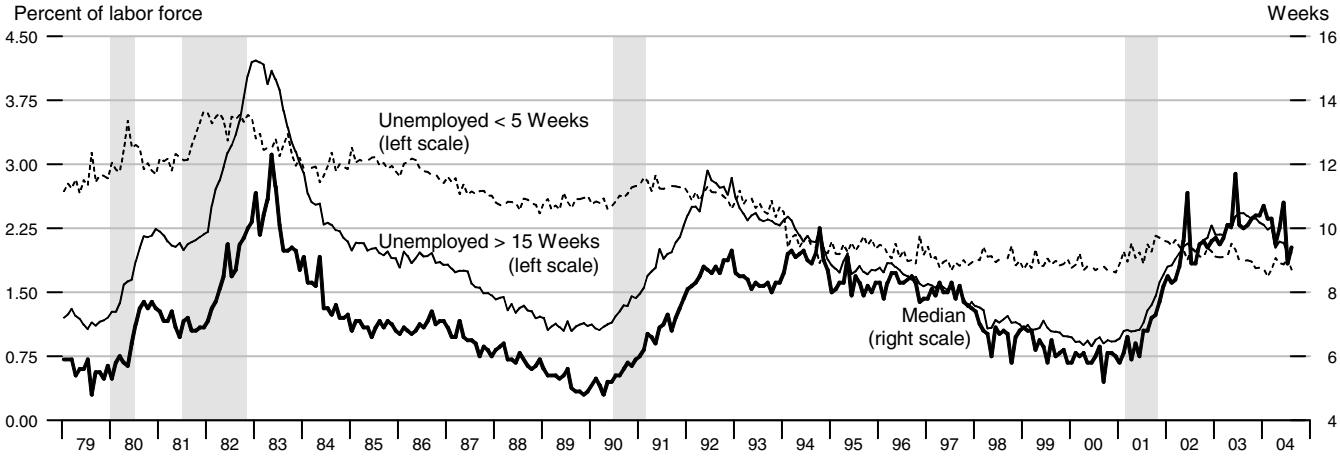


See the Notes section at the end of this publication for the Feb. 7, 2003, revisions to the Household Survey, and the June 6, 2003, revisions to the Establishment Survey.

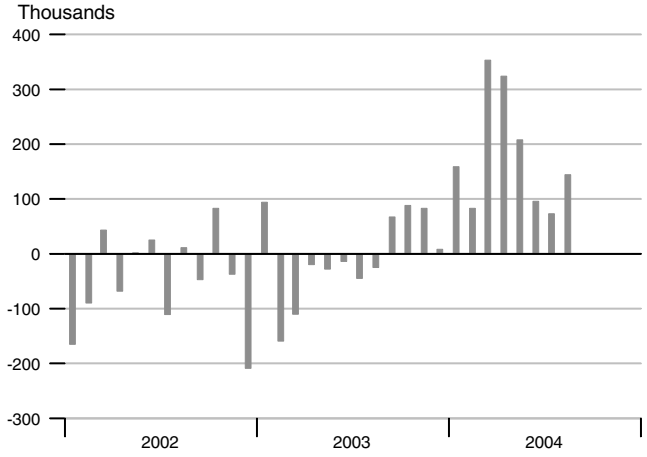
Unemployment, Labor Force Participation, and Employment Rates



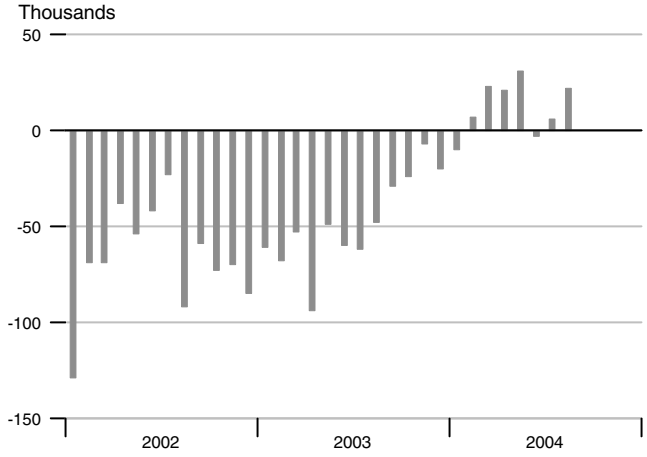
Duration of Unemployment



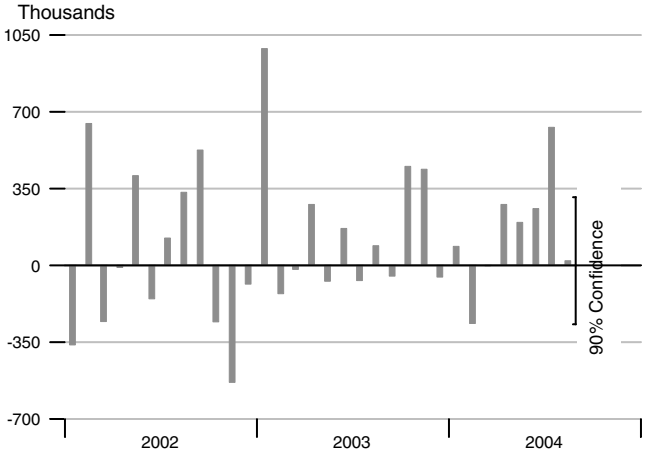
Change in Nonfarm Payrolls



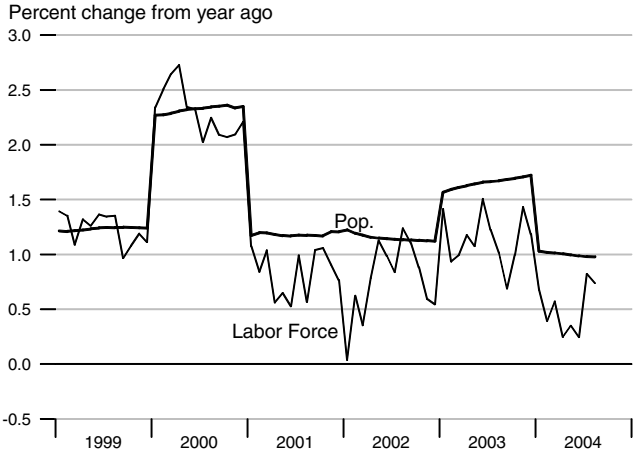
Change in Manufacturing Payrolls



Change in Household Employment

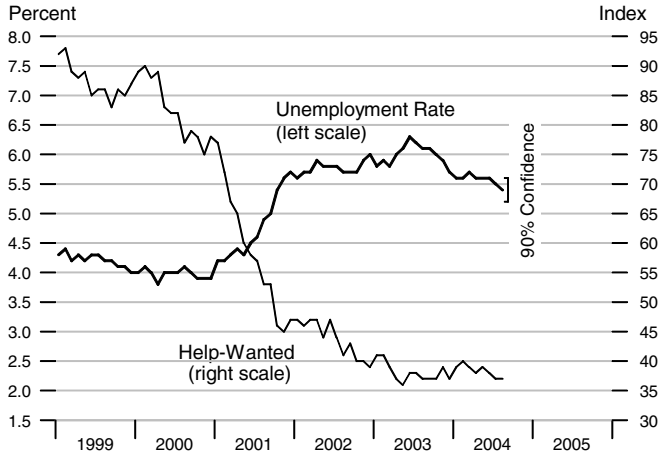


Labor Force and Population



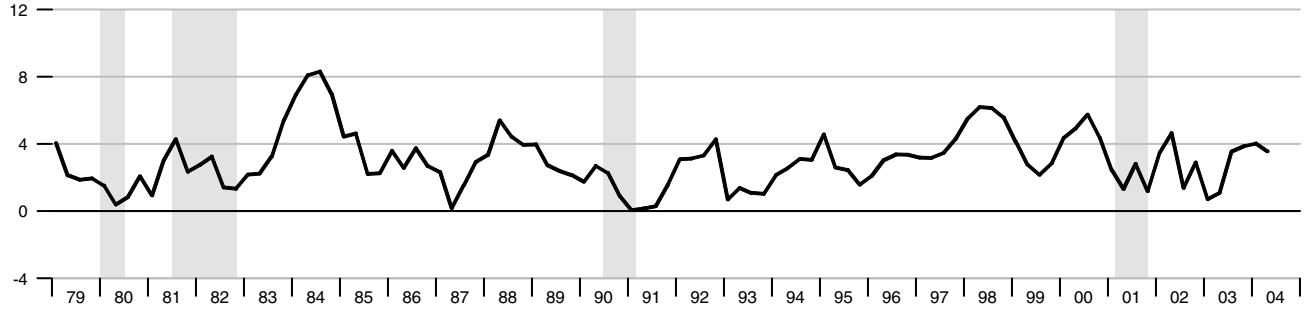
Available Labor Supply and Components

Unemployment Rate & Help-Wanted Index



Real Disposable Personal Income

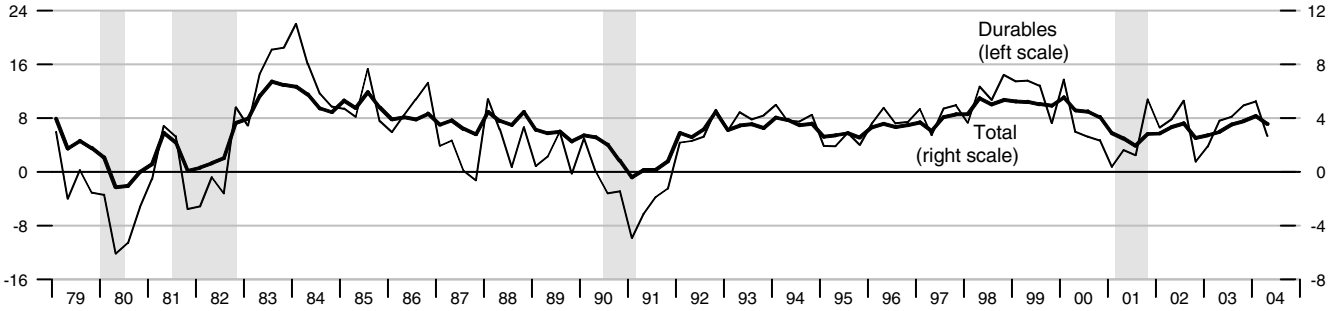
Percent change from year ago, quarterly data



Real Consumption

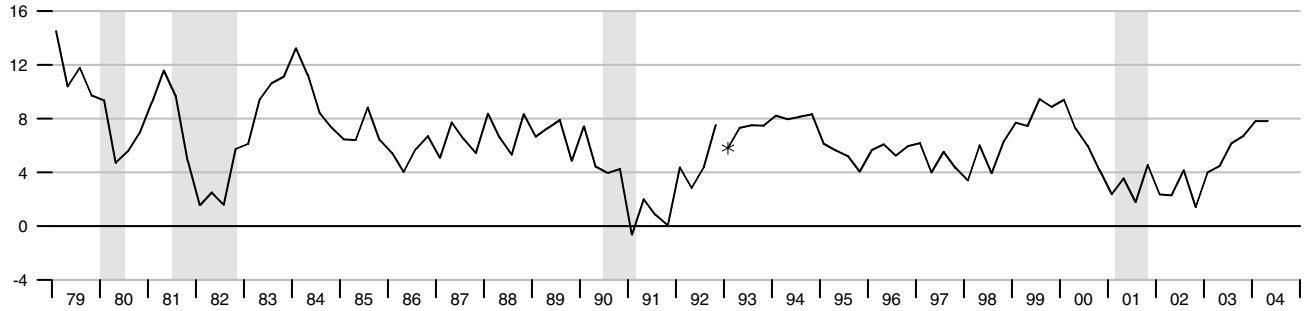
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



Retail and Food Services Sales

Percent change from year ago, quarterly average

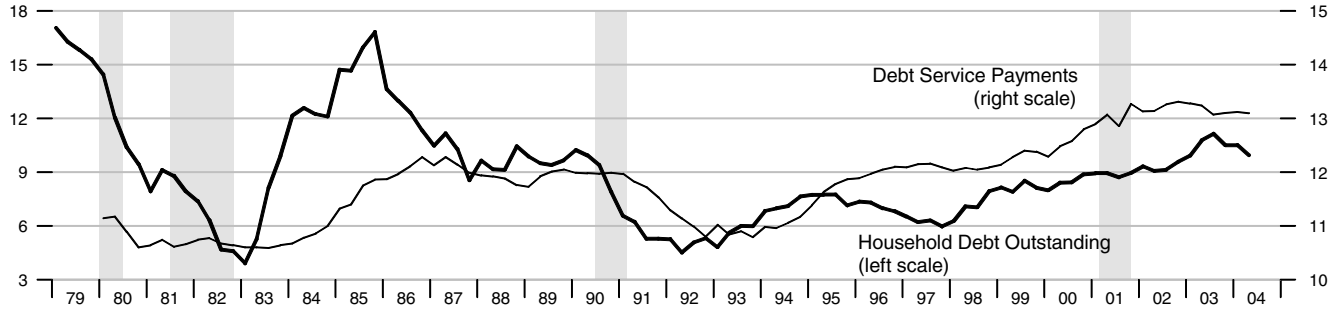


*Data from Jan. 1992 to the present are on a NAICS basis; data prior to Jan. 1992 are on an SIC basis and are not strictly comparable (see End Note).

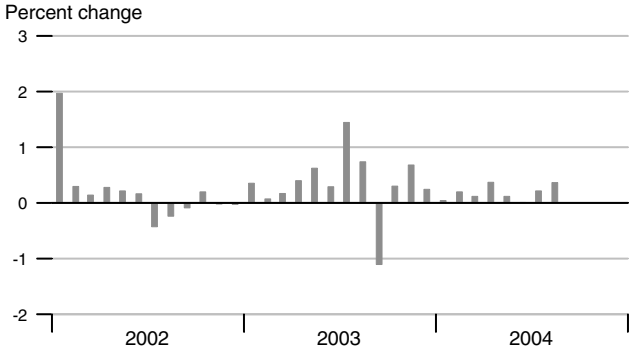
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

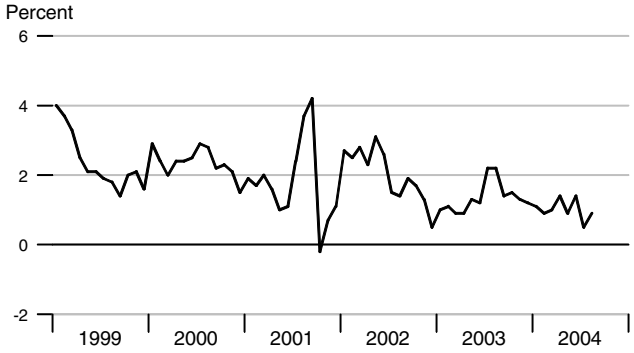
Percent of disposable personal income



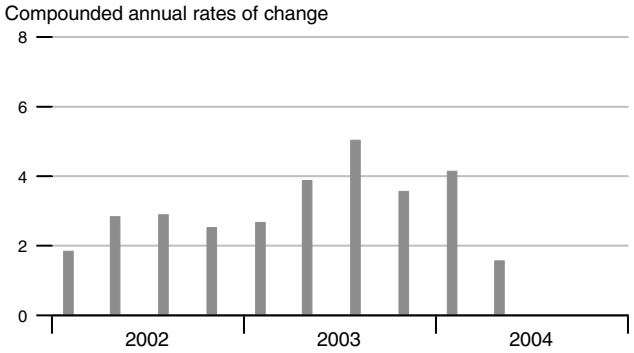
Real Disposable Personal Income



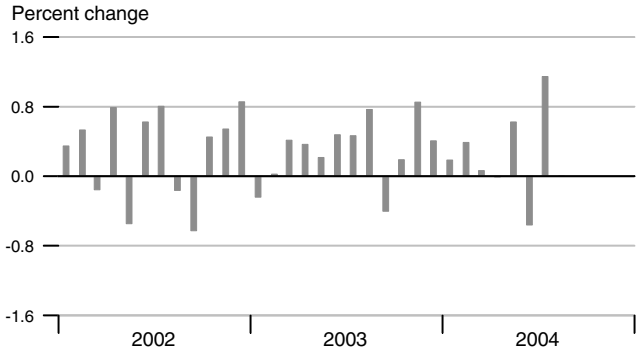
Personal Saving Rate



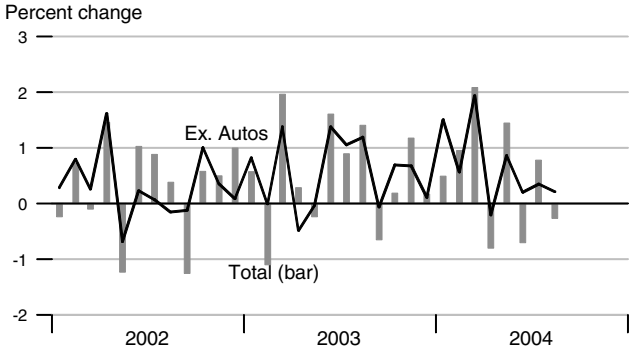
Real Consumption



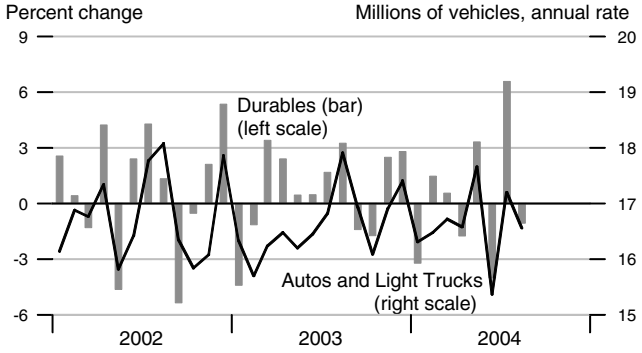
Real Consumption



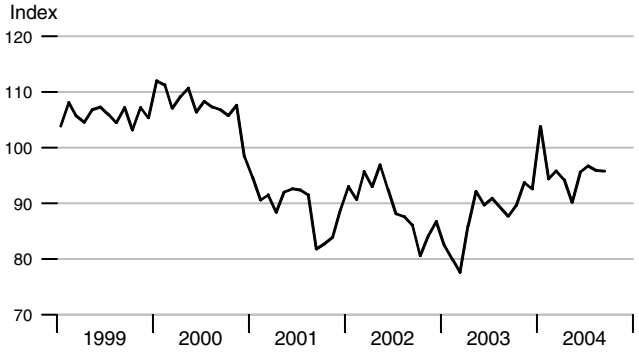
Retail & Food Services



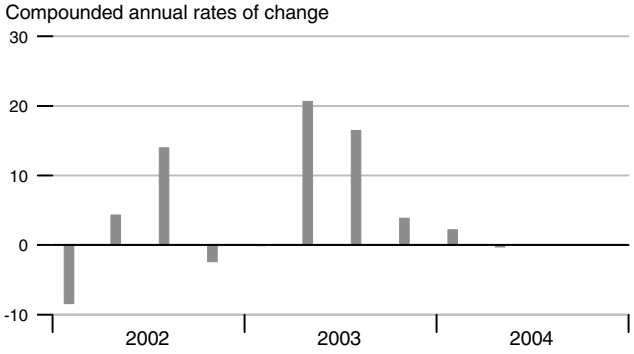
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

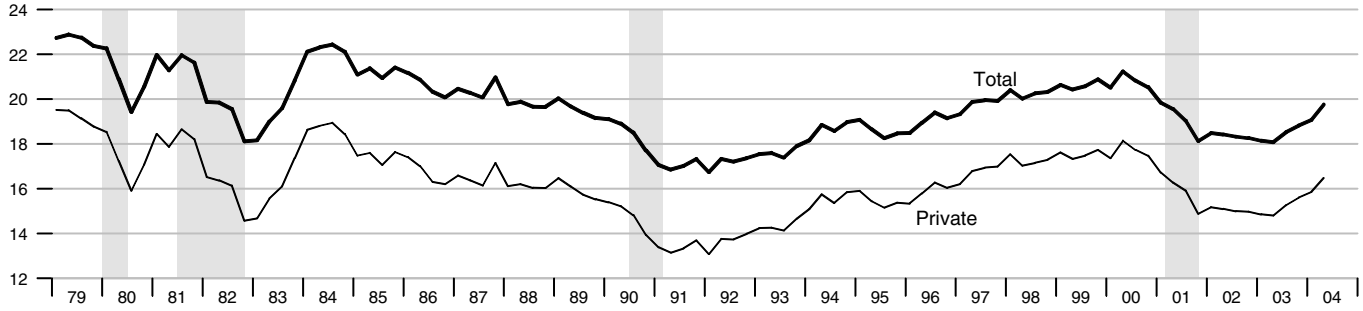


Real Durables Consumption



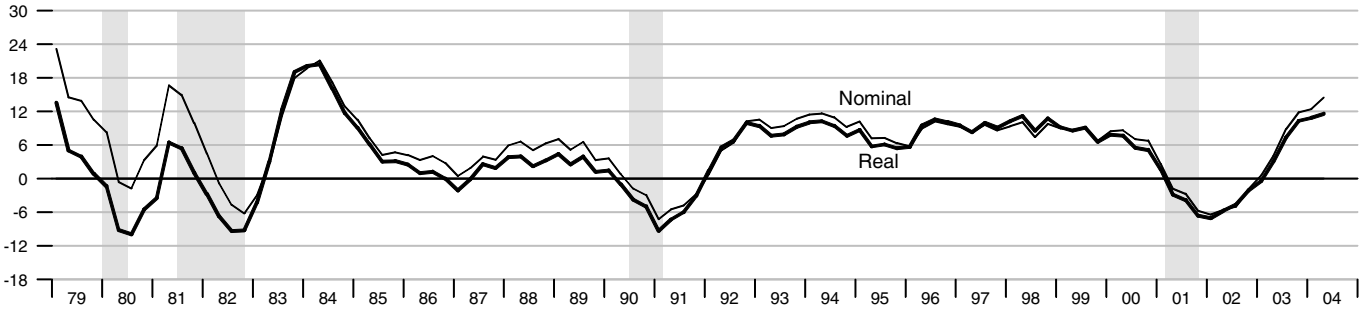
Investment

Percent of nominal GDP



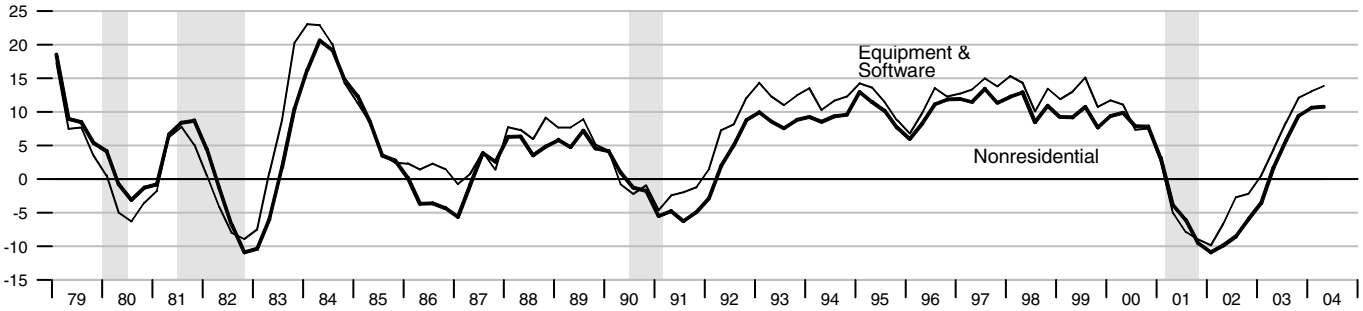
Private Fixed Investment

Percent change from year ago



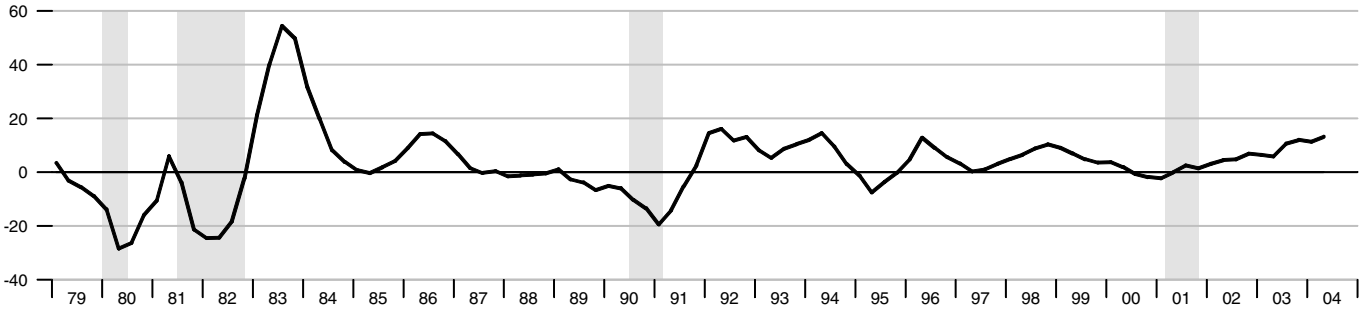
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

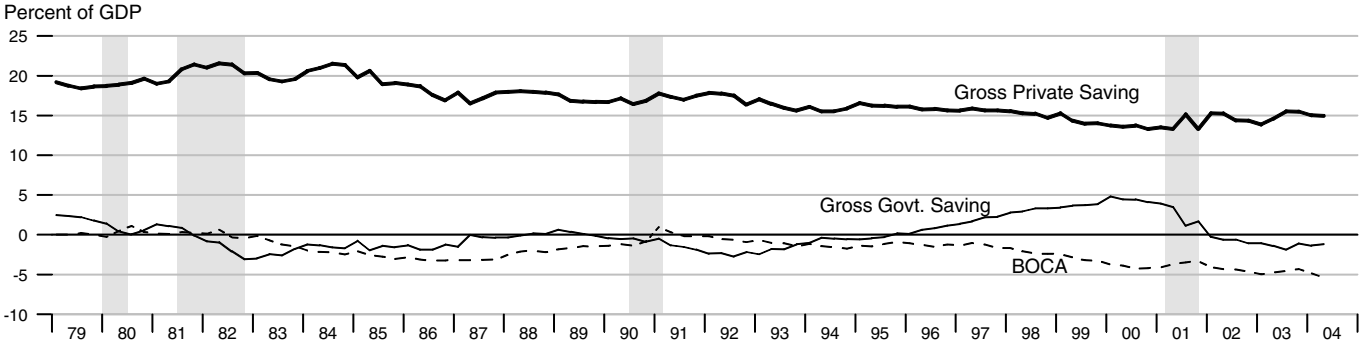


Real Residential Fixed Investment

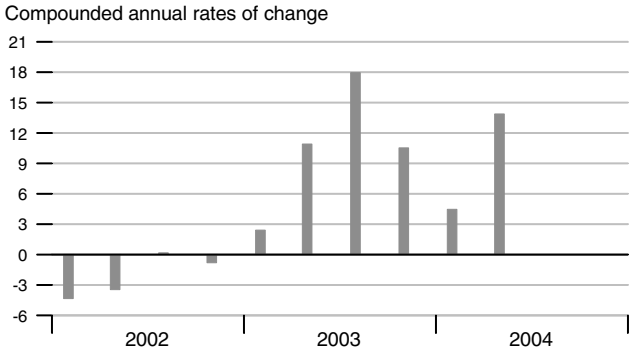
Percent change from year ago



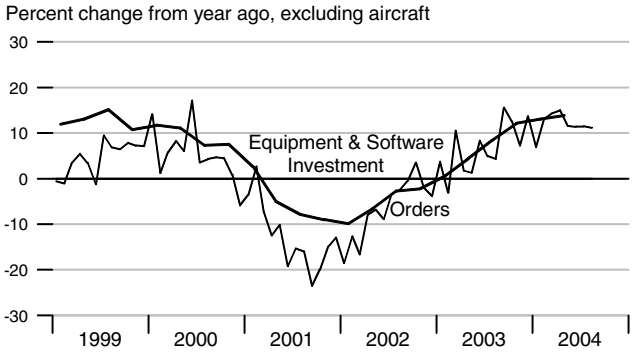
Gross Saving Rates and Balance on Current Account (NIPA)



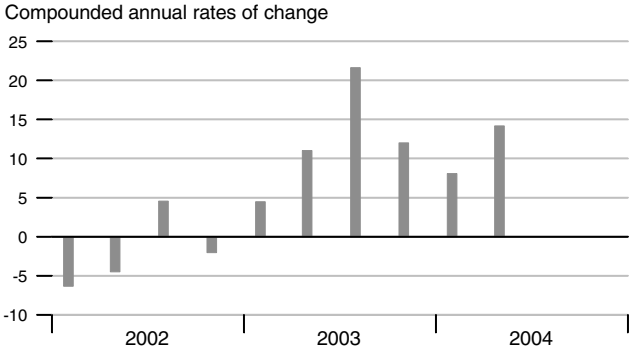
Real Private Fixed Investment



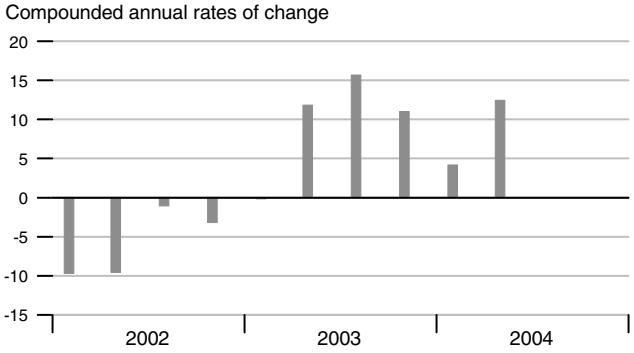
Nondefense Capital Goods Orders



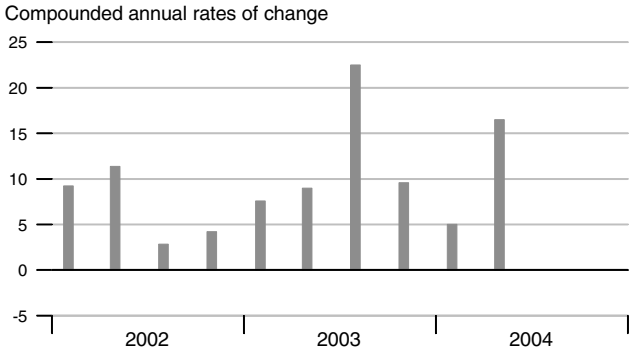
Real Equipment & Software Investment



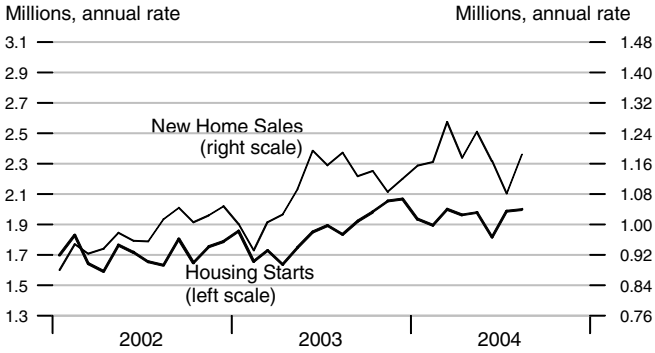
Real Nonresidential Fixed Investment



Real Residential Fixed Investment

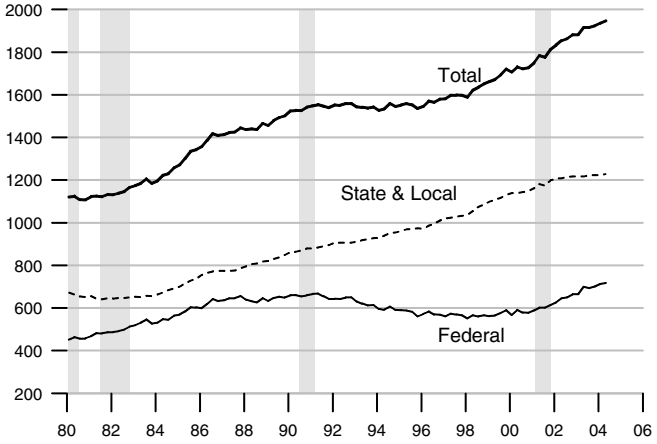


Housing Starts and New Home Sales



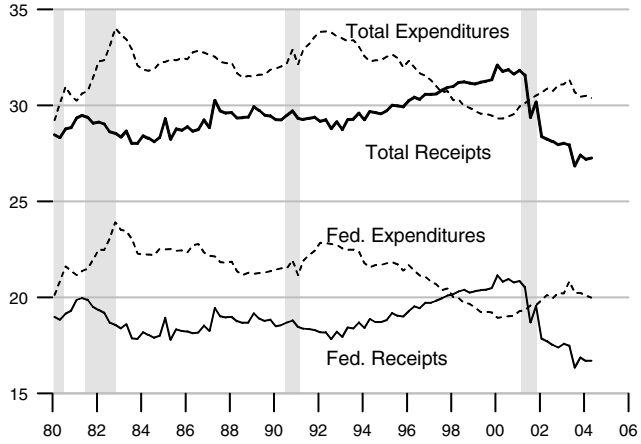
Govt. Consumption and Investment

Billions of 2000 dollars



Govt. Current Receipts and Expenditures

Percent of GDP



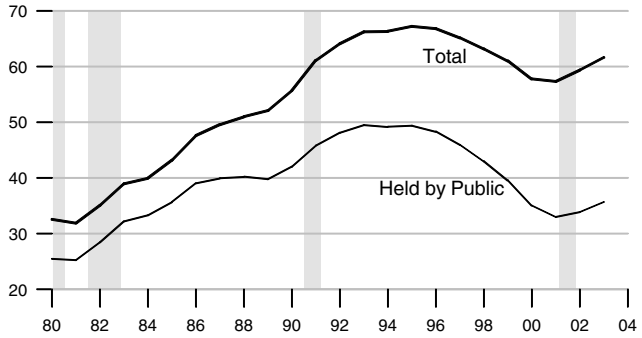
Government Budgets

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	1324.4	-269.3
1992	845.7	845.0	0.7	1147.2	1444.6	-297.4	1091.3	1381.7	-290.4
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	-203.3
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	1601.3	-22.0
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	125.6
2000	1319.5	1269.5	50.0	2053.8	1864.4	189.4	2025.2	1788.8	236.4
2001	1373.0	1368.2	4.8	2016.2	1969.5	46.7	1991.2	1863.8	127.4
2002	1411.9	1436.9	-25.0	1847.3	2101.8	-254.5	1853.2	2011.0	-157.8
2003	1494.9	1498.1	-3.2	1877.0	2241.6	-364.6	1782.3	2157.1	-374.8
2001Q3	1354.8	1363.4	-8.6	1895.4	1984.0	-88.6	409.0	450.7	-41.7
2001Q4	1372.5	1403.1	-30.6	1999.6	2004.3	-4.7	466.3	501.7	-35.4
2002Q1	1380.9	1409.8	-28.9	1844.6	2053.1	-208.5	412.6	509.2	-96.6
2002Q2	1404.1	1427.7	-23.6	1850.5	2102.1	-251.6	522.6	506.9	15.6
2002Q3	1423.9	1445.3	-21.4	1847.9	2103.1	-255.2	451.7	493.2	-41.5
2002Q4	1438.5	1464.8	-26.3	1846.2	2148.8	-302.6	427.3	535.6	-108.2
2003Q1	1437.7	1486.6	-48.9	1888.6	2170.2	-281.6	397.7	542.6	-144.9
2003Q2	1484.6	1490.2	-5.6	1902.5	2266.9	-364.4	527.6	544.2	-16.6
2003Q3	1511.4	1504.9	6.5	1816.4	2249.4	-433.0	429.4	534.0	-104.6
2003Q4	1545.8	1510.5	35.3	1900.6	2279.8	-379.2	440.8	570.9	-130.2
2004Q1	1550.6	1538.8	11.8	1915.3	2306.3	-391.0	409.6	580.4	-170.8
2004Q2	1583.9	1565.7	18.2	1946.2	2329.1	-382.9	549.9	575.6	-25.7

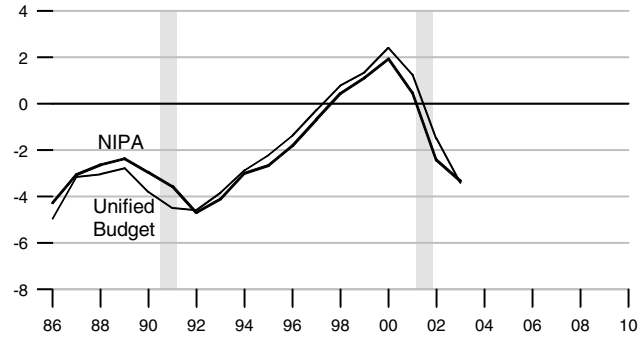
Federal Debt

Percent of GDP



Federal Surplus (+) / Deficit (-)

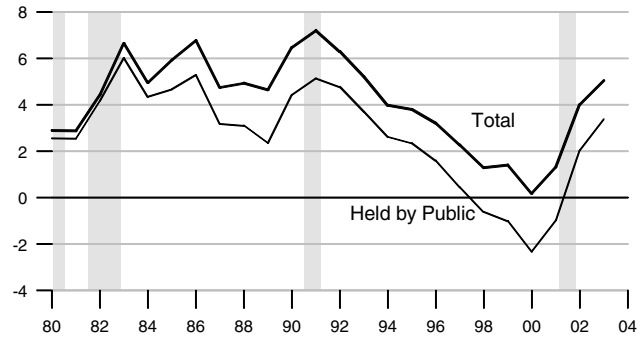
Percent of GDP



NIPA: Net government saving.

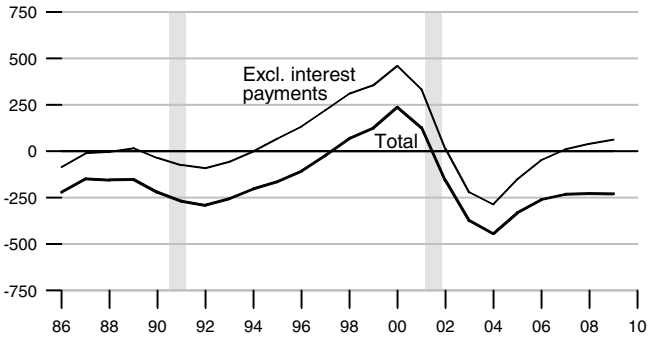
Change in Federal Debt

Percent of GDP



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

Billions of dollars, fiscal years

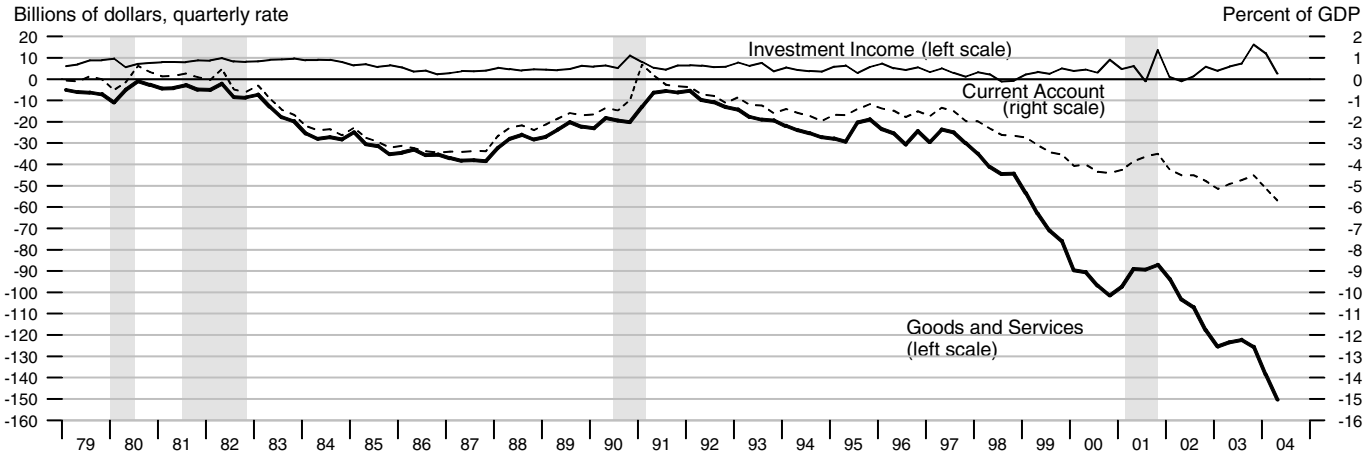


Federal Government Debt

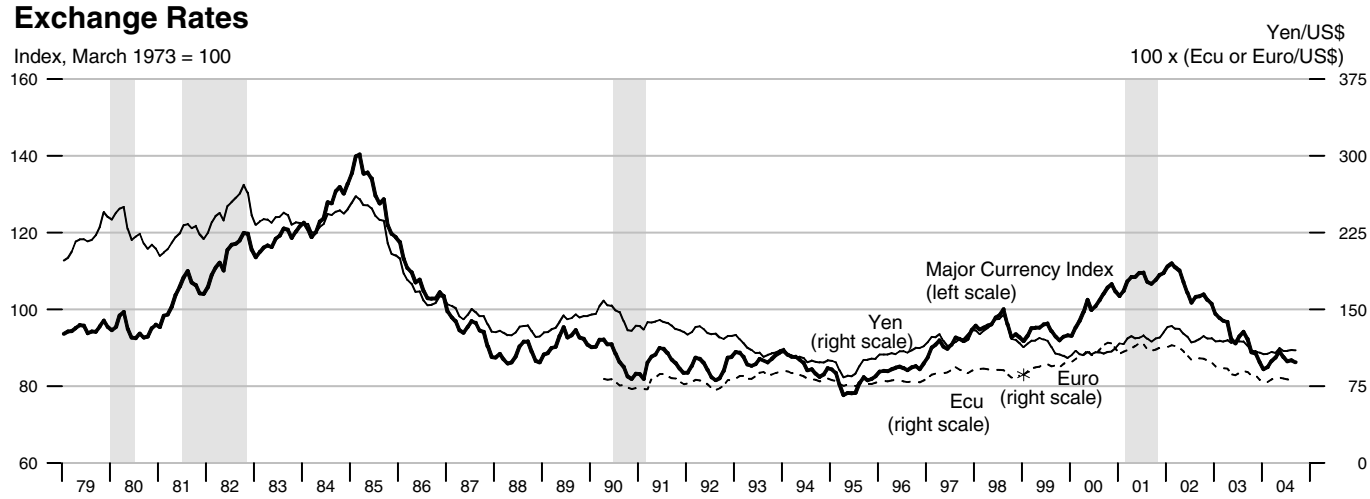
Billions of dollars, end of month or fiscal year
Excludes Agency-issued debt

		Total Public Debt	Held by Agencies and Trusts	Held by Public		Held by Private Investors	
				Total	Federal Reserve Banks	Total	Foreign and International
2001		5807.5	2468.8	3338.7	534.1	2779.7	1005.5
2002		6228.2	2675.7	3552.6	604.2	2924.8	1200.8
2003		6783.2	2859.3	3924.0	656.1	3268.0	1463.1
2001	March	5773.7	2339.4	3434.4	523.9	2892.8	1029.9
	June	5726.8	2452.6	3274.2	535.1	2722.6	1000.5
	September	5807.5	2468.8	3338.7	534.1	2779.7	1005.5
	December	5943.4	2549.7	3393.8	551.7	2819.5	1051.2
2002	March	6006.0	2562.4	3443.7	575.4	2849.2	1067.1
	June	6126.5	2662.9	3463.5	590.7	2849.8	1135.4
	September	6228.2	2675.7	3552.6	604.2	2924.8	1200.8
	December	6405.7	2758.3	3647.4	629.4	3018.5	1246.8
2003	March	6460.8	2750.0	3710.8	641.5	3069.9	1288.3
	June	6670.1	2853.8	3816.3	652.1	3164.7	1390.6
	September	6783.2	2859.3	3924.0	656.1	3268.0	1463.1
	December	6998.0	2954.5	4044.1	666.7	3377.9	1542.0
2004	March	7131.1	2954.4	4176.7	674.1	3502.8	1706.9
	June	7274.3	3055.6	4218.7	687.4	3531.5	1759.0

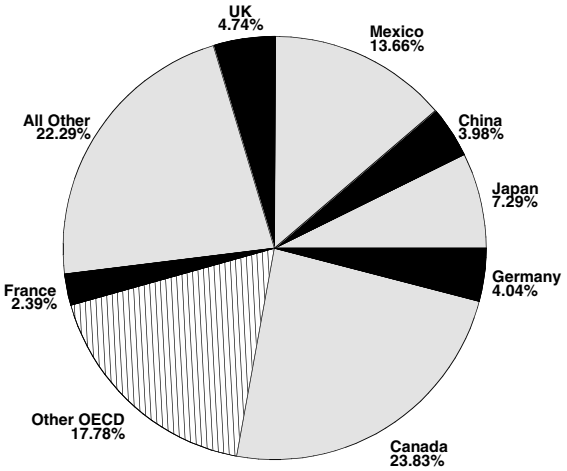
Current Account, Trade and Investment Income Balances



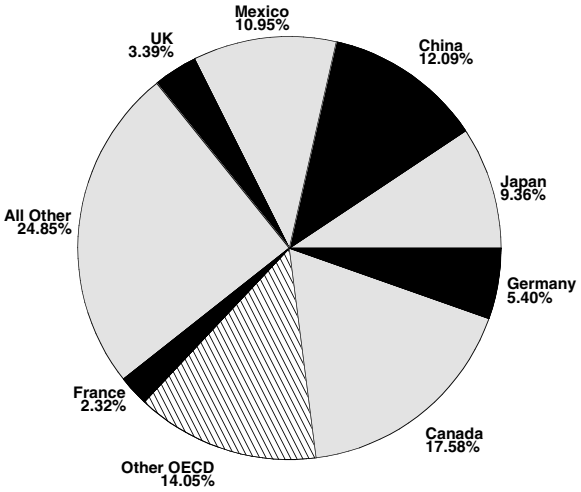
Exchange Rates



Goods Export Shares, 2003

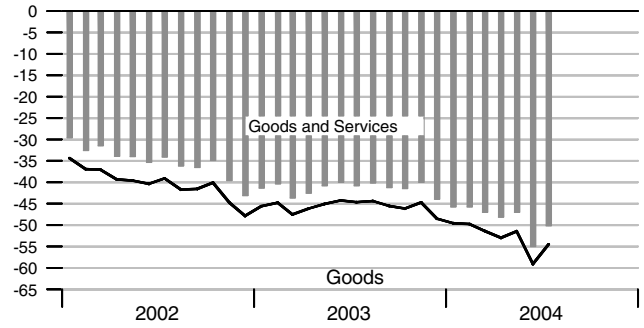


Goods Import Shares, 2003



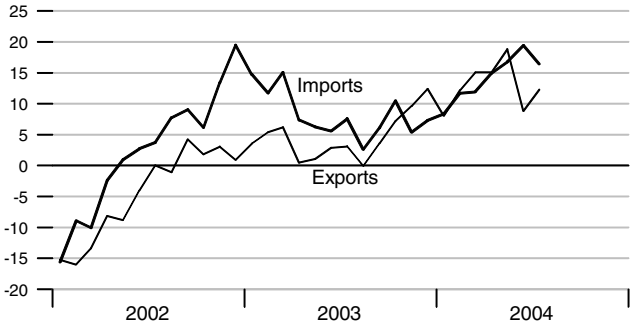
Trade Balance

Billions of dollars



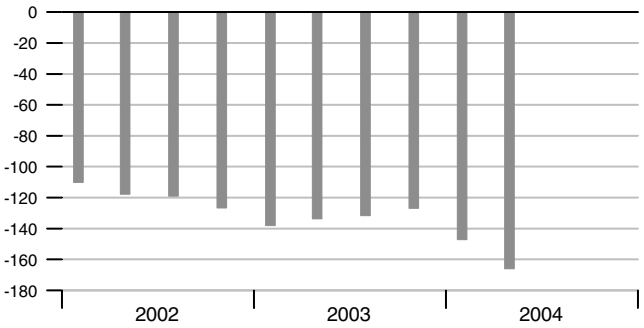
Goods Trade

Percent change from year ago



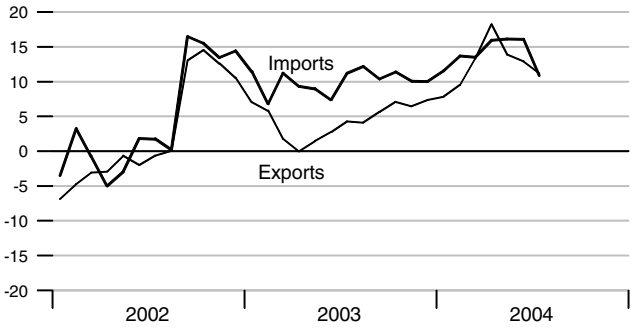
Current Account Balance

Billions of dollars



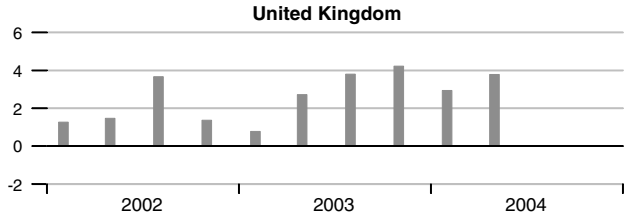
Services Trade

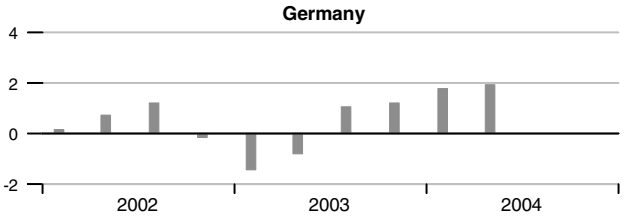
Percent change from year ago

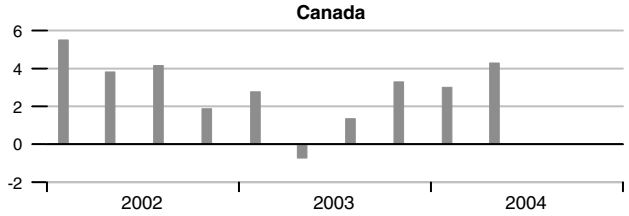


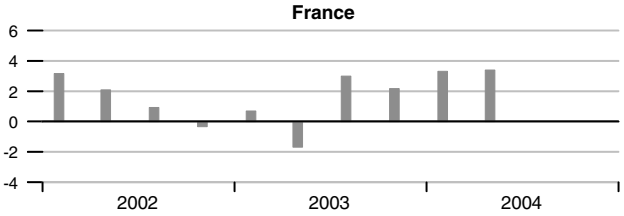
Real GDP Growth of Major Trading Partners

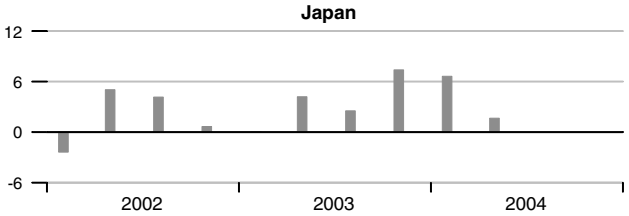
Compounded annual rates of change

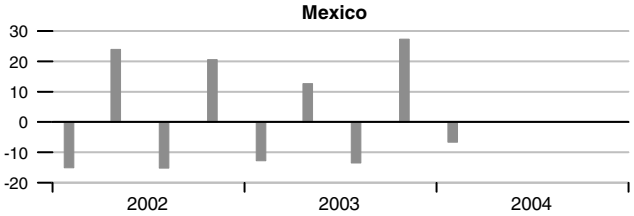




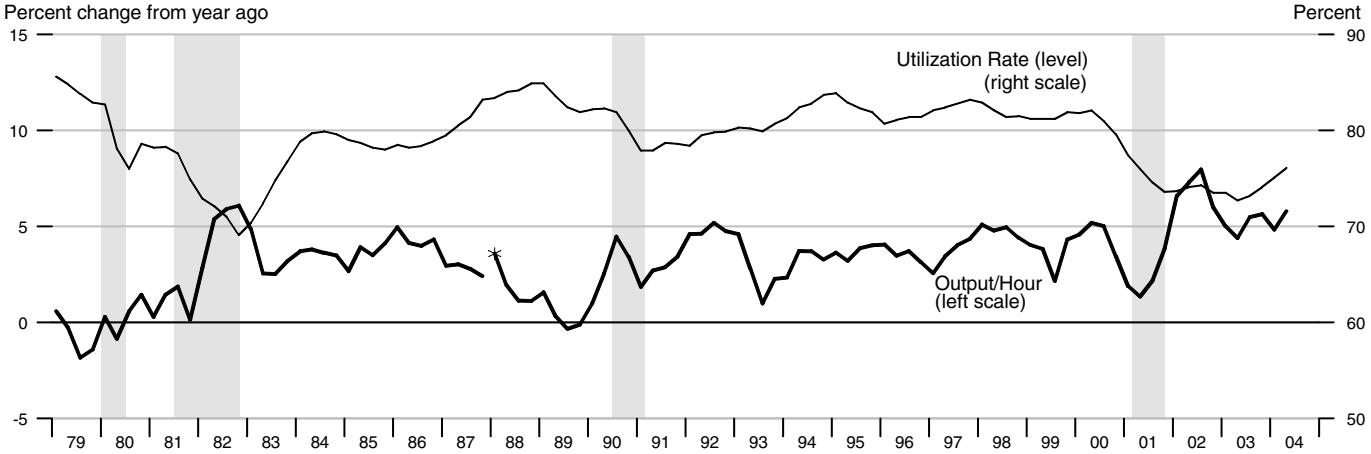






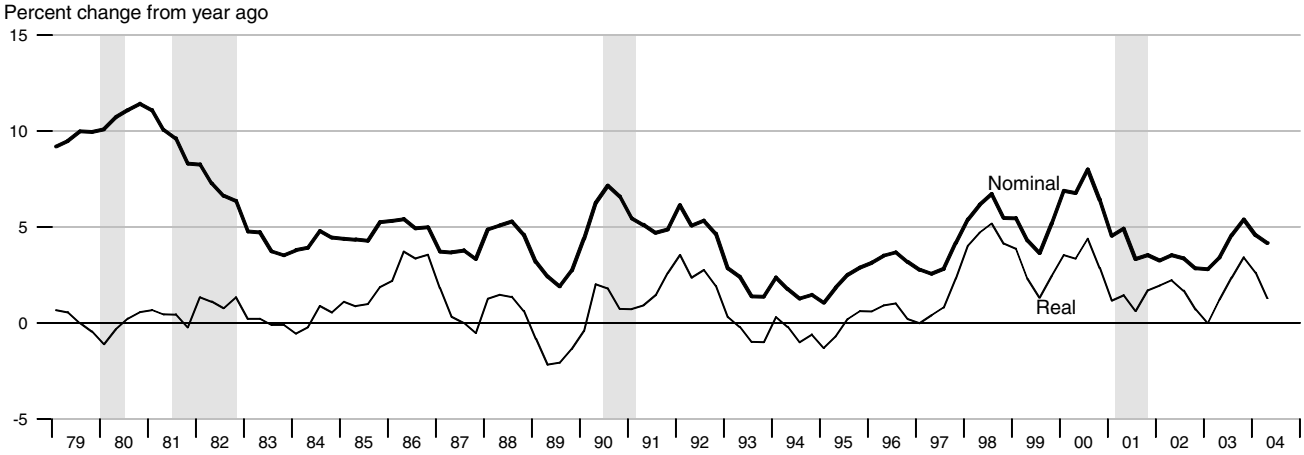


Output per Hour and Capacity Utilization, Manufacturing

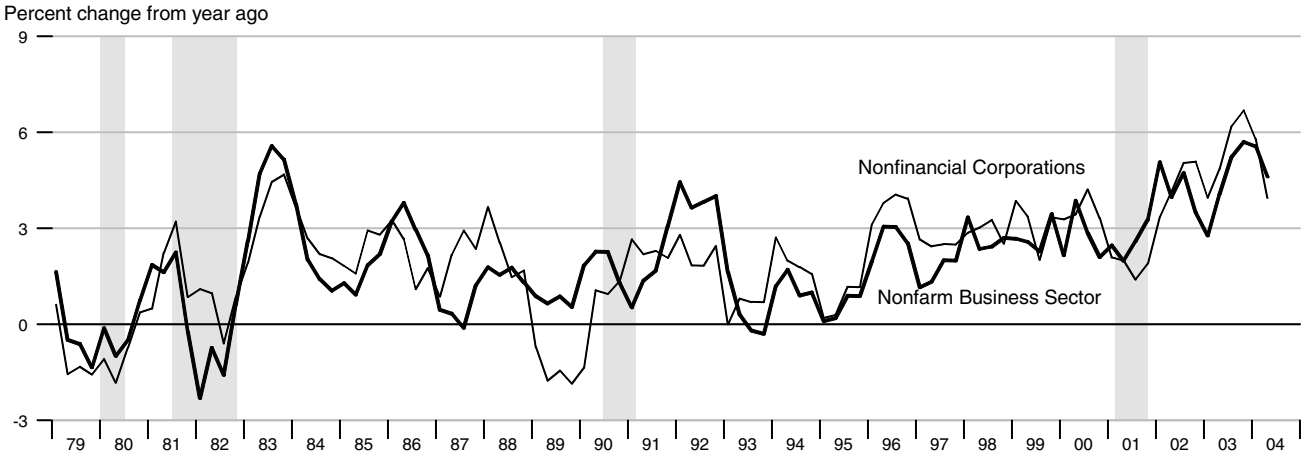


*Data from 1987 to the present are on a NAICS basis; data prior to 1987 are on an SIC basis and are not strictly comparable (see End Note).

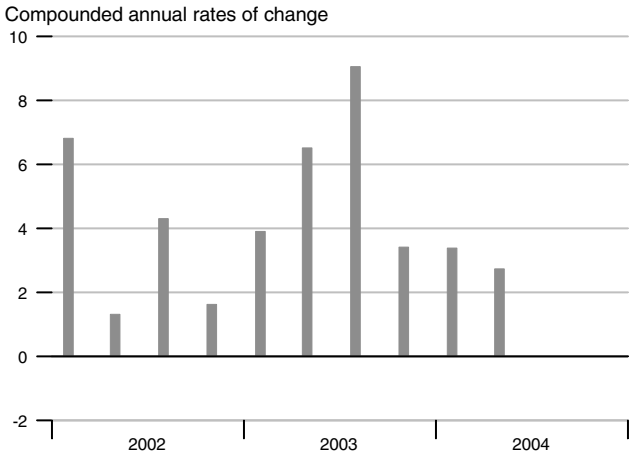
Nonfarm Compensation per Hour



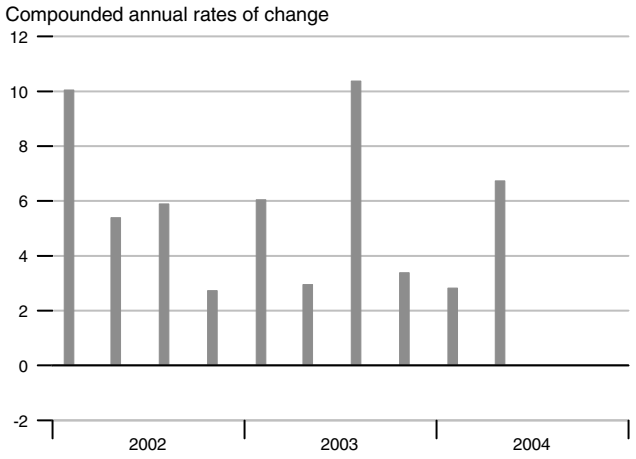
Output per Hour, Nonfarm Business and Nonfinancial Corporations



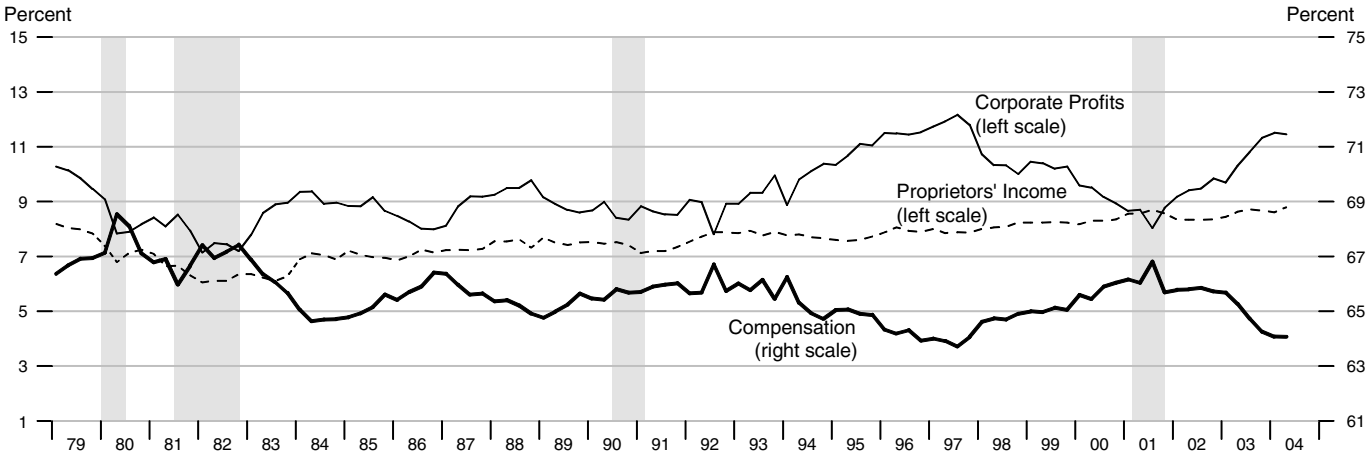
Nonfarm Output per Hour



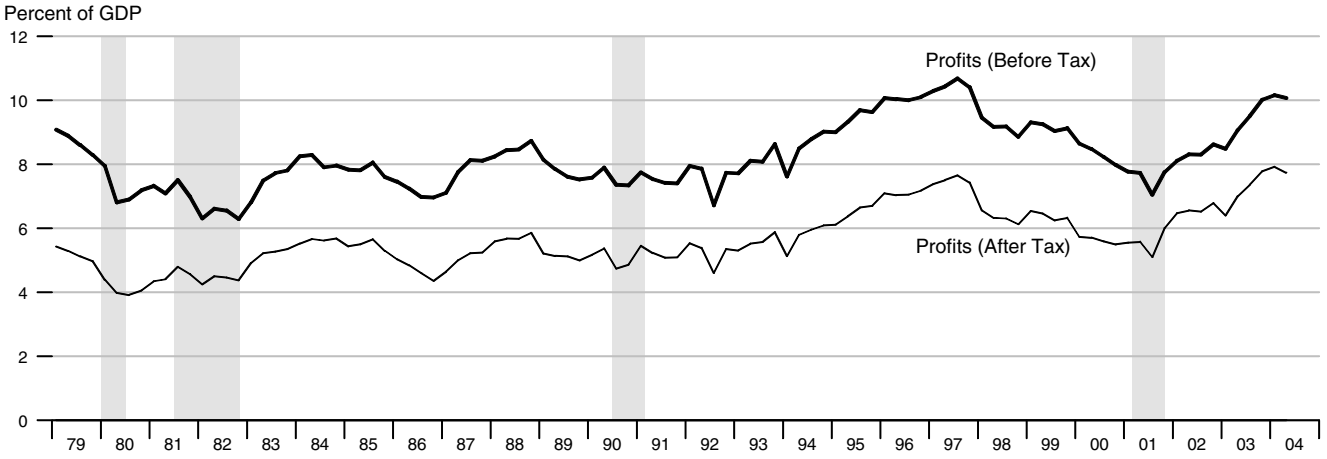
Manufacturing Output per Hour



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
2000		9817.0		5.9	9817.000		3.7	9760.500		3.8		56.500
2001		10100.8		2.9	9866.600		0.5	9901.100		1.4		-36.000
2002		10480.8		3.8	10083.000		2.2	10076.900		1.8		5.700
2003		10987.9		4.8	10398.000		3.1	10395.000		3.2		-0.700
2001	1	10021.5	2.8	4.1	9875.600	-0.5	1.9	9883.200	1.6	2.2	-7.800	47.800
	2	10128.9	4.4	3.1	9905.900	1.2	0.6	9908.700	1.0	1.6	-2.500	22.350
	3	10135.1	0.2	2.8	9871.100	-1.4	0.4	9899.900	-0.4	1.2	-29.900	0.825
	4	10226.3	3.6	2.7	9910.000	1.6	0.2	9992.300	3.8	1.5	-86.700	-31.725
2002	1	10338.2	4.4	3.2	9993.500	3.4	1.2	10000.400	0.3	1.2	-7.400	-31.625
	2	10445.7	4.2	3.1	10052.600	2.4	1.5	10044.900	1.8	1.4	7.900	-29.025
	3	10546.5	3.9	4.1	10117.300	2.6	2.5	10095.200	2.0	2.0	22.700	-15.875
	4	10617.5	2.7	3.8	10135.900	0.7	2.3	10112.500	0.7	1.2	23.800	11.750
2003	1	10744.6	4.9	3.9	10184.400	1.9	1.9	10173.300	2.4	1.7	9.600	16.000
	2	10884.0	5.3	4.2	10287.400	4.1	2.3	10302.500	5.2	2.6	-17.600	9.625
	3	11116.7	8.8	5.4	10472.800	7.4	3.5	10473.900	6.8	3.8	-3.500	3.075
	4	11270.9	5.7	6.2	10580.700	4.2	4.4	10569.600	3.7	4.5	8.600	-0.725
2004	1	11472.6	7.4	6.8	10697.500	4.5	5.0	10655.800	3.3	4.7	40.000	6.875
	2	11657.5	6.6	7.1	10784.700	3.3	4.8	10722.300	2.5	4.1	61.100	26.550

		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
2000		6739.400		4.7	863.300		7.3	1679.000		6.5	1232.100		8.7
2001		6904.600		2.5	899.100		4.1	1625.700		-3.2	1176.800		-4.5
2002		7140.400		3.4	957.200		6.5	1565.800		-3.7	1092.600		-7.2
2003		7365.200		3.1	1027.500		7.3	1635.200		4.4	1125.500		3.0
2001	1	6853.100	1.7	2.9	879.500	6.7	0.8	1678.200	-2.6	1.6	1234.400	-4.3	3.2
	2	6870.300	1.0	2.5	878.900	-0.3	3.2	1640.500	-8.7	-2.9	1190.200	-13.6	-3.9
	3	6900.500	1.8	2.0	885.600	3.1	2.5	1621.900	-4.5	-3.8	1169.300	-6.8	-6.1
	4	7017.600	7.0	2.8	958.700	37.3	10.8	1577.000	-10.6	-6.7	1128.200	-13.3	-9.6
2002	1	7049.700	1.8	2.9	937.800	-8.4	6.6	1559.600	-4.3	-7.1	1099.800	-9.7	-10.9
	2	7099.200	2.8	3.3	947.800	4.3	7.8	1545.900	-3.5	-5.8	1072.400	-9.6	-9.9
	3	7149.900	2.9	3.6	979.300	14.0	10.6	1546.600	0.2	-4.6	1069.500	-1.1	-8.5
	4	7194.600	2.5	2.5	973.400	-2.4	1.5	1543.500	-0.8	-2.1	1060.900	-3.2	-6.0
2003	1	7242.200	2.7	2.7	973.200	-0.1	3.8	1552.700	2.4	-0.4	1060.500	-0.2	-3.6
	2	7311.400	3.9	3.0	1020.000	20.7	7.6	1593.400	10.9	3.1	1090.600	11.8	1.7
	3	7401.700	5.0	3.5	1059.600	16.5	8.2	1660.600	18.0	7.4	1131.100	15.7	5.8
	4	7466.800	3.6	3.8	1069.700	3.9	9.9	1702.700	10.5	10.3	1161.000	11.0	9.4
2004	1	7543.000	4.1	4.2	1075.500	2.2	10.5	1721.400	4.5	10.9	1173.000	4.2	10.6
	2	7572.400	1.6	3.6	1074.700	-0.3	5.4	1778.300	13.9	11.6	1207.900	12.4	10.8

	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
2000	100.000		2.2	148.9		4.6	146.0		4.1	156.0		5.7
2001	102.376		2.4	155.0		4.1	151.4		3.7	163.7		4.9
2002	103.949		1.5	160.9		3.8	156.4		3.3	171.7		4.9
2003	105.686		1.7	167.3		4.0	161.0		2.9	182.5		6.3
2001 1	101.507	3.3	2.2	152.7	4.3	4.2	149.4	4.1	3.8	160.7	4.6	5.0
2	102.290	3.1	2.5	154.2	4.0	4.0	150.8	3.8	3.7	162.5	4.6	4.8
3	102.690	1.6	2.4	155.7	3.9	3.9	152.0	3.2	3.6	164.7	5.5	4.9
4	103.122	1.7	2.4	157.4	4.4	4.2	153.5	4.0	3.8	167.0	5.7	5.1
2002 1	103.470	1.4	1.9	158.8	3.6	4.0	154.8	3.4	3.6	168.4	3.4	4.8
2	103.853	1.5	1.5	160.5	4.4	4.1	156.2	3.7	3.6	170.8	5.8	5.1
3	104.280	1.7	1.5	161.5	2.5	3.7	156.9	1.8	3.2	172.6	4.3	4.8
4	104.786	2.0	1.6	162.8	3.3	3.4	157.7	2.1	2.7	175.0	5.7	4.8
2003 1	105.490	2.7	2.0	165.0	5.5	3.9	159.3	4.1	2.9	178.6	8.5	6.1
2	105.780	1.1	1.9	166.4	3.4	3.7	160.3	2.5	2.6	181.1	5.7	6.0
3	106.158	1.4	1.8	168.2	4.4	4.1	161.7	3.5	3.1	183.8	6.1	6.5
4	106.586	1.6	1.7	169.5	3.1	4.1	162.5	2.0	3.0	186.3	5.6	6.5
2004 1	107.314	2.8	1.7	171.3	4.3	3.8	163.5	2.5	2.6	191.2	10.9	7.1
2	108.169	3.2	2.3	173.0	4.0	4.0	164.4	2.2	2.6	194.5	7.1	7.4

	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
2000	1096.300		8.7	1475.800		13.1	115.3		2.8	133.7		7.0
2001	1039.000		-5.2	1437.100		-2.6	117.8		2.2	138.9		3.9
2002	1014.200		-2.4	1484.700		3.3	123.6		4.9	142.1		2.3
2003	1034.700		2.0	1543.800		4.0	129.1		4.4	147.1		3.5
2001 1	1097.200	-5.3	3.4	1495.400	-3.7	5.9	116.5	-0.3	2.5	138.1	6.6	4.5
2	1060.600	-12.7	-2.9	1445.800	-12.6	-1.4	118.1	5.6	2.0	138.9	2.3	4.9
3	1008.700	-18.2	-9.9	1407.100	-10.3	-7.2	118.5	1.4	2.6	139.6	2.0	3.3
4	980.300	-10.8	-11.9	1394.900	-3.4	-7.6	120.4	6.6	3.3	140.7	3.2	3.5
2002 1	991.600	4.7	-9.6	1436.500	12.5	-3.9	122.4	6.8	5.1	142.6	5.5	3.3
2	1017.800	11.0	-4.0	1475.900	11.4	2.1	122.8	1.3	4.0	143.8	3.4	3.5
3	1025.500	3.1	1.7	1495.300	5.4	6.3	124.1	4.3	4.7	144.3	1.4	3.4
4	1014.500	-4.2	3.5	1529.800	9.6	9.7	124.6	1.6	3.5	144.7	1.1	2.8
2003 1	1010.600	-1.5	1.9	1522.300	-1.9	6.0	125.8	3.9	2.8	146.6	5.4	2.8
2	1006.500	-1.6	-1.1	1531.700	2.5	3.8	127.8	6.5	4.1	148.7	5.9	3.4
3	1033.800	11.3	0.8	1542.500	2.9	3.2	130.6	9.1	5.2	150.9	6.1	4.6
4	1076.200	17.4	6.1	1604.500	17.1	4.9	131.7	3.4	5.7	152.5	4.3	5.4
2004 1	1095.400	7.3	8.4	1645.500	10.6	8.1	132.8	3.4	5.6	153.3	2.1	4.6
2	1114.800	7.3	10.8	1695.100	12.6	10.7	133.7	2.7	4.6	154.9	4.2	4.2

		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
1999		133501	2025		1.5	128992	3068		2.4	101.6			2.1
2000		136902	3401		2.5	131791	2800		2.2	103.5			1.8
2001		136944	42		0.0	131837	46		0.0	102.1			-1.3
2002		136487	-456		-0.3	130343	-1494		-1.1	100.0			-2.1
2003		137739	1252		0.9	129937	-406		-0.3	98.6			-1.3
2002	1	136061	-192	-0.6	-1.2	130448	-463	-1.4	-1.5	100.3	-0.3	-1.2	-3.0
	2	136318	257	0.8	-0.5	130389	-60	-0.2	-1.4	100.2	-0.0	-0.1	-2.3
	3	136875	557	1.6	0.1	130287	-102	-0.3	-1.1	99.8	-0.4	-1.6	-2.0
	4	136694	-181	-0.5	0.3	130248	-39	-0.1	-0.5	99.5	-0.4	-1.5	-1.1
2003	1	137355	661	1.9	1.0	130047	-200	-0.6	-0.3	99.0	-0.5	-1.9	-1.3
	2	137585	230	0.7	0.9	129878	-170	-0.5	-0.4	98.5	-0.5	-2.0	-1.7
	3	137647	62	0.2	0.6	129820	-58	-0.2	-0.4	98.2	-0.3	-1.1	-1.6
	4	138369	722	2.1	1.2	130002	182	0.6	-0.2	98.7	0.5	1.9	-0.8
2004	1	138388	19	0.1	0.8	130367	365	1.1	0.2	99.3	0.6	2.3	0.3
	2	138793	405	1.2	0.9	131125	758	2.3	1.0	99.8	0.5	2.2	1.3
2002	Aug	136811	333	3.0	0.4	130306	11	0.1	-1.2	99.9	0.2	2.4	-2.0
	Sep	137337	526	4.7	0.3	130259	-47	-0.4	-1.0	99.9	0.0	0.0	-1.4
	Oct	137079	-258	-2.2	0.5	130342	83	0.8	-0.7	99.6	-0.3	-3.5	-1.0
	Nov	136545	-534	-4.6	0.2	130305	-37	-0.3	-0.4	99.5	-0.1	-1.2	-1.0
	Dec	136459	-86	-0.8	0.3	130096	-209	-1.9	-0.4	99.3	-0.2	-2.4	-1.3
2003	Jan	137447	988	9.0	1.3	130190	94	0.9	-0.2	99.3	0.0	0.0	-1.0
	Feb	137318	-129	-1.1	0.7	130031	-159	-1.5	-0.3	98.8	-0.5	-5.9	-1.4
	Mar	137300	-18	-0.2	0.9	129921	-110	-1.0	-0.4	98.9	0.1	1.2	-1.4
	Apr	137578	278	2.5	1.1	129901	-20	-0.2	-0.4	98.3	-0.6	-7.0	-2.1
	May	137505	-73	-0.6	0.7	129873	-28	-0.3	-0.4	98.6	0.3	3.7	-1.3
	Jun	137673	168	1.5	1.0	129859	-14	-0.1	-0.4	98.6	0.0	0.0	-1.8
	Jul	137604	-69	-0.6	0.8	129814	-45	-0.4	-0.4	98.2	-0.4	-4.8	-1.5
	Aug	137693	89	0.8	0.6	129789	-25	-0.2	-0.4	98.2	0.0	0.0	-1.7
	Sep	137644	-49	-0.4	0.2	129856	67	0.6	-0.3	98.3	0.1	1.2	-1.6
	Oct	138095	451	4.0	0.7	129944	88	0.8	-0.3	98.7	0.4	5.0	-0.9
	Nov	138533	438	3.9	1.5	130027	83	0.8	-0.2	99.0	0.3	3.7	-0.5
	Dec	138479	-54	-0.5	1.5	130035	8	0.1	-0.0	98.4	-0.6	-7.0	-0.9
2004	Jan	138566	87	0.8	0.8	130194	159	1.5	0.0	99.1	0.7	8.9	-0.2
	Feb	138301	-265	-2.3	0.7	130277	83	0.8	0.2	99.2	0.1	1.2	0.4
	Mar	138298	-3	-0.0	0.7	130630	353	3.3	0.5	99.5	0.3	3.7	0.6
	Apr	138576	278	2.4	0.7	130954	324	3.0	0.8	99.5	0.0	0.0	1.2
	May	138772	196	1.7	0.9	131162	208	1.9	1.0	100.2	0.7	8.8	1.6
	Jun	139031	259	2.3	1.0	131258	96	0.9	1.1	99.7	-0.5	-5.8	1.1
	Jul	139660	629	5.6	1.5	131331	73	0.7	1.2	100.4	0.7	8.8	2.2
	Aug	139681	21	0.2	1.4	131475	144	1.3	1.3	100.6	0.2	2.4	2.4

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields (Percent)	
			Billions of dollars	Percent change Monthly/ quarterly	Percent change Annual rate	Year ago	Index	Percent change Monthly/ quarterly	Percent change Annual rate	Year ago	3-mo	10-yr
1999		4.2	3162.430			8.4	110.577			4.4	4.64	5.64
2000		4.0	3372.438			6.6	115.429			4.4	5.82	6.03
2001		4.8	3475.898			3.1	111.516			-3.4	3.39	5.02
2002		5.8	3564.420			2.5	110.876			-0.6	1.60	4.61
2003		6.0	3755.519			5.4	111.213			0.3	1.01	4.02
2002	1	5.7	878.111	-1.2	-4.7	2.4	109.985	0.5	1.9	-3.2	1.72	5.08
	2	5.8	888.077	1.1	4.6	2.3	111.132	1.0	4.2	-1.0	1.72	5.10
	3	5.7	896.786	1.0	4.0	4.1	111.455	0.3	1.2	0.7	1.64	4.26
	4	5.9	901.446	0.5	2.1	1.4	110.933	-0.5	-1.9	1.3	1.33	4.01
2003	1	5.8	913.320	1.3	5.4	4.0	111.172	0.2	0.9	1.1	1.16	3.92
	2	6.1	927.858	1.6	6.5	4.5	110.033	-1.0	-4.0	-1.0	1.04	3.62
	3	6.1	952.137	2.6	10.9	6.2	111.059	0.9	3.8	-0.4	0.93	4.23
	4	5.9	962.204	1.1	4.3	6.7	112.586	1.4	5.6	1.5	0.92	4.29
2004	1	5.6	984.732	2.3	9.7	7.8	114.400	1.6	6.6	2.9	0.92	4.02
	2	5.6	1000.594	1.6	6.6	7.8	115.753	1.2	4.8	5.2	1.08	4.60
	3										1.49	4.30
2002	Sep	5.7	296.786	-1.3	-14.1	4.4	111.330	-0.1	-1.7	1.1	1.63	3.87
	Oct	5.7	298.500	0.6	7.2	-1.5	111.031	-0.3	-3.2	1.0	1.58	3.94
	Nov	5.9	299.976	0.5	6.1	2.1	111.156	0.1	1.4	1.6	1.23	4.05
	Dec	6.0	302.970	1.0	12.7	3.7	110.612	-0.5	-5.7	1.4	1.19	4.03
2003	Jan	5.8	304.711	0.6	7.1	4.6	111.164	0.5	6.2	1.3	1.17	4.05
	Feb	5.9	301.347	-1.1	-12.5	2.7	111.581	0.4	4.6	1.5	1.17	3.90
	Mar	5.8	307.262	2.0	26.3	4.8	110.771	-0.7	-8.4	0.4	1.13	3.81
	Apr	6.0	308.132	0.3	3.5	3.6	110.094	-0.6	-7.1	-0.6	1.13	3.96
	May	6.1	307.397	-0.2	-2.8	4.6	110.019	-0.1	-0.8	-0.8	1.07	3.57
	Jun	6.3	312.329	1.6	21.0	5.2	109.986	-0.0	-0.4	-1.5	0.92	3.33
	Jul	6.2	315.123	0.9	11.3	5.2	110.829	0.8	9.6	-0.6	0.90	3.98
	Aug	6.1	319.550	1.4	18.2	6.3	110.857	0.0	0.3	-0.6	0.95	4.45
	Sep	6.1	317.464	-0.7	-7.6	7.0	111.492	0.6	7.1	0.1	0.94	4.27
	Oct	6.0	318.064	0.2	2.3	6.6	111.776	0.3	3.1	0.7	0.92	4.29
	Nov	5.9	321.798	1.2	15.0	7.3	112.859	1.0	12.3	1.5	0.93	4.30
	Dec	5.7	322.342	0.2	2.0	6.4	113.124	0.2	2.9	2.3	0.90	4.27
2004	Jan	5.6	323.918	0.5	6.0	6.3	113.791	0.6	7.3	2.4	0.88	4.15
	Feb	5.6	326.996	1.0	12.0	8.5	114.755	0.8	10.7	2.8	0.93	4.08
	Mar	5.7	333.818	2.1	28.1	8.6	114.653	-0.1	-1.1	3.5	0.94	3.83
	Apr	5.6	331.131	-0.8	-9.2	7.5	115.267	0.5	6.6	4.7	0.94	4.35
	May	5.6	335.920	1.4	18.8	9.3	116.220	0.8	10.4	5.6	1.02	4.72
	Jun	5.6	333.543	-0.7	-8.2	6.8	115.771	-0.4	-4.5	5.3	1.27	4.73
	Jul	5.5	336.137	0.8	9.7	6.7	116.483	0.6	7.6	5.1	1.33	4.50
	Aug	5.4	335.239	-0.3	-3.2	4.9	116.620	0.1	1.4	5.2	1.48	4.28
	Sep										1.65	4.13

		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
1999		166.6			2.2		177.0			2.1		132.8			1.7
2000		172.2			3.4		181.3			2.4		138.0			3.9
2001		177.0			2.8		186.1			2.7		140.7			2.0
2002		179.9			1.6		190.4			2.3		138.9			-1.3
2003		184.0			2.3		193.2			1.5		143.3			3.2
2002	1	178.0	0.3	1.3	1.2	1.3	188.9	0.5	2.1	2.5	2.1	138.3	-0.0	-0.2	-2.4
	2	179.5	0.9	3.5	1.3	2.4	190.0	0.5	2.2	2.4	2.2	138.8	0.4	1.5	-2.3
	3	180.5	0.6	2.2	1.6	2.3	191.0	0.5	2.2	2.2	2.2	138.7	-0.0	-0.2	-1.4
	4	181.4	0.5	1.9	2.2	2.2	191.8	0.4	1.6	2.0	2.0	139.7	0.7	2.7	0.9
2003	1	183.1	1.0	3.9	2.9	3.9	192.4	0.3	1.3	1.8	1.3	142.8	2.3	9.4	3.3
	2	183.4	0.1	0.6	2.2	2.2	192.9	0.3	1.1	1.5	1.2	142.4	-0.3	-1.3	2.6
	3	184.5	0.6	2.3	2.2	2.3	193.6	0.3	1.4	1.3	1.3	143.4	0.7	2.8	3.3
	4	184.8	0.2	0.7	1.9	1.9	194.0	0.2	1.0	1.2	1.2	144.7	0.9	3.7	3.6
2004	1	186.4	0.9	3.6	1.8	3.6	194.9	0.4	1.8	1.3	1.8	146.1	1.0	3.9	2.3
	2	188.6	1.2	4.7	2.8	4.2	196.3	0.7	3.0	1.8	2.4	148.3	1.5	6.3	4.2
2002	Aug	180.6	0.3	3.4	1.7	2.9	191.1	0.3	3.8	2.3	2.2	138.6	0.0	0.0	-1.4
	Sep	180.9	0.2	2.0	1.6	2.8	191.4	0.2	1.9	2.3	2.2	139.0	0.3	3.5	-1.6
	Oct	181.2	0.2	2.0	2.0	2.7	191.5	0.1	0.6	2.2	2.0	140.0	0.7	9.0	0.7
	Nov	181.4	0.1	1.3	2.2	2.6	191.8	0.2	1.9	2.0	2.0	139.7	-0.2	-2.5	0.9
	Dec	181.6	0.1	1.3	2.5	2.5	192.0	0.1	1.3	2.0	2.0	139.3	-0.3	-3.4	1.2
2003	Jan	182.2	0.3	4.0	2.6	4.0	192.2	0.1	1.3	1.9	1.3	141.1	1.3	16.7	2.5
	Feb	183.2	0.5	6.8	3.0	5.4	192.4	0.1	1.3	1.8	1.3	142.8	1.2	15.5	3.4
	Mar	184.0	0.4	5.4	3.1	5.4	192.5	0.1	0.6	1.7	1.0	144.6	1.3	16.2	4.0
	Apr	183.4	-0.3	-3.8	2.2	3.0	192.6	0.1	0.6	1.5	0.9	142.5	-1.5	-16.1	2.4
	May	183.3	-0.1	-0.7	2.1	2.3	193.0	0.2	2.5	1.6	1.3	141.9	-0.4	-4.9	2.5
	Jun	183.5	0.1	1.3	2.1	2.1	193.1	0.1	0.6	1.5	1.1	142.7	0.6	7.0	2.8
	Jul	183.8	0.2	2.0	2.1	2.1	193.4	0.2	1.9	1.5	1.3	142.8	0.1	0.8	3.0
	Aug	184.5	0.4	4.7	2.2	2.4	193.6	0.1	1.2	1.3	1.3	143.5	0.5	6.0	3.5
	Sep	185.1	0.3	4.0	2.3	2.6	193.7	0.1	0.6	1.2	1.2	143.8	0.2	2.5	3.5
	Oct	184.9	-0.1	-1.3	2.0	2.2	194.0	0.2	1.9	1.3	1.3	144.7	0.6	7.8	3.4
	Nov	184.6	-0.2	-1.9	1.8	1.8	194.0	0.0	0.0	1.1	1.1	144.5	-0.1	-1.6	3.4
	Dec	184.9	0.2	2.0	1.8	1.8	194.1	0.1	0.6	1.1	1.1	144.8	0.2	2.5	3.9
2004	Jan	185.8	0.5	6.0	2.0	6.0	194.4	0.2	1.9	1.1	1.9	145.7	0.6	7.7	3.3
	Feb	186.3	0.3	3.3	1.7	4.6	194.8	0.2	2.5	1.2	2.2	145.8	0.1	0.8	2.1
	Mar	187.2	0.5	6.0	1.7	5.1	195.5	0.4	4.4	1.6	2.9	146.7	0.6	7.7	1.5
	Apr	187.6	0.2	2.6	2.3	4.4	196.0	0.3	3.1	1.8	3.0	147.7	0.7	8.5	3.6
	May	188.8	0.6	8.0	3.0	5.1	196.4	0.2	2.5	1.8	2.9	148.8	0.7	9.3	4.9
	Jun	189.4	0.3	3.9	3.2	4.9	196.6	0.1	1.2	1.8	2.6	148.4	-0.3	-3.2	4.0
	Jul	189.3	-0.1	-0.6	3.0	4.1	196.8	0.1	1.2	1.8	2.4	148.5	0.1	0.8	4.0
	Aug	189.4	0.1	0.6	2.7	3.7	196.9	0.1	0.6	1.7	2.2	148.4	-0.1	-0.8	3.4

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).