

## Computer Use and Productivity Growth

The application of computing technologies by U.S. firms has exploded in recent years. Between 1990 and 2000, the average annual growth rate of real investment in computer capital was about 33 percent. Ever-declining prices of computer equipment, in quality-adjusted terms, allow firms to pursue more powerful and sophisticated applications of computers and improve the efficiency of basic business functions, such as supply-chain management. Although the rapid growth of computer investment contributes directly to business investment spending, economists have for a long time wondered how computer investment affects productivity. The impact could be substantial if the use of computers facilitates a broad collection of complementary innovations within firms. Until recently, however, the connection between computer use and business productivity growth has been unclear.<sup>1</sup>

Reexamining standard growth-accounting techniques, similar to those used in this publication, economists have identified in recent studies that computers do have potentially large effects on productivity growth—particularly in the long run, when computing technologies interact fully with a firm’s business practices. Because the benefits of computers are largely oriented toward intangible aspects of business activity, the impact of computer use may not be reflected in aggregate statistics. Indeed, investment in these technologies may have little direct impact on a firm’s productivity; only when these technologies are combined with organizational aspects over time do the contributions of computer investment become apparent. One example is Wal-Mart’s proprietary software that processes a large array of computer-collected data to determine specific goods to stock at specific stores at specific times of year, as well as their prices.

Brynjolfsson and Hitt (2003) estimate the impact of computers on productivity by using firm-level data to reduce measurement problems of outputs and inputs that exist in industry-level data.<sup>2</sup> They find that computer use accounts for a substantial share of total factor productivity (TFP) and output growth.<sup>3</sup> They also find that computer investment has its maximal impact on productivity after

about seven years. They estimate that, between 1987 and 1994, about 0.25 to 0.50 percentage points of TFP growth at the firm level was generated by the use of computer capital, which grew by about 25 percent per year.

Although many studies focus on TFP growth, computers also contribute to labor productivity growth by increasing the stock of capital per worker. As seen in the chart, computer investment accelerated early in the 1990s, long before the “new economy” productivity acceleration took place. If the firm-level results are translated to the overall economy, the gains in TFP growth from the 1995-99 flurry of computer investment growth (which exceeded 40 percent per year) should peak around 2006. Hence, there is cause for optimism regarding productivity over the next few years, as the evidence suggests that the benefits from computer use persist long after firms have undertaken the investment.

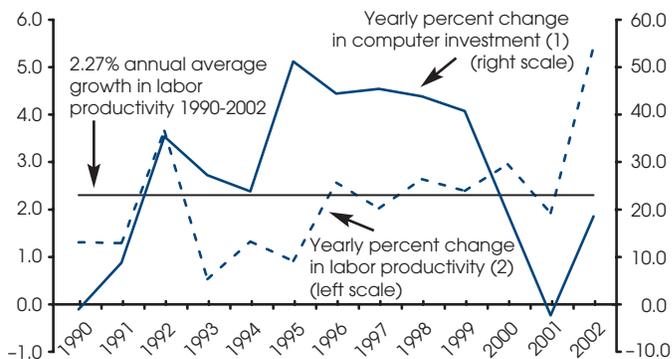
—Rubén Hernández-Murillo

<sup>1</sup>Robert Solow noted a few years back that the computer age is seen everywhere except in productivity data. See Michael R. Pakko: “Accounting for Computers,” Federal Reserve Bank of St. Louis, *National Economic Trends*, May 2001.

<sup>2</sup>See “Computing Productivity: Firm-Level Evidence,” *Review of Economics and Statistics*, November 2003, 85(4), pp. 793-808.

<sup>3</sup>TFP growth, often called the Solow residual, captures the difference in output growth that cannot be explained by capital and labor input growth.

**Productivity and Computer Investment Growth 1990-2002**



NOTE: (1) Real private fixed investment in new computers and peripheral equipment (National Income and Product Accounts). (2) Output per hour for all persons in the nonfarm business sector (U.S. Department of Labor).

# Contents

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## Page

3	Economy at a Glance
4	Output and Growth
7	Interest Rates
8	Inflation and Prices
10	Labor Markets
12	Consumer Spending
14	Investment Spending
16	Government Revenues, Spending, and Debt
18	International Trade
20	Productivity and Profits
22	Quick Reference Tables
27	Notes and Sources

## 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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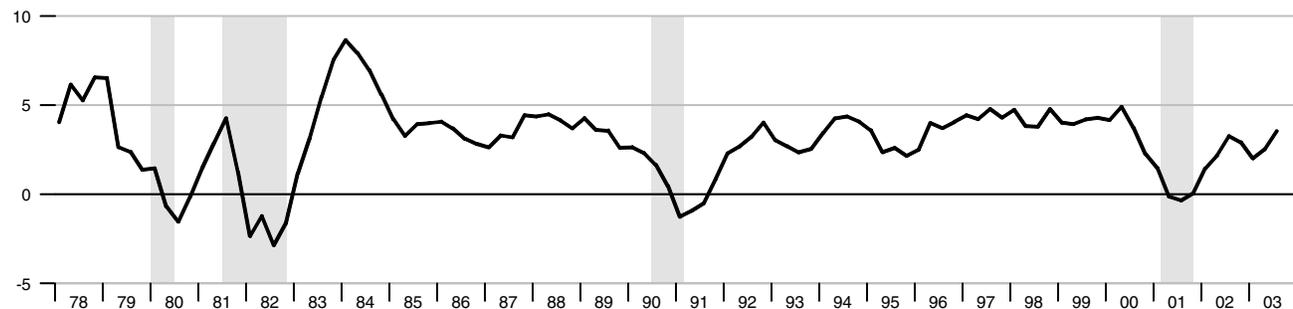
or to:

stlsFRED@stls.frb.org



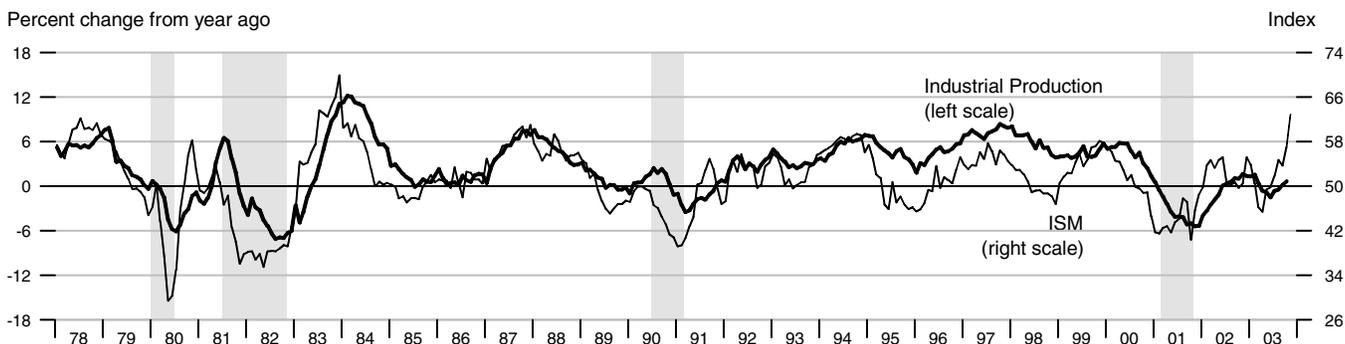
### Real Gross Domestic Product

Percent change from year ago



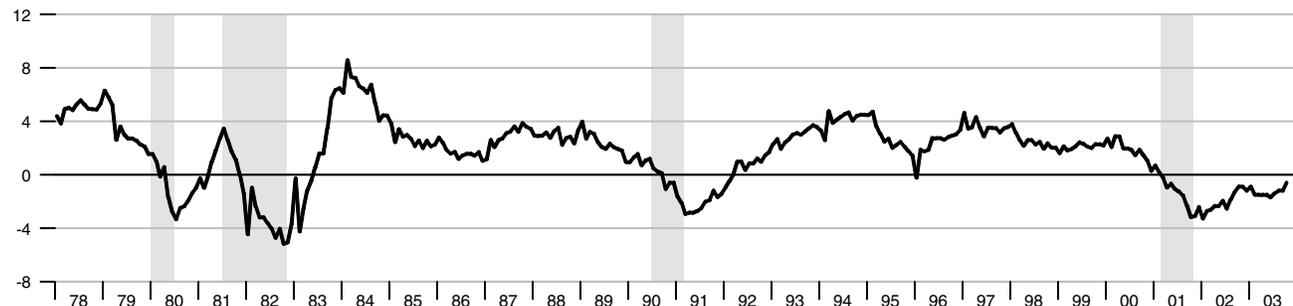
### Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago



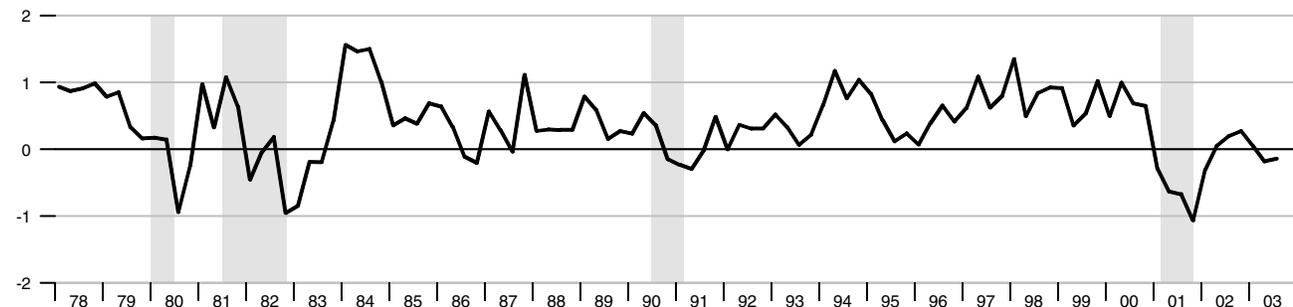
### Aggregate Private Nonfarm Hours

Percent change from year ago

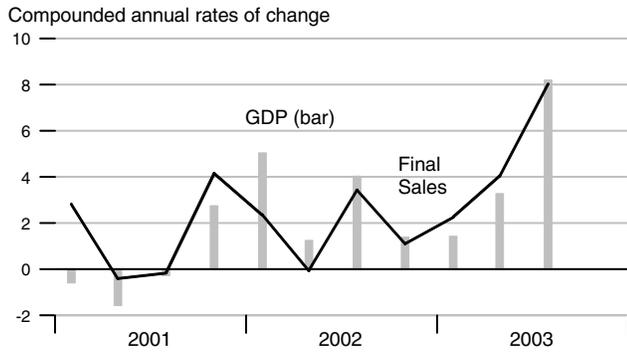


### Real Change in Private Inventories

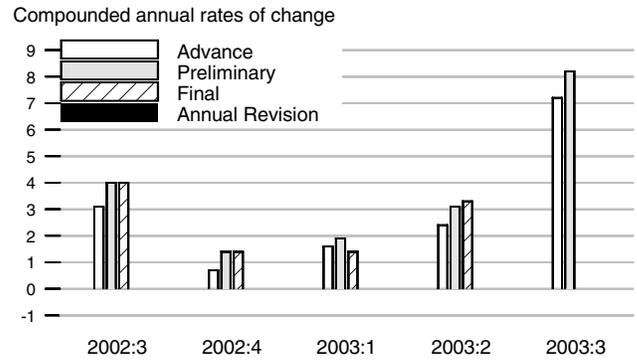
Percent of GDP



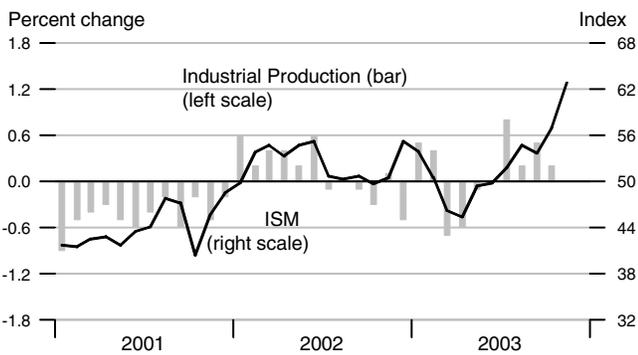
### Real Final Sales and GDP



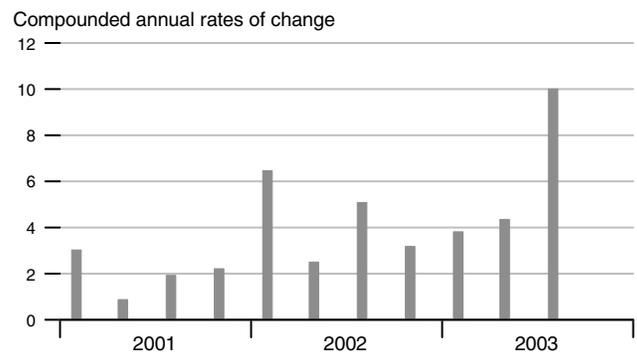
### Real GDP Revisions



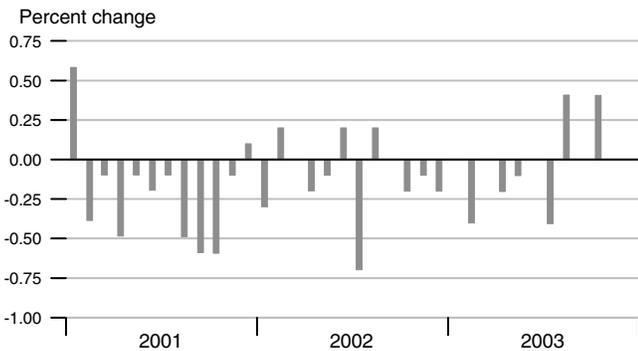
### Industrial Production and ISM Index



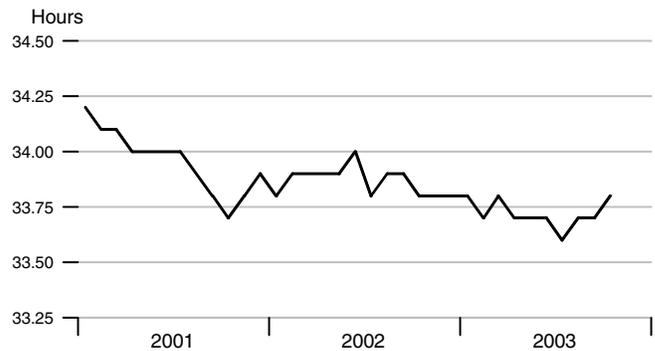
### Nominal Gross Domestic Product



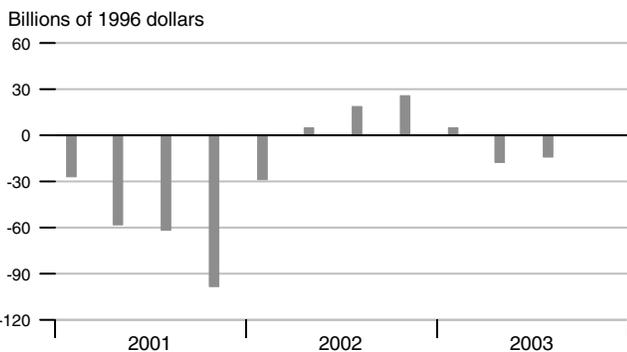
### Aggregate Private Nonfarm Hours



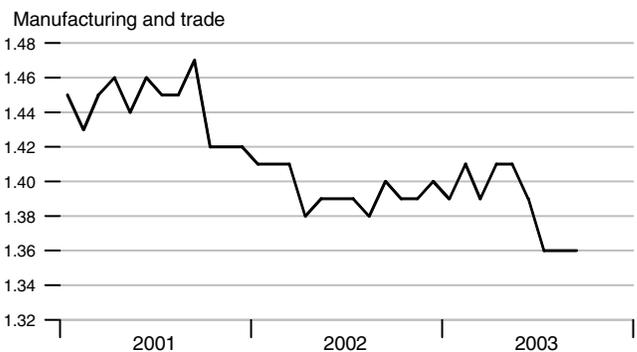
### Average Weekly Private Nonfarm Hours



### Real Change in Private Inventories

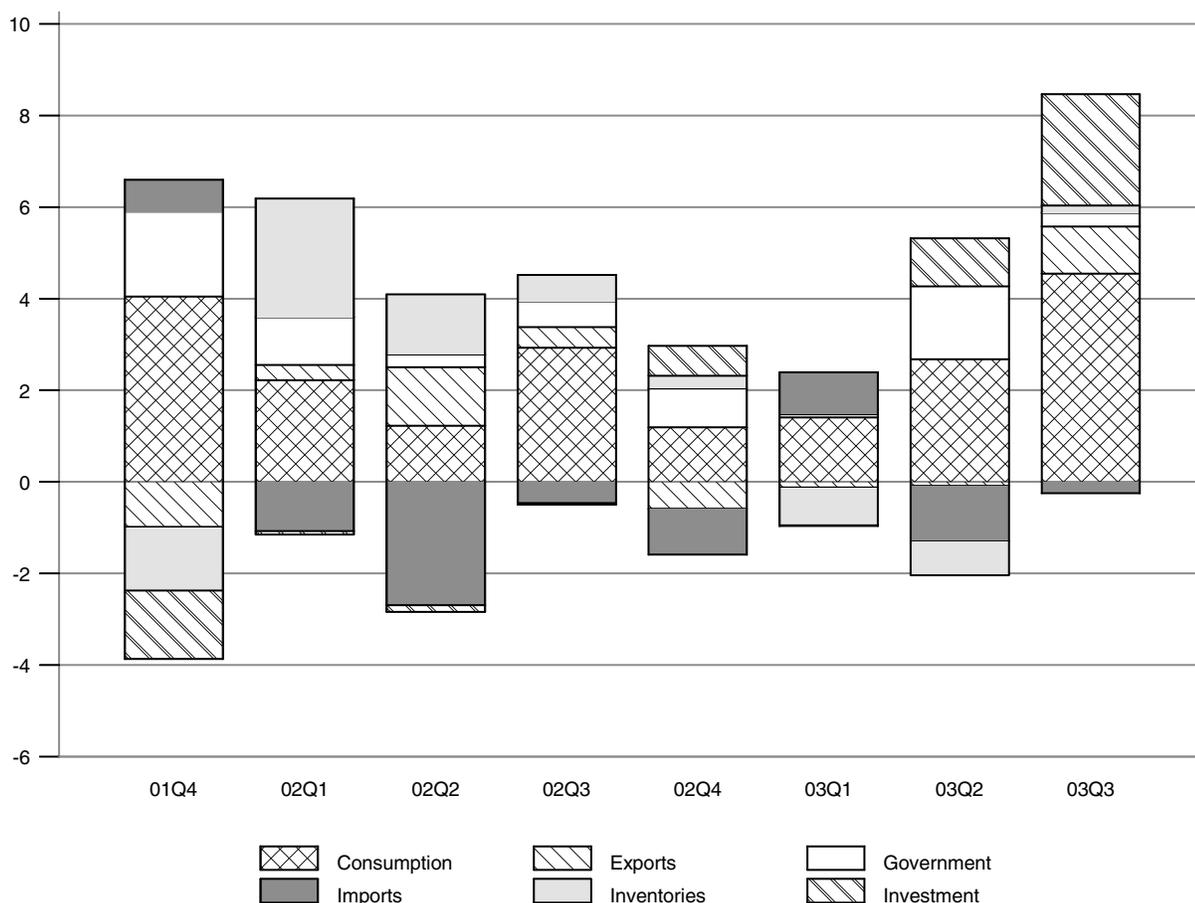


### Inventory-Sales Ratio



### Contribution of Components to Real GDP Growth

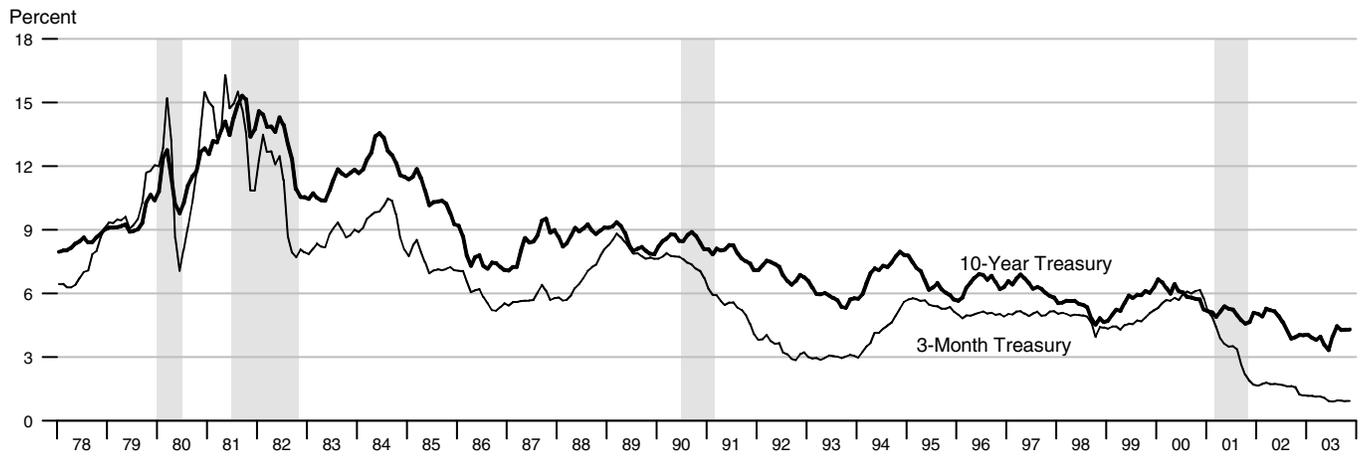
Percentage points at compounded annual rates



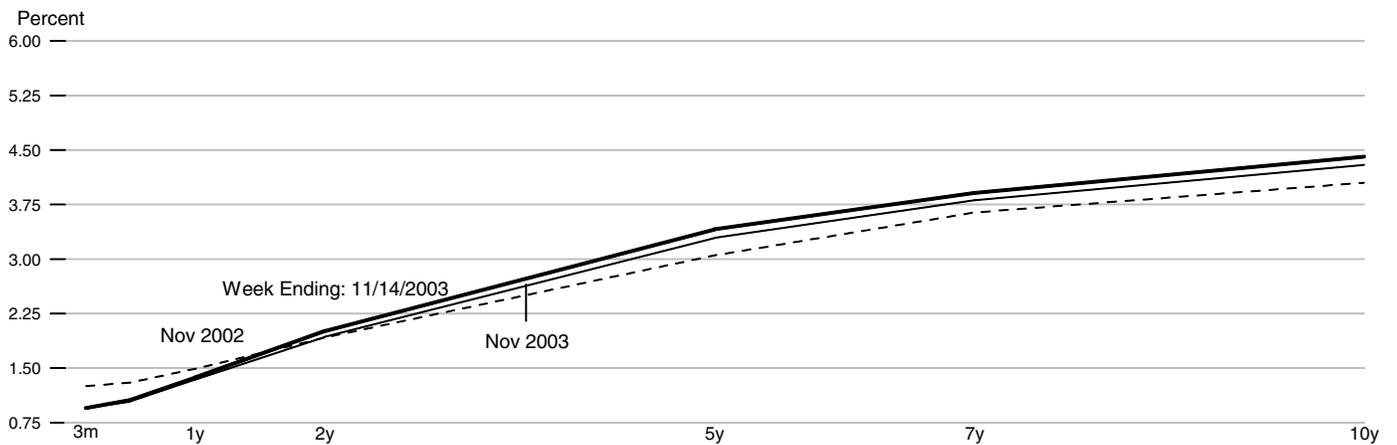
### Contributions to Real GDP Growth Rate

	2001		2002				2003		
	4th	1st	2nd	3rd	4th	1st	2nd	3rd	
<b>Final Sales</b>	4.13	2.44	-0.06	3.45	1.10	2.25	4.02	8.05	
<b>Change in Inventory</b>	-1.39	2.60	1.31	0.58	0.28	-0.82	-0.74	0.16	
<b>Consumption</b>	4.05	2.22	1.22	2.93	1.19	1.40	2.68	4.55	
<b>Fixed Investment</b>	-1.49	-0.07	-0.15	-0.03	0.65	-0.02	1.05	2.42	
Nonresidential	-1.33	-0.66	-0.27	-0.08	0.24	-0.47	0.74	1.40	
Residential	-0.16	0.60	0.12	0.05	0.41	0.45	0.31	1.02	
<b>Government</b>	1.85	1.04	0.27	0.56	0.85	0.08	1.59	0.30	
Federal	0.80	0.47	0.47	0.29	0.70	0.05	1.61	-0.01	
State and Local	1.05	0.56	-0.21	0.27	0.15	0.03	-0.02	0.31	
<b>Net Exports</b>	-0.28	-0.75	-1.40	-0.01	-1.59	0.78	-1.29	0.79	
Exports	-0.99	0.33	1.29	0.45	-0.59	-0.13	-0.09	1.03	
Imports	0.70	-1.08	-2.69	-0.47	-1.00	0.91	-1.21	-0.25	
<b>Residual</b>	0.42	-0.05	0.27	0.06	0.28	0.08	0.37	-0.22	
<b>Real GDP Growth</b>	2.74	5.04	1.25	4.03	1.38	1.43	3.28	8.21	

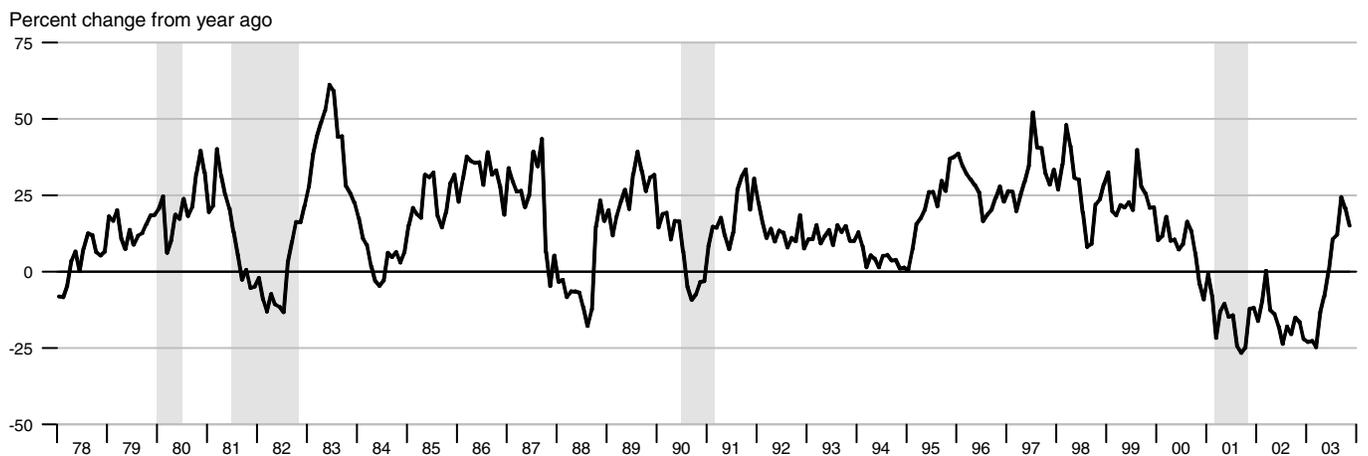
### Interest Rates



### Treasury Yield Curve

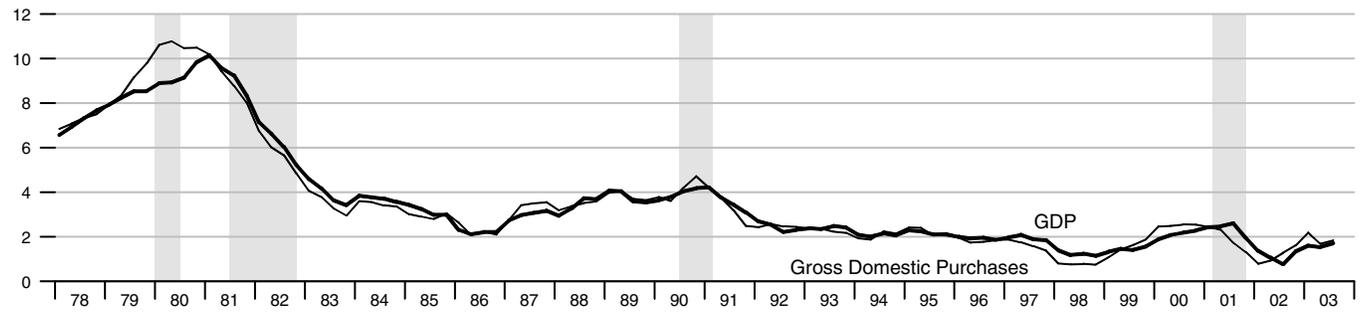


### Standard and Poor's 500 Index with Reinvested Dividends



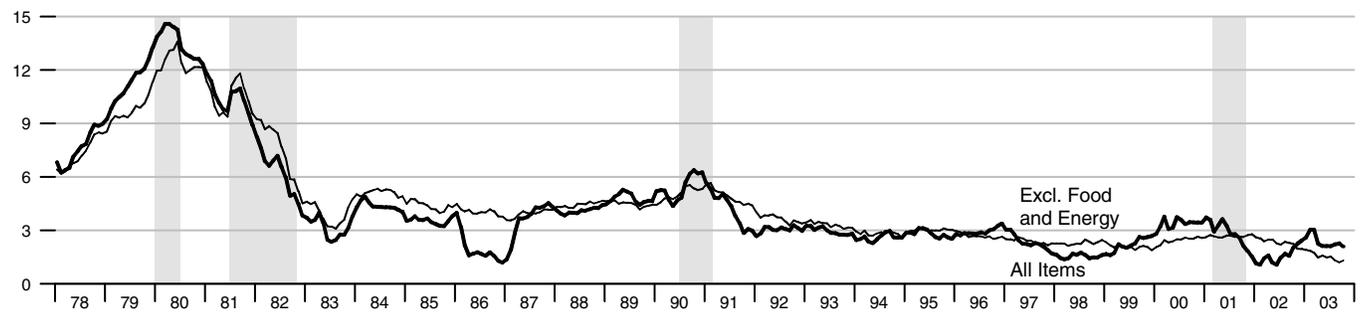
**NIPA Chain Price Indexes**

Percent change from year ago



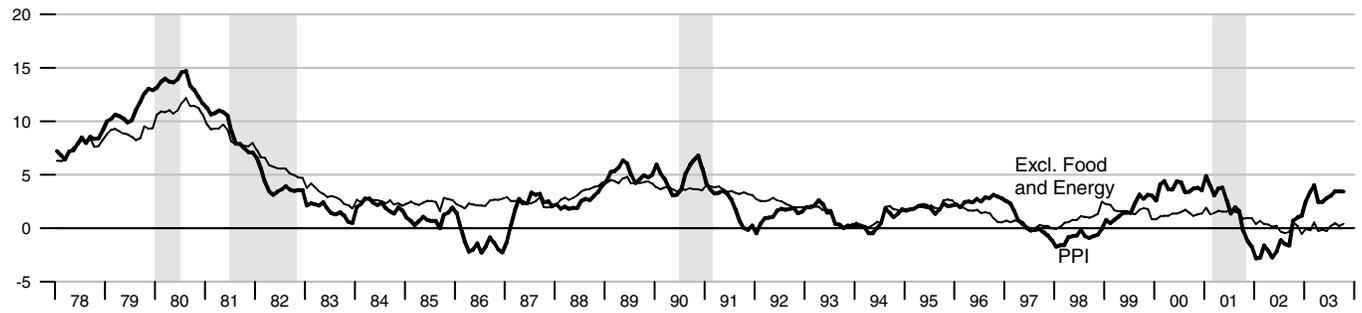
**Consumer Price Index**

Percent change from year ago



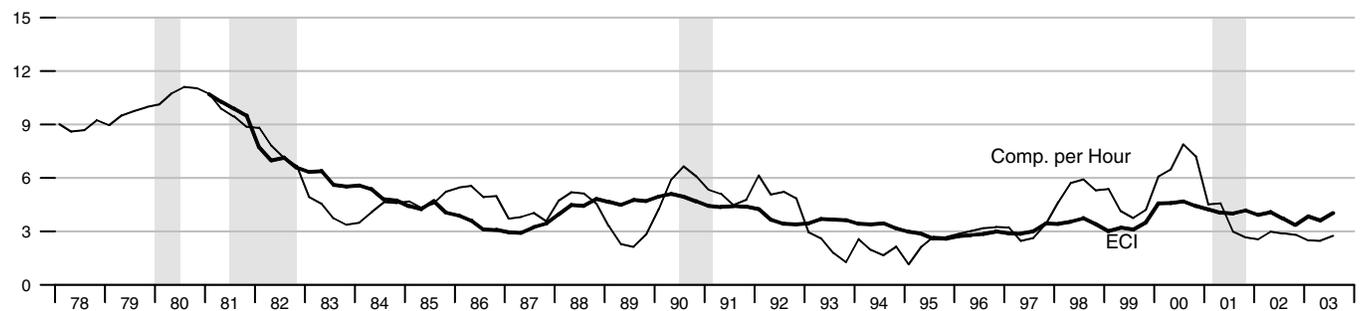
**Producer Price Index, Finished Goods**

Percent change from year ago

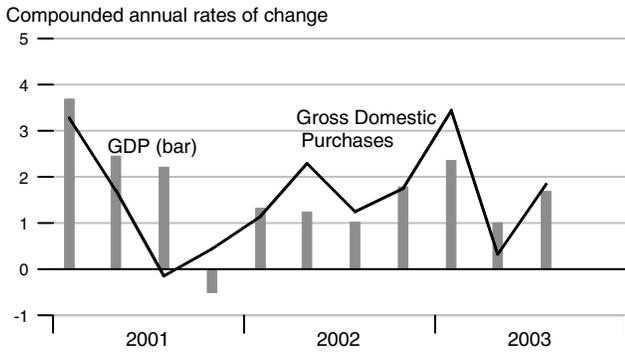


**Employment Cost Index and Compensation per Hour**

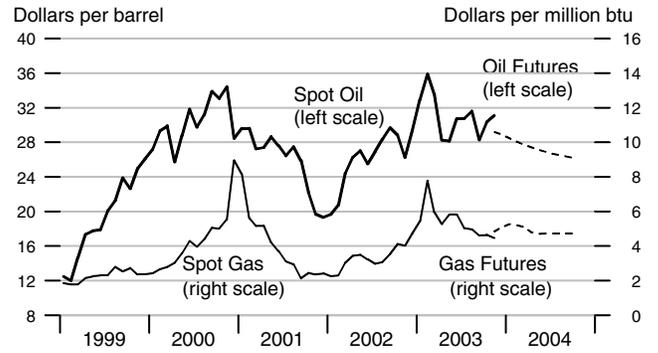
Percent change from year ago



### NIPA Chain Price Indexes

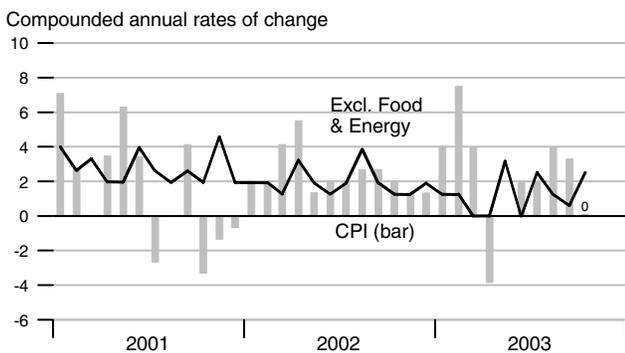


### Oil & Natural Gas Prices: Spot & Futures

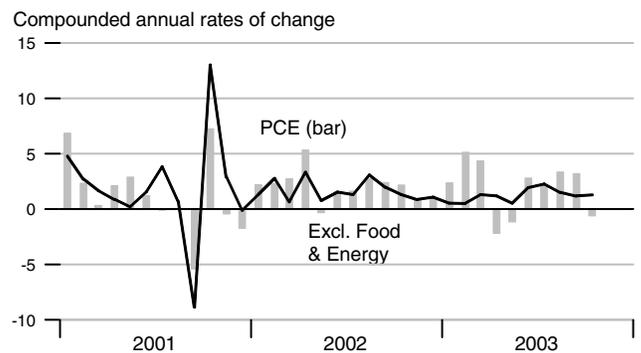


Note: Futures prices as of 12/1/2003.

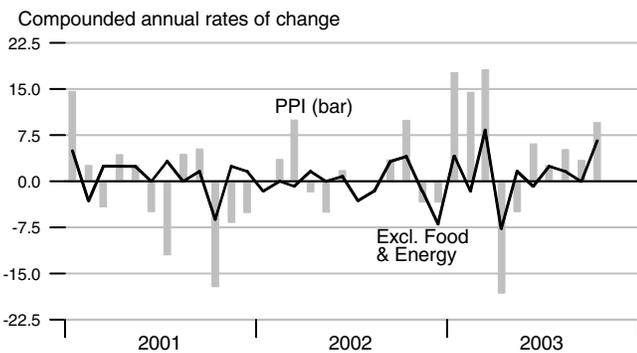
### Consumer Price Index



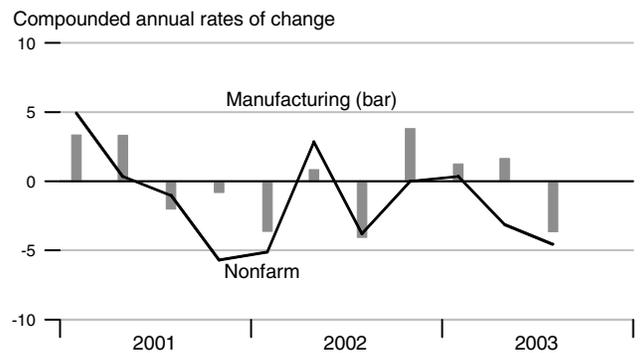
### Consumption Chain Price Index



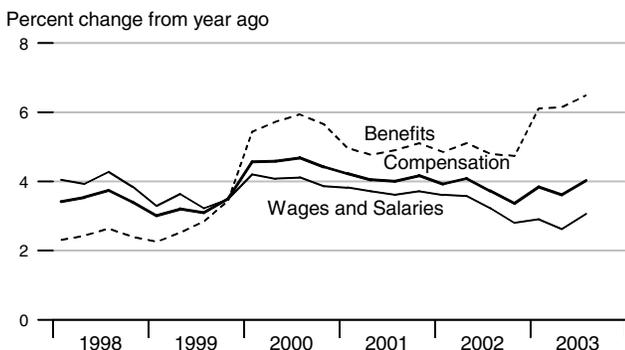
### Producer Price Index, Finished Goods



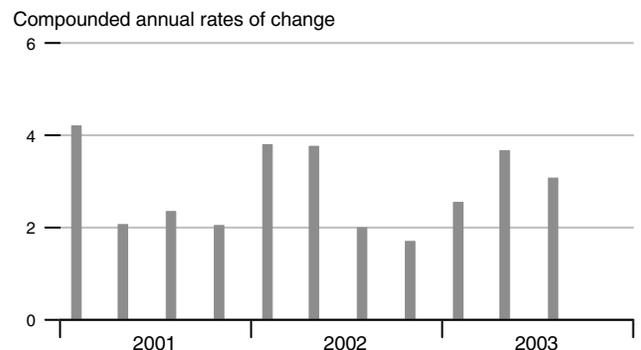
### Unit Labor Cost



### Employment Cost Index

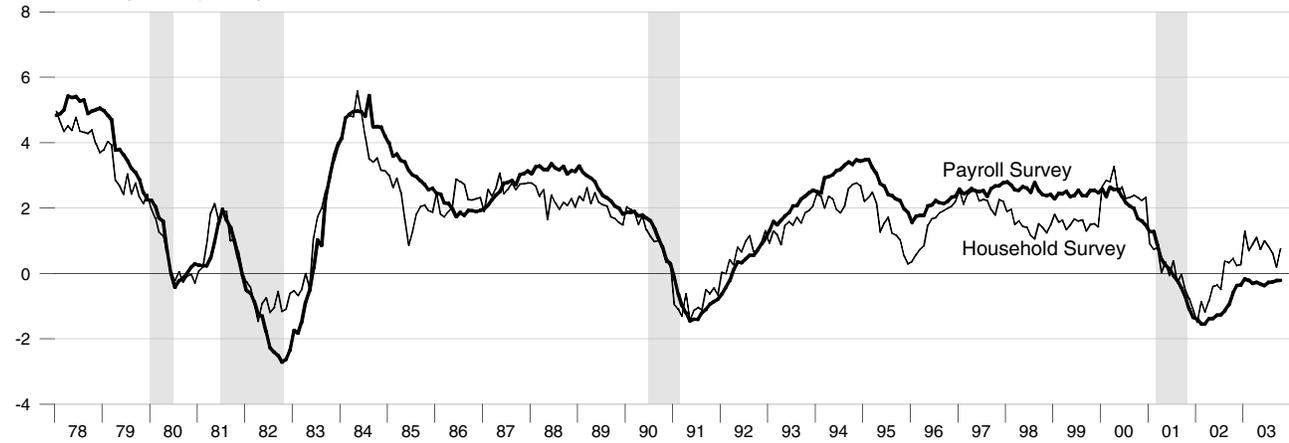


### Compensation per Hour



### Employment

Percent change from year ago

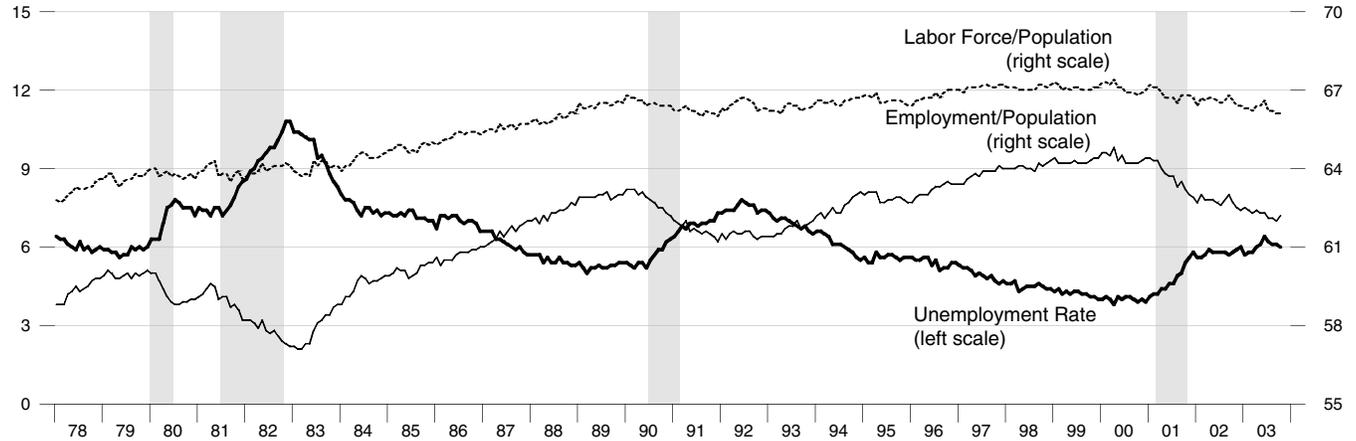


See the Notes section at the end of this publication for the Feb. 7, 2003, revisions to the Household Survey, and the June 6, 2003, revisions to the Establishment Survey.

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

Percent of labor force

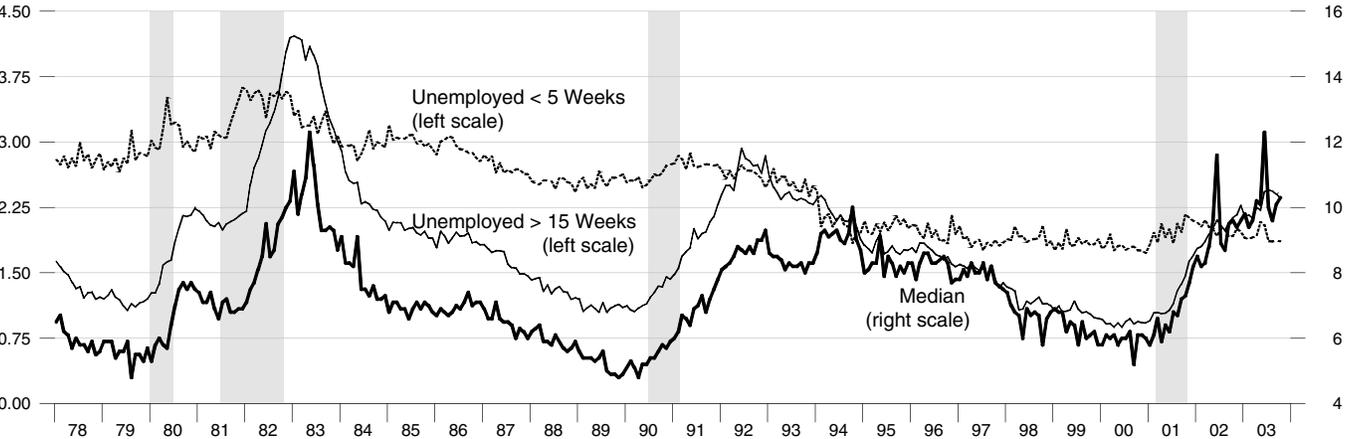
Percent of population



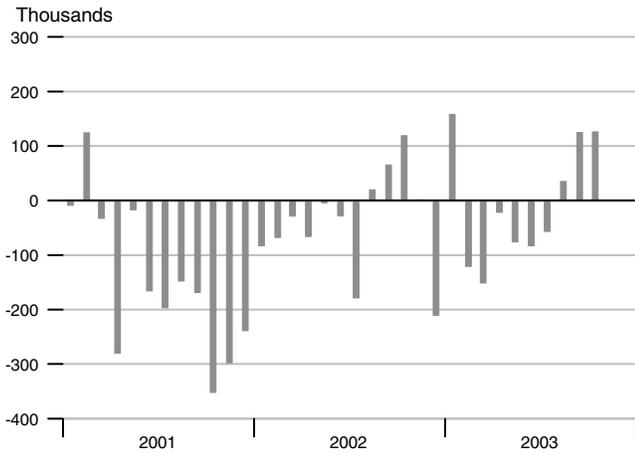
### Duration of Unemployment

Percent of labor force

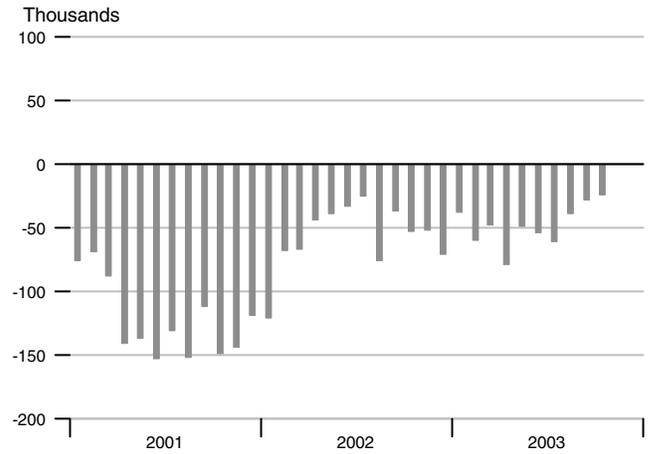
Weeks



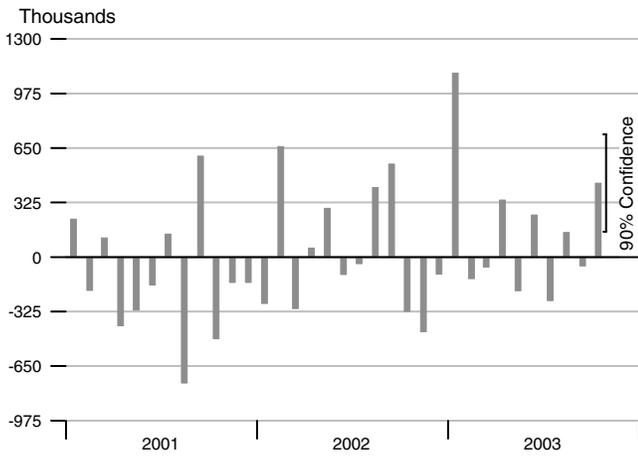
### Change in Nonfarm Payrolls



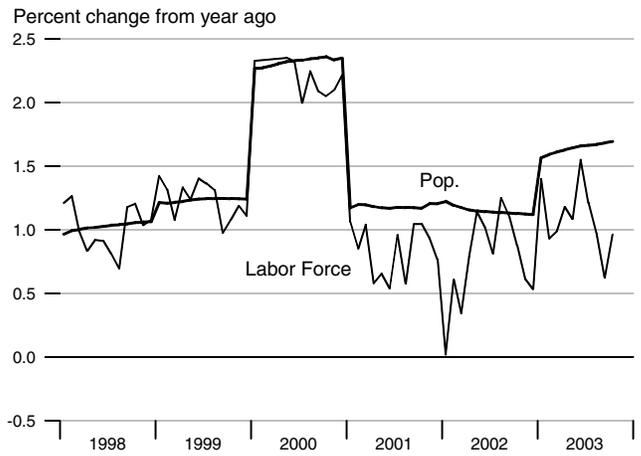
### Change in Manufacturing Payrolls



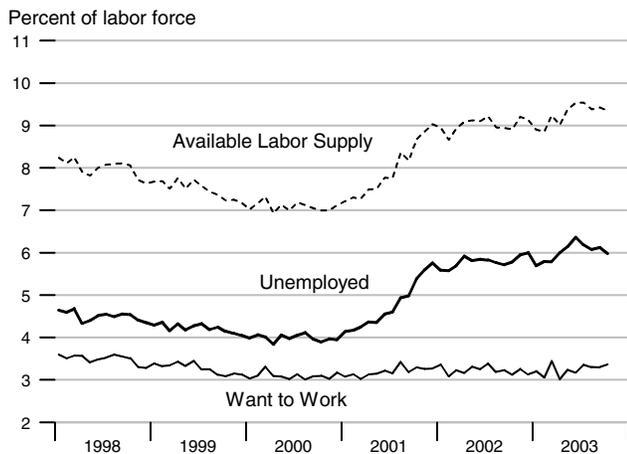
### Change in Household Employment



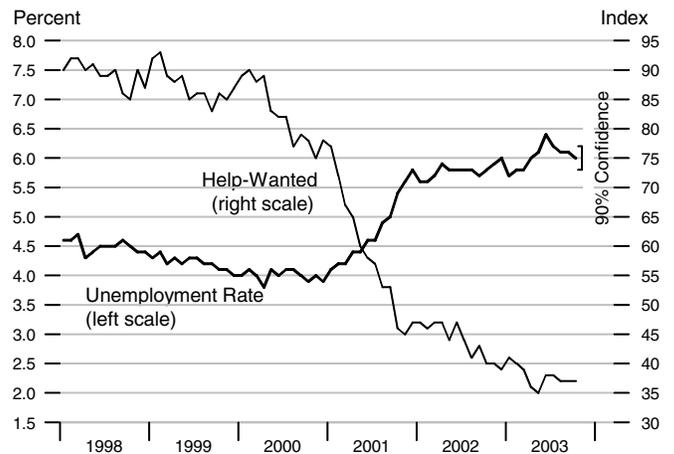
### Labor Force and Population



### Available Labor Supply and Components

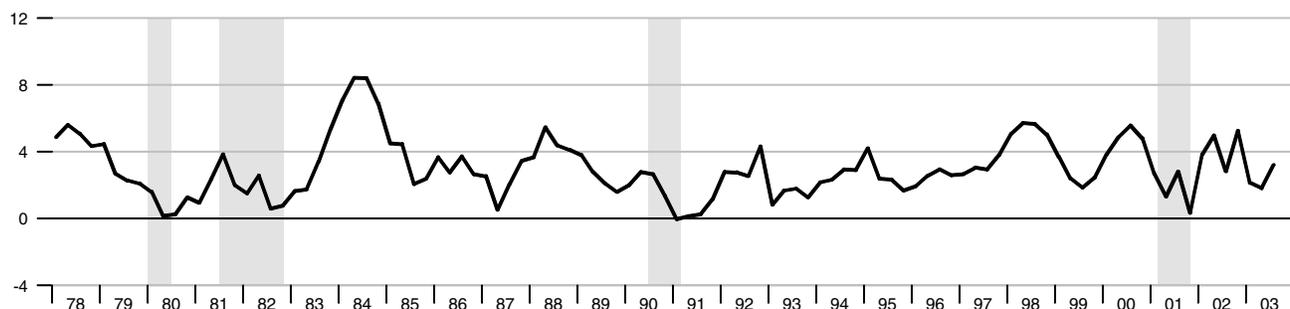


### Unemployment Rate & Help-Wanted Index



### Real Disposable Personal Income

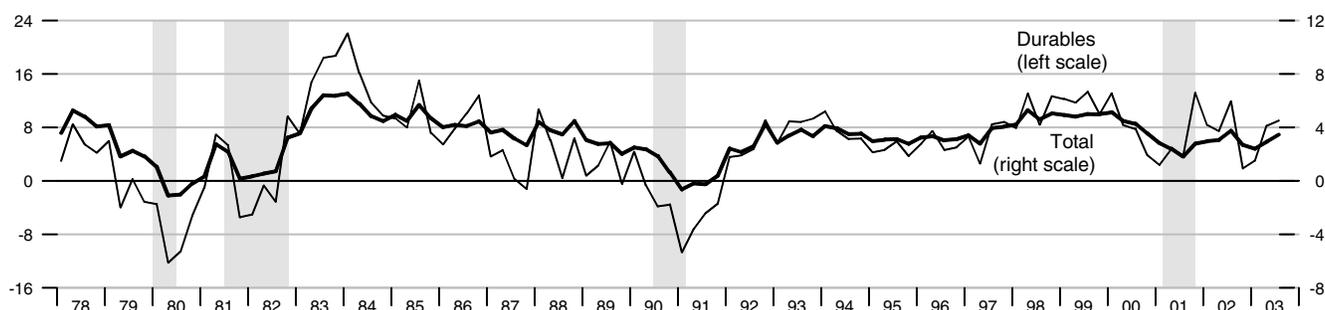
Percent change from year ago, quarterly data



### Real Consumption

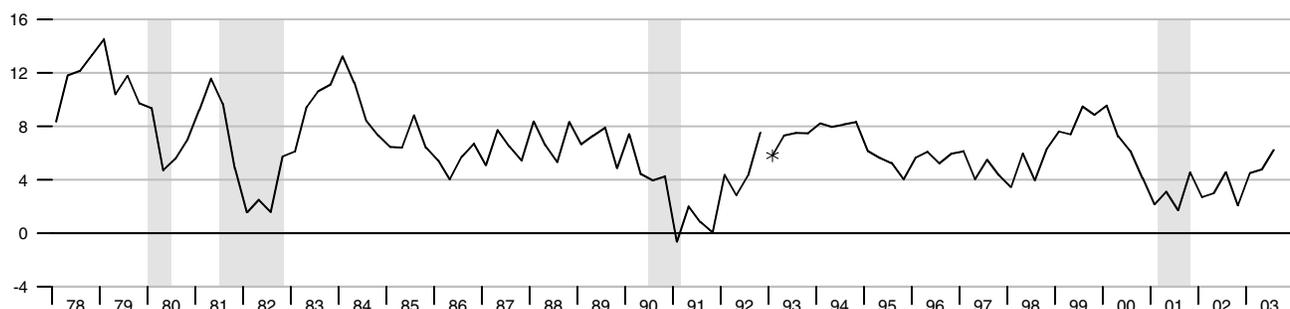
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



### Retail and Food Services Sales

Percent change from year ago, quarterly average

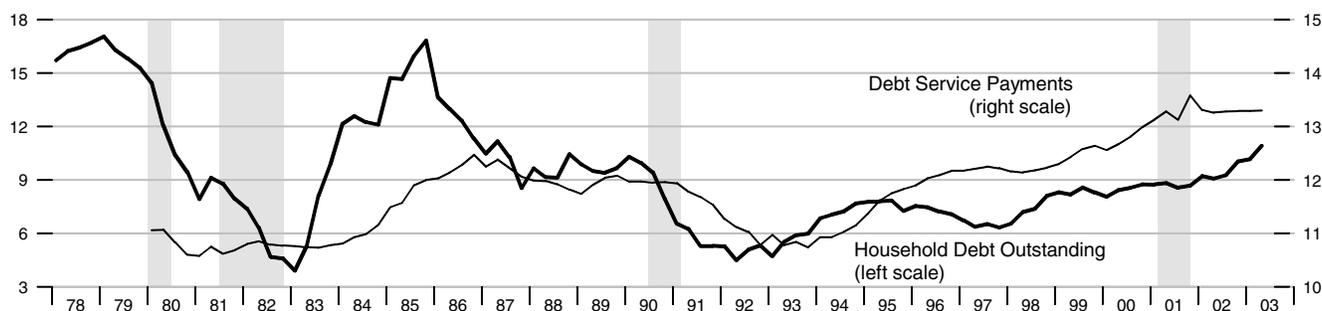


\*Data before January 1992 are not strictly comparable (see End Notes).

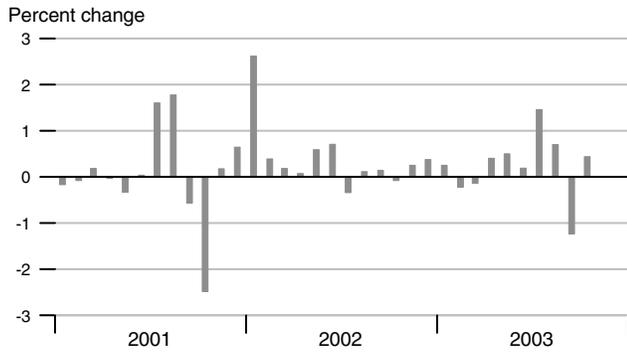
### Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

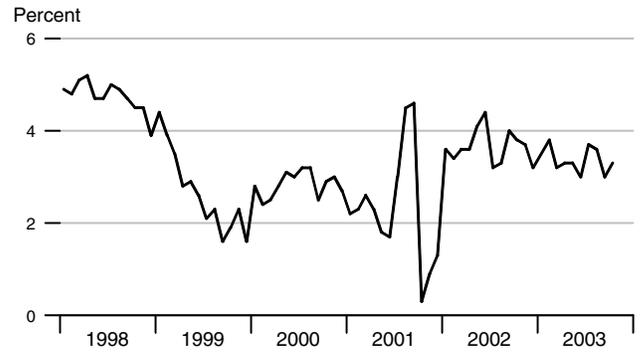
Percent of disposable personal income



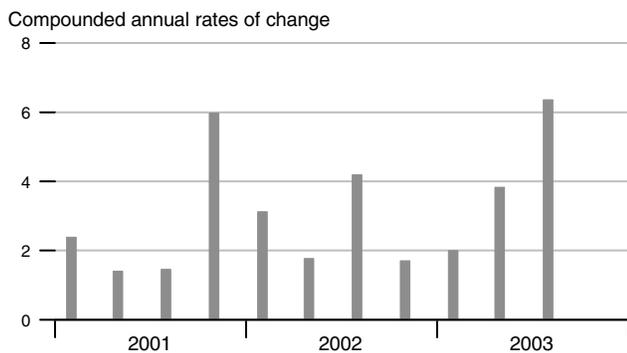
### Real Disposable Personal Income



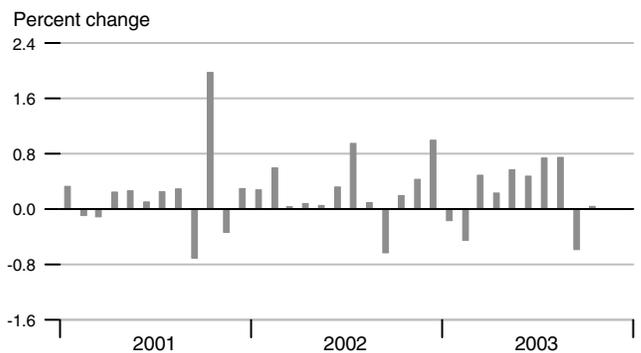
### Personal Saving Rate



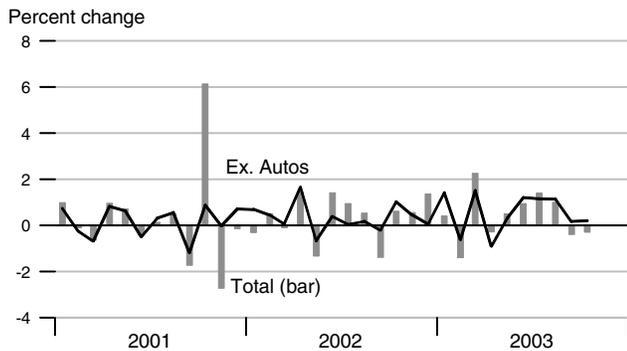
### Real Consumption



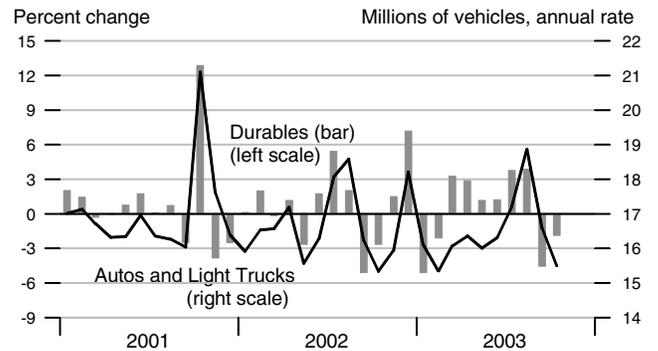
### Real Consumption



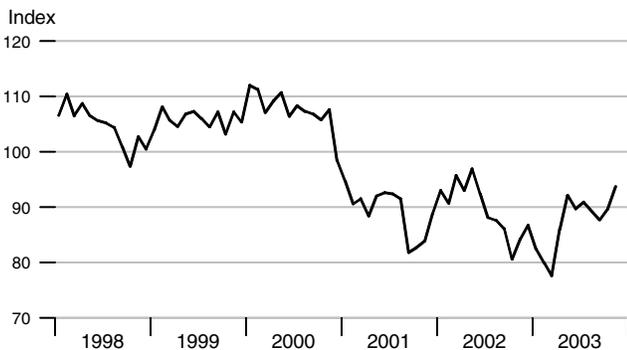
### Retail & Food Services



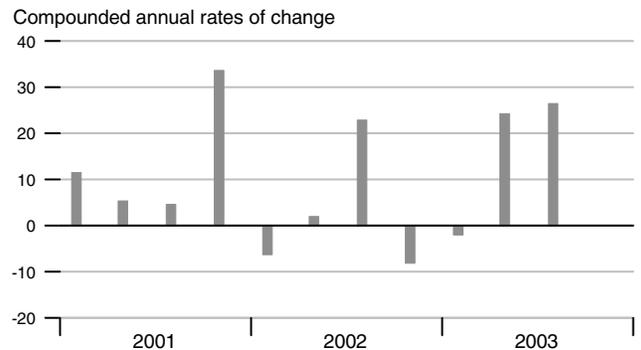
### Real Durables Consumption & Vehicle Sales



### Consumer Sentiment (U. of Michigan)

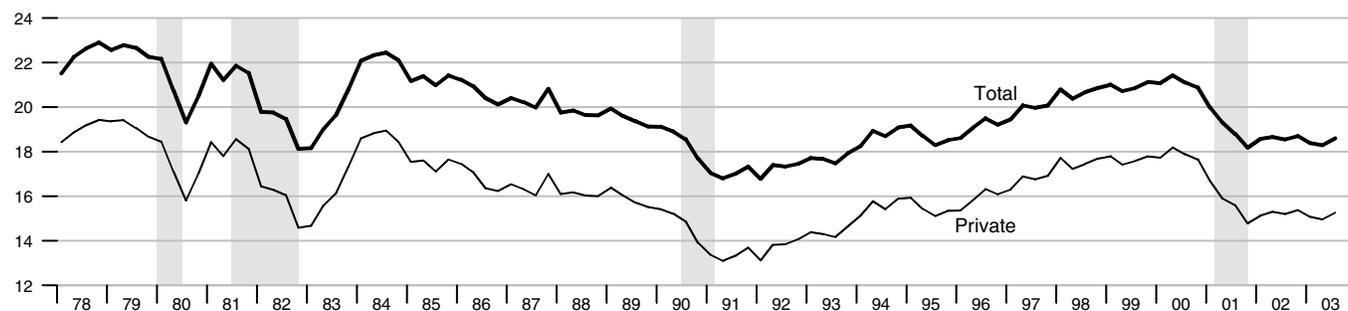


### Real Durables Consumption



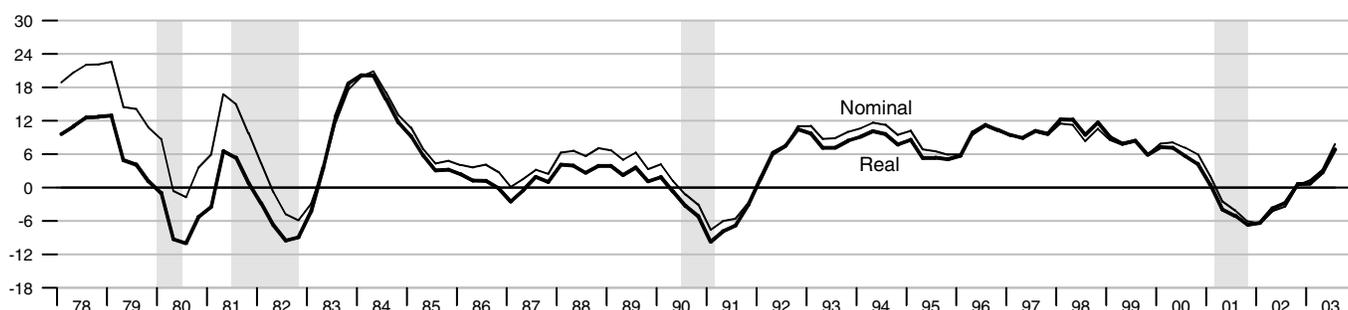
### Investment

Percent of nominal GDP



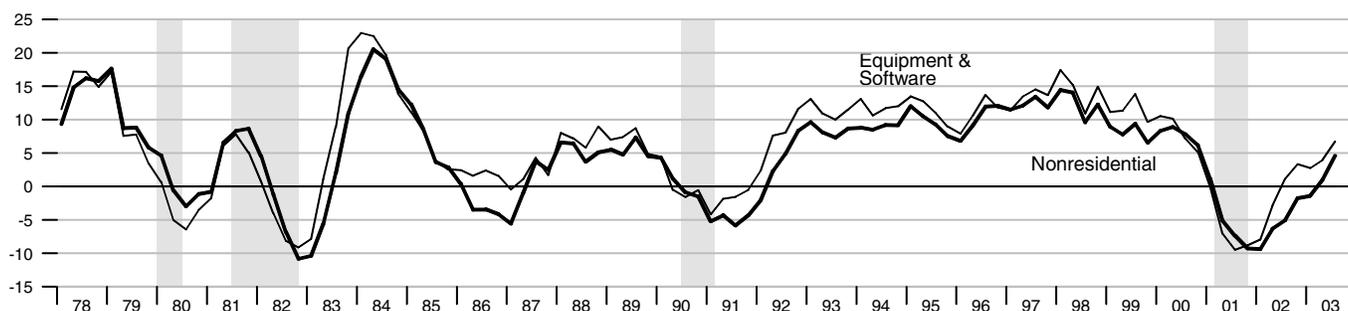
### Private Fixed Investment

Percent change from year ago



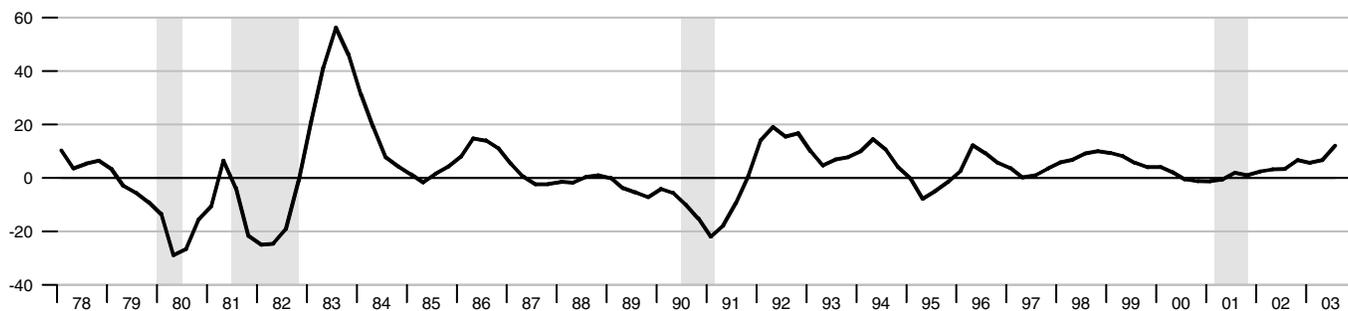
### Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

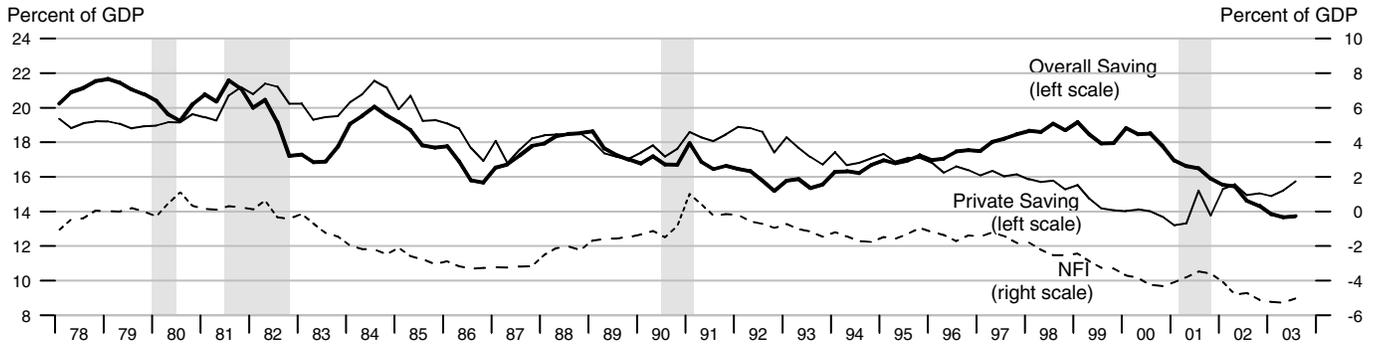


### Real Residential Fixed Investment

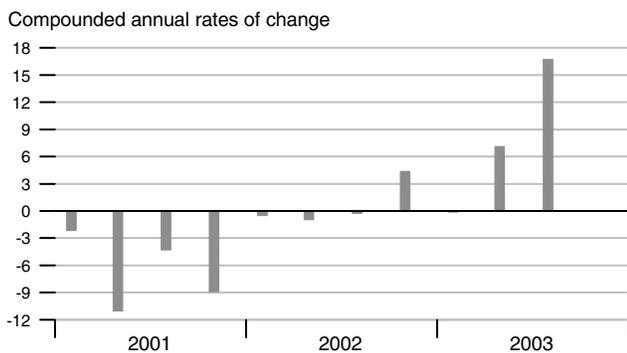
Percent change from year ago



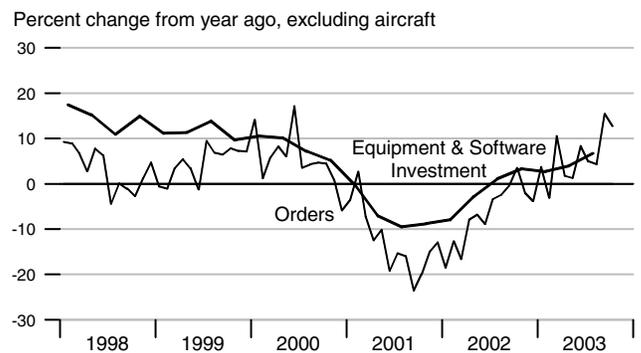
### Gross Saving Rates and Net Foreign Investment



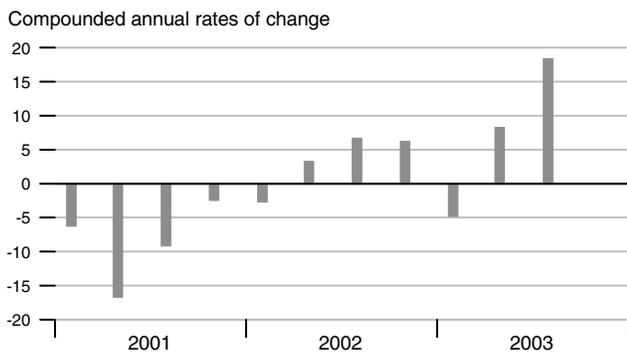
### Real Private Fixed Investment



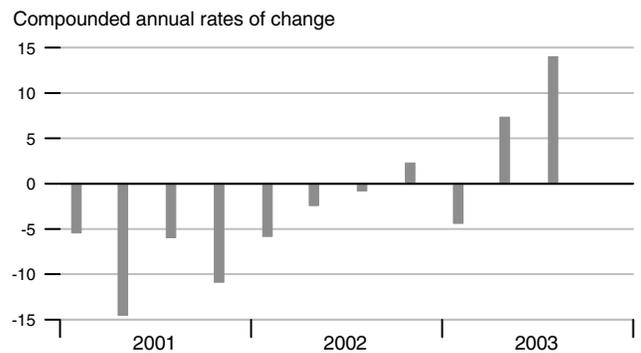
### Nondefense Capital Goods Orders



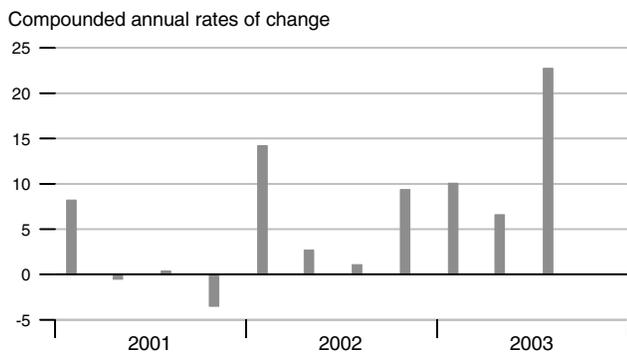
### Real Equipment & Software Investment



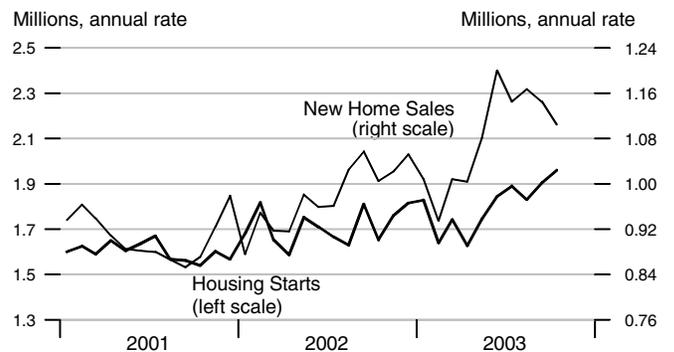
### Real Nonresidential Fixed Investment



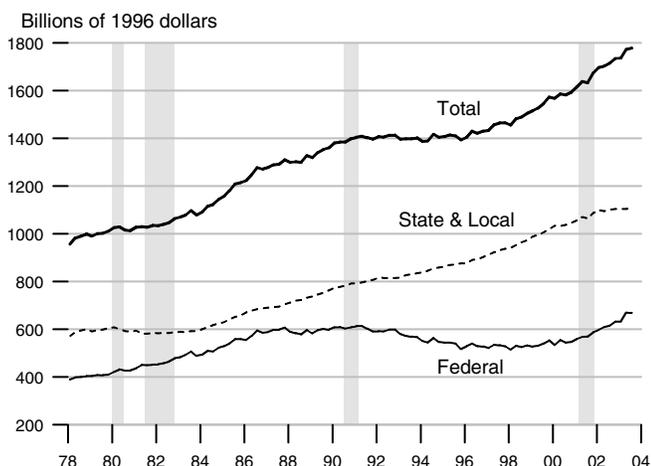
### Real Residential Fixed Investment



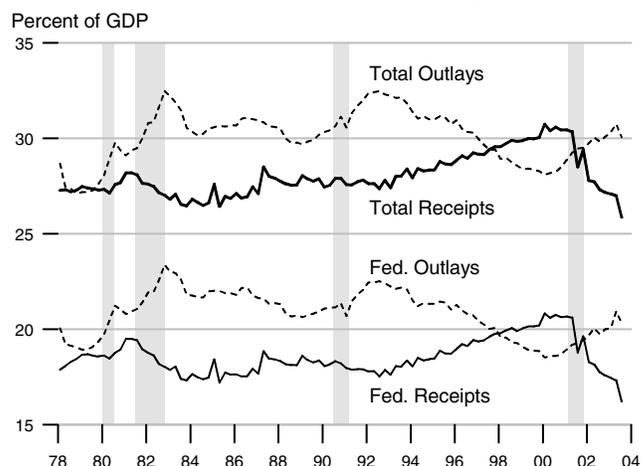
### Housing Starts and New Home Sales



**Govt. Consumption and Investment**



**Government Receipts and Outlays**



**Government Budgets**

Billions of dollars

**National Income Accounts**

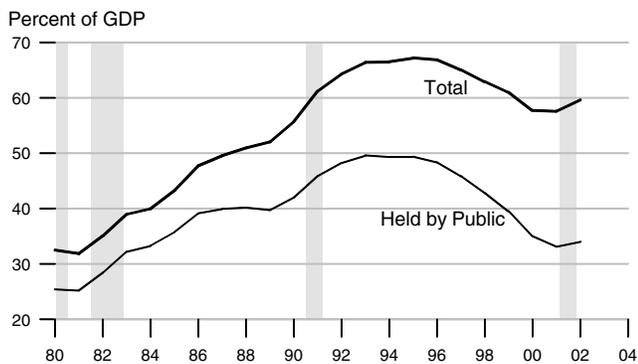
Calendar Years

**Unified Budget**

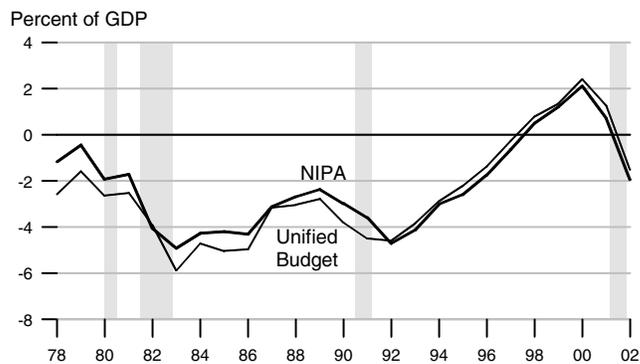
Fiscal Years

	State and Local			Federal			Federal		
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1991	716.0	723.8	-7.8	1072.3	1287.6	-215.3	1055.0	1324.4	-269.4
1992	772.2	777.2	-5.0	1121.3	1418.9	-297.6	1091.3	1381.7	-290.4
1993	823.2	821.7	1.5	1197.3	1471.5	-274.2	1154.4	1409.5	-255.1
1994	873.8	865.2	8.6	1293.7	1506.0	-212.3	1258.6	1461.9	-203.3
1995	917.9	902.5	15.4	1383.7	1575.7	-192.0	1351.8	1515.8	-164.0
1996	960.4	939.0	21.4	1499.1	1635.9	-136.8	1453.1	1560.6	-107.5
1997	1011.3	980.3	31.0	1625.5	1678.8	-53.3	1579.3	1601.3	-22.0
1998	1074.4	1033.7	40.7	1749.7	1705.9	43.8	1721.8	1652.6	69.2
1999	1144.1	1105.8	38.3	1867.2	1755.3	111.9	1827.5	1701.9	125.5
2000	1214.2	1196.2	18.0	2033.9	1827.1	206.8	2025.2	1788.8	236.4
2001	1261.3	1292.6	-31.3	2008.4	1936.4	72.0	1991.0	1863.9	127.1
2002	1304.5	1356.4	-51.9	1873.3	2075.5	-202.2	1853.2	2011.0	-157.8
2000Q4	1230.8	1231.0	-0.2	2054.1	1860.3	193.8	462.0	464.3	-2.3
2001Q1	1247.3	1263.8	-16.5	2072.9	1899.1	173.8	459.8	482.2	-22.5
2001Q2	1261.1	1293.4	-32.3	2072.3	1927.8	144.5	660.3	466.5	193.7
2001Q3	1253.6	1299.8	-46.2	1896.0	1947.7	-51.7	409.0	450.7	-41.7
2001Q4	1283.2	1313.3	-30.1	1992.3	1971.0	21.3	466.3	501.7	-35.4
2002Q1	1273.3	1329.1	-55.8	1884.7	2030.5	-145.8	412.6	509.2	-96.6
2002Q2	1302.5	1347.6	-45.1	1883.7	2079.3	-195.6	522.6	506.9	15.6
2002Q3	1310.3	1365.0	-54.7	1864.1	2074.6	-210.5	451.7	493.2	-41.5
2002Q4	1331.6	1384.0	-52.4	1860.8	2117.4	-256.6	427.4	535.6	-108.2
2003Q1	1343.1	1410.9	-67.8	1865.0	2145.1	-280.1	397.8	542.7	-144.9
2003Q2	1396.4	1411.3	-14.9	1871.3	2261.5	-390.2	527.7	544.3	-16.6
2003Q3	1409.2	1419.0	-9.8	1794.2	2245.5	-451.3	429.5	534.0	-104.5

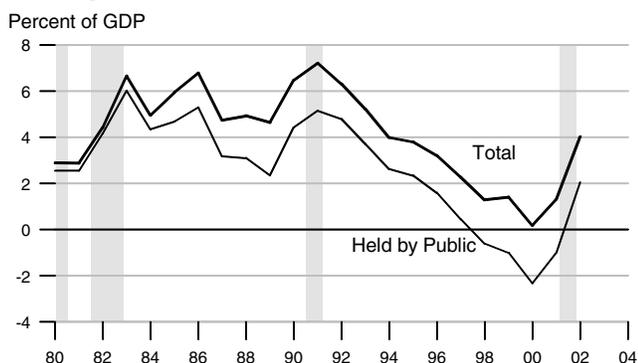
### Federal Debt



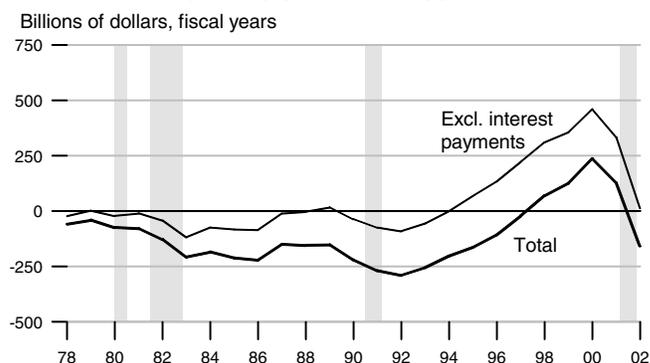
### Federal Surplus (+) / Deficit (-)



### Change in Federal Debt



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

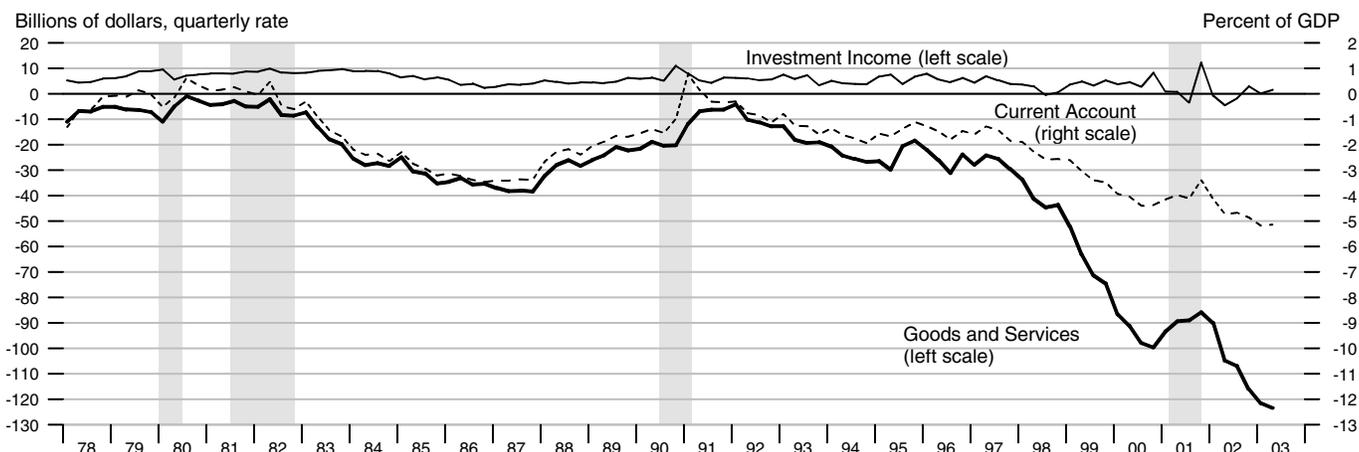


### Federal Government Debt

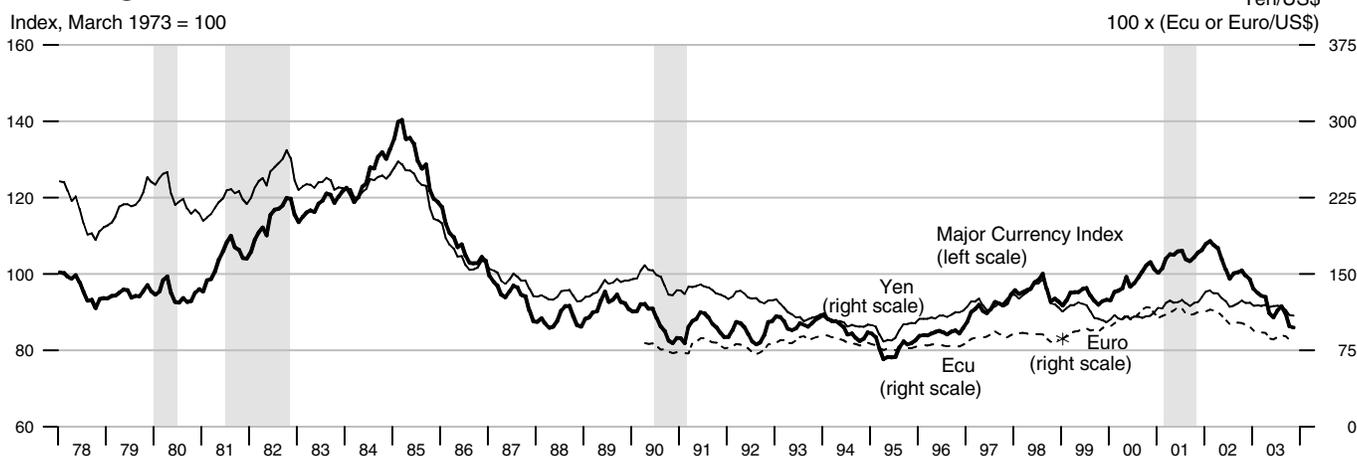
Billions of dollars, end of month or fiscal year  
Excludes Agency-issued debt

	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	1167.1
2003	6783.2	2859.4	3923.9	656.1	NA	NA
2000 March	5773.4	2085.4	3688.0	501.7	3182.8	1106.9
June	5685.9	2190.2	3495.7	505.0	2987.4	1082.0
September	5674.2	2235.7	3438.5	511.4	2936.2	1057.9
December	5662.2	2248.7	3527.4	511.7	2880.4	1034.2
2001 March	5773.7	2339.4	3434.4	523.9	2892.9	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	1053.1
2002 March	6006.0	2562.4	3443.7	575.4	2849.2	1067.0
June	6126.5	2662.9	3463.5	590.7	2849.8	1101.9
September	6228.2	2675.7	3552.6	604.2	2924.8	1167.1
December	6405.7	2758.3	3647.4	629.4	3018.5	1212.7
2003 March	6460.8	2750.0	3710.8	641.5	3056.0	1254.6
June	6670.1	2853.8	3816.3	652.1	3164.7	1355.3
September	6783.2	2859.4	3923.9	656.1	NA	NA

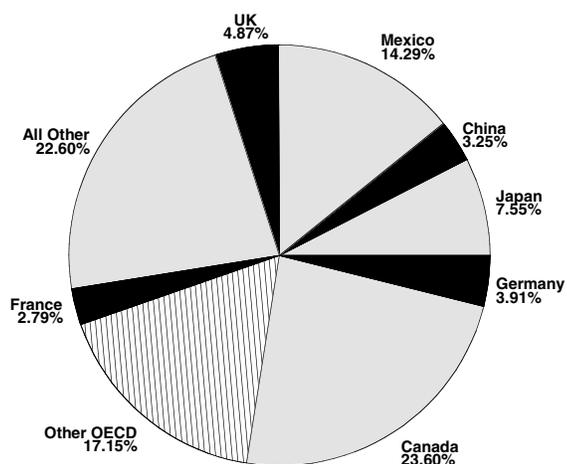
### Current Account, Trade and Investment Income Balances



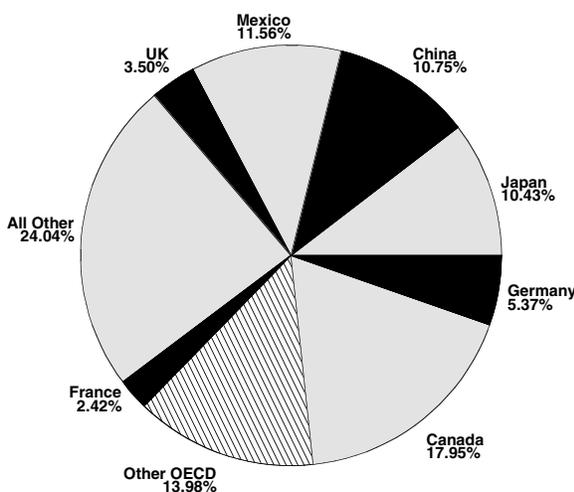
### Exchange Rates



### Goods Export Shares, 2002



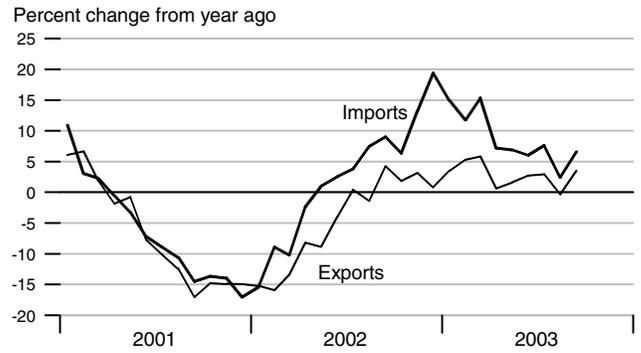
### Goods Import Shares, 2002



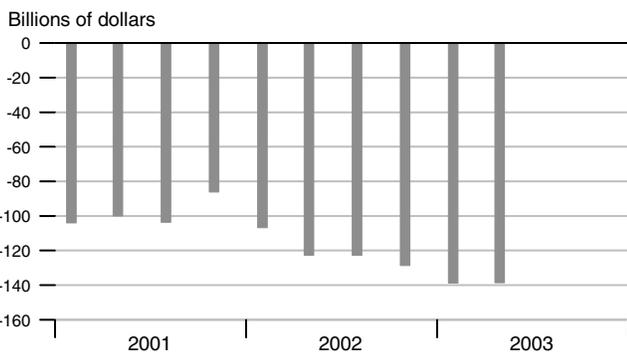
### Trade Balance



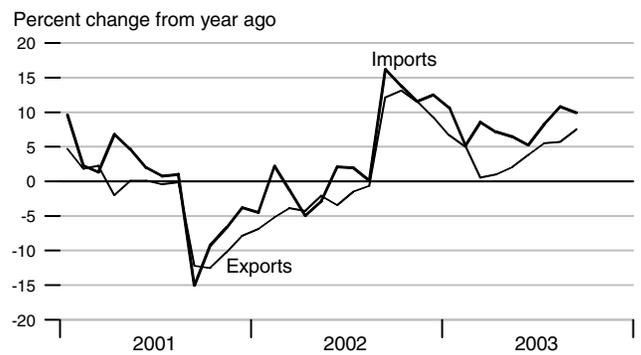
### Goods Trade



### Current Account Balance



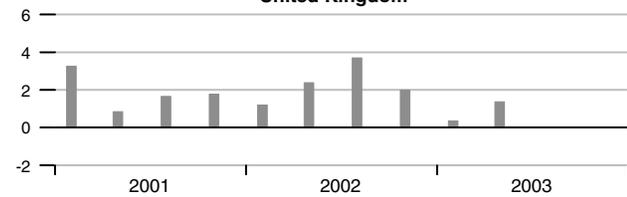
### Services Trade



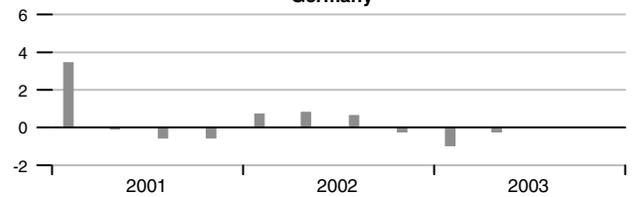
### Real GDP Growth of Major Trading Partners

Compounded annual rates of change

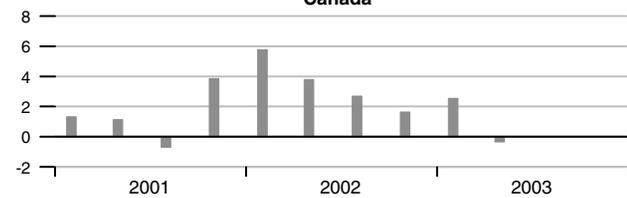
#### United Kingdom



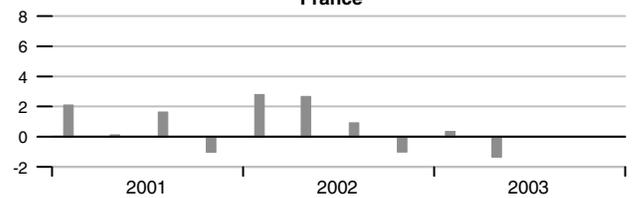
#### Germany



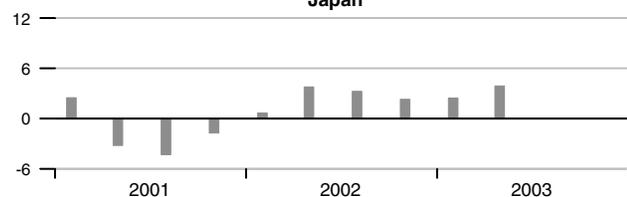
#### Canada



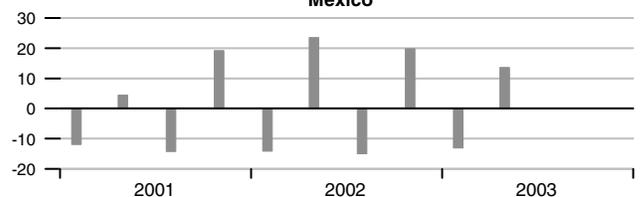
#### France



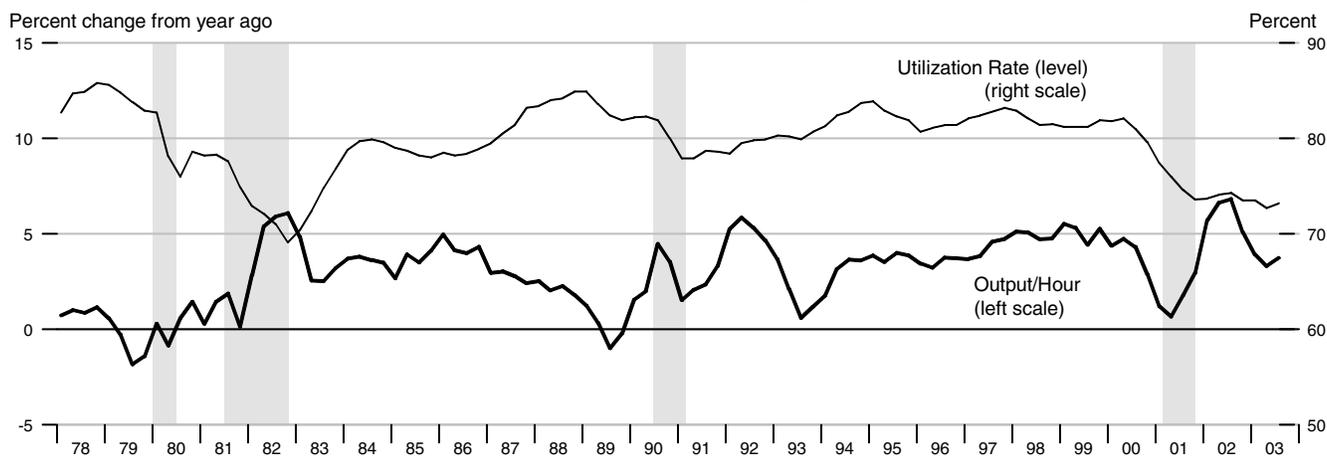
#### Japan



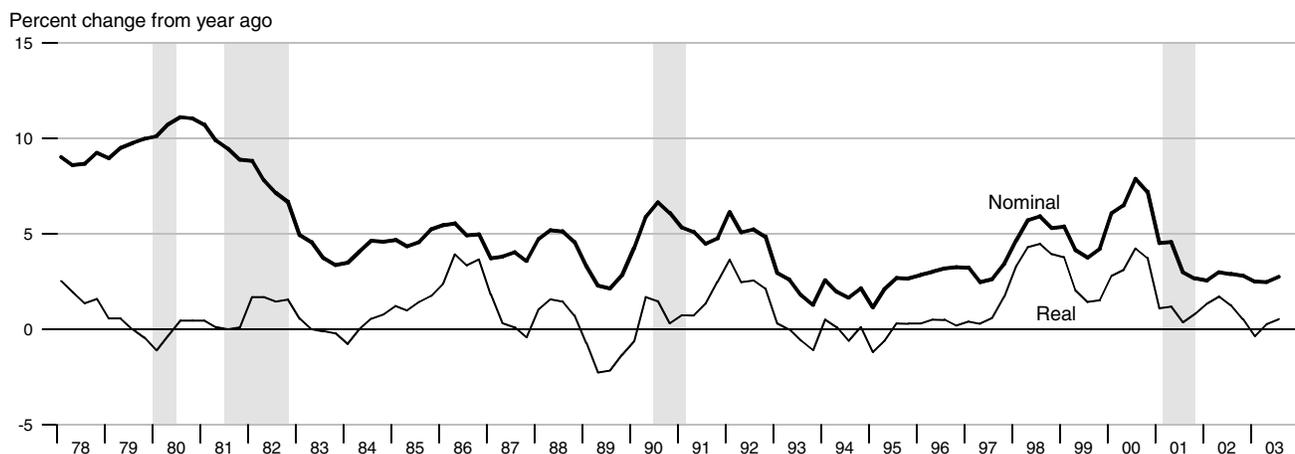
#### Mexico



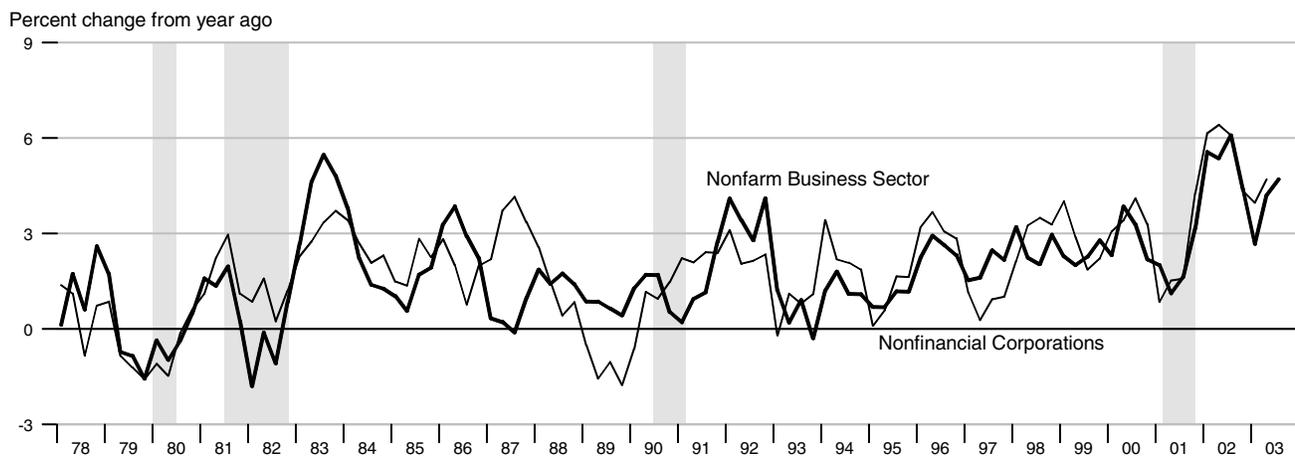
### Output per Hour and Capacity Utilization, Manufacturing



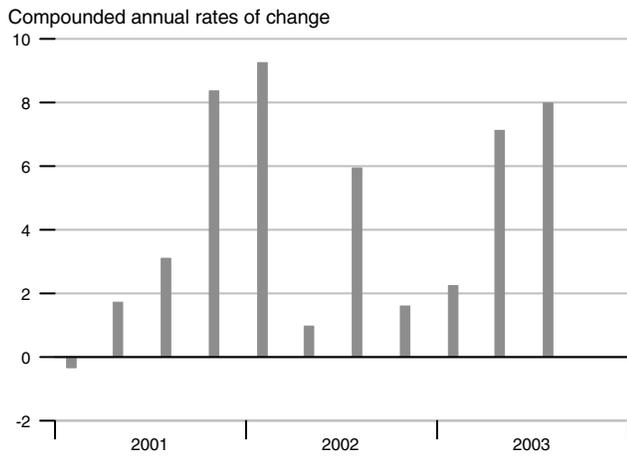
### Nonfarm Compensation per Hour



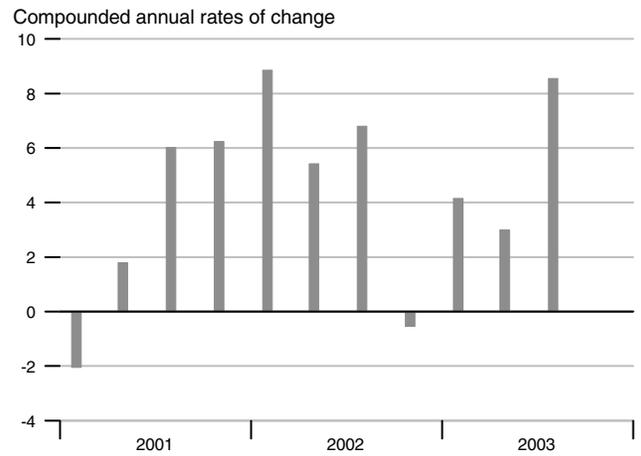
### Output per Hour, Nonfarm Business and Nonfinancial Corporations



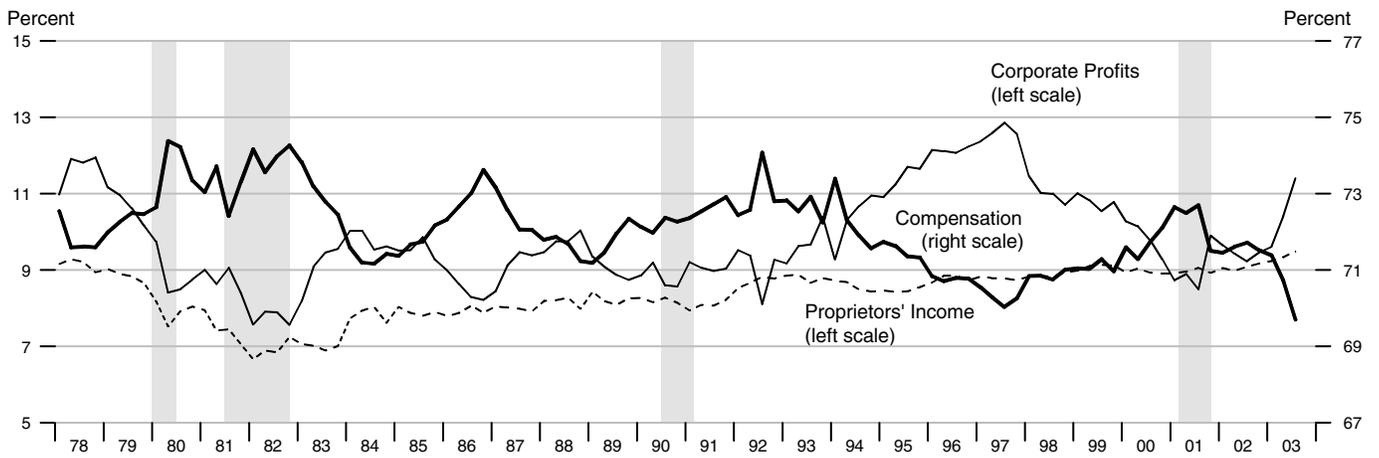
### Nonfarm Output per Hour



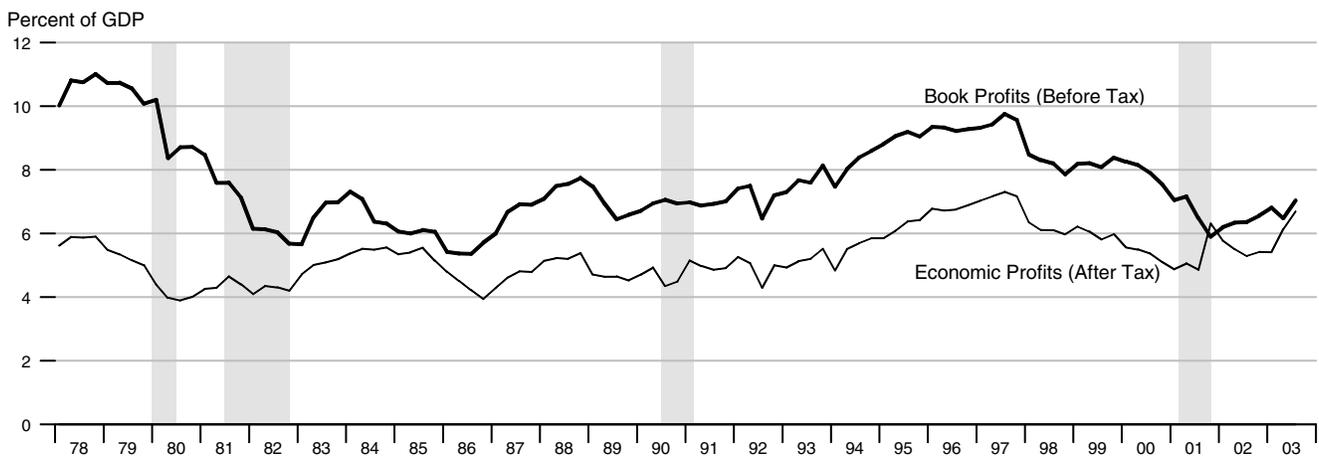
### Manufacturing Output per Hour



### Selected Component Shares of National Income



### Corporate Profits



Note: Economic Profits include IVA and CCAdj; Book Profits exclude them (see Notes).

	Nominal GDP			Real GDP			Final Sales			Change in Private Inventories		
	Billions of \$	Percent change		Billions of 1996 \$	Percent change		Billions of 1996 \$	Percent change		Billions of 1996 \$		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	Last qtr	Year/Year ago	
1999	9274.3	5.6		8858.963	4.1		8793.899	4.3		62.755		
2000	9824.6	5.9		9191.413	3.8		9121.104	3.7		64.976		
2001	10082.2	2.6		9214.540	0.3		9258.399	1.5		-61.357		
2002	10446.2	3.6		9439.872	2.4		9424.375	1.8		5.162		
2000 1	9649.5	5.7	6.1	9097.421	2.6	4.2	9042.883	4.4	4.5	45.335	54.085	
2	9820.7	7.3	7.1	9205.711	4.8	4.9	9111.141	3.1	4.2	91.496	69.164	
3	9874.8	2.2	6.0	9218.681	0.6	3.7	9150.447	1.7	3.6	63.136	73.041	
4	9953.6	3.2	4.6	9243.840	1.1	2.3	9179.789	1.3	2.6	59.938	64.976	
2001 1	10028.1	3.0	3.9	9229.932	-0.6	1.5	9243.767	2.8	2.2	-26.918	46.913	
2	10049.9	0.9	2.3	9193.054	-1.6	-0.1	9234.349	-0.4	1.4	-58.297	9.465	
3	10097.7	1.9	2.3	9186.413	-0.3	-0.4	9230.535	-0.2	0.9	-61.772	-21.762	
4	10152.9	2.2	2.0	9248.762	2.7	0.1	9324.945	4.2	1.6	-98.441	-61.357	
2002 1	10313.1	6.5	2.8	9363.225	5.0	1.4	9379.350	2.4	1.5	-28.937	-61.862	
2	10376.9	2.5	3.3	9392.446	1.3	2.2	9377.871	-0.1	1.6	4.931	-46.055	
3	10506.2	5.1	4.0	9485.579	4.0	3.3	9457.181	3.4	2.5	18.836	-25.903	
4	10588.8	3.2	4.3	9518.238	1.4	2.9	9483.099	1.1	1.7	25.820	5.163	
2003 1	10688.4	3.8	3.6	9551.991	1.4	2.0	9536.181	2.3	1.7	4.761	13.587	
2	10802.7	4.3	4.1	9629.419	3.3	2.5	9631.135	4.0	2.7	-17.563	7.964	
3	11063.4	10.0	5.3	9821.233	8.2	3.5	9818.710	8.0	3.8	-14.057	-0.260	
	Consumption			Durables Consumption			Private Fixed Investment			Nonresidential Fixed Investment		
	Billions of 1996 \$	Percent change		Billions of 1996 \$	Percent change		Billions of 1996 \$	Percent change		Billions of 1996 \$	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
1999	5964.464	4.9		812.539	11.8		1595.205	7.8		1228.392	8.1	
2000	6223.930	4.4		878.945	8.2		1691.893	6.1		1324.199	7.8	
2001	6377.231	2.5		931.888	6.0		1627.414	-3.8		1255.132	-5.2	
2002	6576.007	3.1		999.884	7.3		1577.272	-3.1		1183.377	-5.7	
2000 1	6151.862	5.3	5.1	879.506	17.8	13.1	1673.617	13.3	7.3	1297.108	15.0	8.3
2	6198.213	3.0	4.5	871.338	-3.7	8.4	1700.940	6.7	7.1	1329.083	10.2	8.9
3	6256.821	3.8	4.3	888.464	8.1	7.8	1701.667	0.2	5.7	1340.677	3.5	7.8
4	6288.822	2.1	3.5	876.479	-5.3	3.8	1691.347	-2.4	4.3	1329.929	-3.2	6.2
2001 1	6326.008	2.4	2.8	900.596	11.5	2.4	1682.070	-2.2	0.5	1311.445	-5.4	1.1
2	6348.006	1.4	2.4	912.358	5.3	4.7	1633.538	-11.1	-4.0	1260.978	-14.5	-5.1
3	6370.946	1.5	1.8	922.616	4.6	3.8	1615.663	-4.3	-5.1	1241.712	-6.0	-7.4
4	6463.964	6.0	2.8	991.988	33.6	13.2	1578.384	-8.9	-6.7	1206.409	-10.9	-9.3
2002 1	6513.825	3.1	3.0	975.898	-6.3	8.4	1576.408	-0.5	-6.3	1188.412	-5.8	-9.4
2	6542.422	1.8	3.1	980.664	2.0	7.5	1572.624	-1.0	-3.7	1181.099	-2.4	-6.3
3	6609.881	4.2	3.8	1032.423	22.8	11.9	1571.593	-0.3	-2.7	1178.662	-0.8	-5.1
4	6637.901	1.7	2.7	1010.550	-8.2	1.9	1588.462	4.4	0.6	1185.336	2.3	-1.7
2003 1	6670.898	2.0	2.4	1005.354	-2.0	3.0	1587.904	-0.1	0.7	1172.105	-4.4	-1.4
2	6733.905	3.8	2.9	1061.490	24.3	8.2	1615.347	7.1	2.7	1193.026	7.3	1.0
3	6838.445	6.4	3.5	1125.671	26.5	9.0	1679.002	16.7	6.8	1232.781	14.0	4.6

	GDP Chain Price Index			Employment Cost Index			ECI: Wages			ECI: Benefits		
	Index	Percent change		Index	Percent change		Index	Percent change		Index	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
1999	104.690		1.4	142.4		3.2	140.3		3.4	147.6		2.8
2000	106.890		2.1	148.9		4.6	146.0		4.1	156.0		5.7
2001	109.420		2.4	155.0		4.1	151.4		3.7	163.7		4.9
2002	110.660		1.1	160.9		3.8	156.4		3.3	171.7		4.9
2000 1	106.080	3.1	1.9	146.6	5.4	4.6	143.9	4.3	4.2	153.2	8.2	5.4
2	106.690	2.3	2.1	148.2	4.4	4.6	145.4	4.2	4.1	155.1	5.1	5.7
3	107.130	1.7	2.2	149.7	4.1	4.7	146.7	3.6	4.1	157.0	5.0	5.9
4	107.680	2.1	2.3	151.1	3.8	4.4	147.9	3.3	3.9	158.7	4.4	5.7
2001 1	108.660	3.7	2.4	152.8	4.6	4.2	149.4	4.1	3.8	160.8	5.4	5.0
2	109.320	2.5	2.5	154.2	3.7	4.0	150.8	3.8	3.7	162.5	4.3	4.8
3	109.920	2.2	2.6	155.7	3.9	4.0	152.0	3.2	3.6	164.7	5.5	4.9
4	109.780	-0.5	2.0	157.4	4.4	4.2	153.4	3.7	3.7	166.8	5.2	5.1
2002 1	110.140	1.3	1.4	158.8	3.6	3.9	154.8	3.7	3.6	168.6	4.4	4.9
2	110.480	1.2	1.1	160.5	4.4	4.1	156.2	3.7	3.6	170.8	5.3	5.1
3	110.760	1.0	0.8	161.5	2.5	3.7	156.9	1.8	3.2	172.6	4.3	4.8
4	111.250	1.8	1.3	162.7	3.0	3.4	157.7	2.1	2.8	174.7	5.0	4.7
2003 1	111.900	2.4	1.6	164.9	5.5	3.8	159.3	4.1	2.9	178.9	10.0	6.1
2	112.180	1.0	1.5	166.3	3.4	3.6	160.3	2.5	2.6	181.3	5.5	6.1
3	112.650	1.7	1.7	168.0	4.2	4.0	161.7	3.5	3.1	183.8	5.6	6.5
	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation per Hour		
	Billions of 1996 \$	Percent change		Billions of 1996 \$	Percent change		Index	Percent change		Index	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
1999	1036.329		3.4	1356.816		10.9	112.8		2.4	124.3		4.4
2000	1137.199		9.7	1535.958		13.2	116.1		2.9	133.0		7.0
2001	1076.121		-5.4	1492.010		-2.9	118.3		1.9	137.8		3.6
2002	1058.832		-1.6	1547.373		3.7	124.7		5.4	141.7		2.8
2000 1	1095.781	7.7	8.8	1464.619	14.7	13.5	114.6	0.3	2.3	130.8	15.4	6.1
2	1133.877	14.6	11.4	1528.465	18.6	14.3	116.1	5.3	3.8	131.4	1.8	6.5
3	1165.469	11.6	11.6	1578.615	13.8	14.1	116.4	1.0	3.3	134.2	8.8	7.9
4	1153.668	-4.0	7.3	1572.152	-1.6	11.1	117.0	2.1	2.2	135.3	3.3	7.2
2001 1	1135.809	-6.0	3.7	1540.311	-7.9	5.2	116.9	-0.3	2.0	136.7	4.2	4.5
2	1098.832	-12.4	-3.1	1513.594	-6.8	-1.0	117.4	1.7	1.1	137.4	2.1	4.6
3	1048.017	-17.3	-10.1	1466.988	-11.8	-7.1	118.3	3.1	1.6	138.2	2.3	3.0
4	1021.827	-9.6	-11.4	1447.158	-5.3	-8.0	120.7	8.4	3.2	138.9	2.0	2.7
2002 1	1030.560	3.5	-9.3	1477.140	8.5	-4.1	123.4	9.3	5.6	140.2	3.8	2.6
2	1065.526	14.3	-3.0	1552.919	22.2	2.6	123.7	1.0	5.4	141.5	3.8	3.0
3	1077.659	4.6	2.8	1565.680	3.3	6.7	125.5	5.9	6.1	142.2	2.0	2.9
4	1061.584	-5.8	3.9	1593.755	7.4	10.1	126.0	1.6	4.4	142.8	1.7	2.8
2003 1	1058.069	-1.3	2.7	1568.377	-6.2	6.2	126.7	2.2	2.7	143.7	2.5	2.5
2	1055.543	-1.0	-0.9	1601.691	8.8	3.1	128.9	7.1	4.2	145.0	3.7	2.5
3	1083.464	11.0	0.5	1607.663	1.5	2.7	131.4	8.0	4.7	146.1	3.1	2.7

		Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
		Thousands	Change	Percent change		Thousands	Change	Percent change		Index	Percent change		
				Annual rate	Year ago			Annual rate	Year ago		Monthly rate	Annual rate	Year ago
	1998	131476	1904		1.5	125924	3157		2.6	99.5			2.5
	1999	133498	2022		1.5	128994	3070		2.4	101.5			2.1
	2000	136899	3401		2.5	131790	2796		2.2	103.4			1.9
	2001	136941	42		0.0	131830	40		0.0	102.1			-1.3
	2002	136486	-455		-0.3	130376	-1454		-1.1	100.0			-2.0
2001	1	137752	424	1.2	0.8	132508	199	0.6	1.1	103.4	-0.2	-0.6	0.2
	2	137086	-666	-1.9	0.1	132180	-327	-1.0	0.3	102.6	-0.8	-3.2	-0.9
	3	136707	-379	-1.1	0.0	131712	-468	-1.4	-0.2	101.8	-0.8	-3.1	-1.7
	4	136218	-488	-1.4	-0.8	130920	-792	-2.4	-1.1	100.6	-1.2	-4.6	-2.9
2002	1	136128	-90	-0.3	-1.2	130523	-397	-1.2	-1.5	100.4	-0.1	-0.5	-2.9
	2	136355	227	0.7	-0.5	130403	-120	-0.4	-1.3	100.3	-0.1	-0.5	-2.2
	3	136804	449	1.3	0.1	130239	-164	-0.5	-1.1	99.8	-0.5	-1.8	-1.9
	4	136656	-148	-0.4	0.3	130338	99	0.3	-0.4	99.6	-0.3	-1.1	-1.0
2003	1	137431	774	2.3	1.0	130225	-113	-0.3	-0.2	99.1	-0.4	-1.7	-1.3
	2	137637	207	0.6	0.9	129984	-241	-0.7	-0.3	98.7	-0.4	-1.6	-1.6
	3	137559	-79	-0.2	0.6	129911	-73	-0.2	-0.3	98.6	-0.2	-0.7	-1.3
2001	Oct	136370	-488	-4.2	-0.5	131198	-352	-3.2	-0.7	100.6	-0.6	-6.9	-3.2
	Nov	136218	-152	-1.3	-0.8	130900	-298	-2.7	-1.1	100.5	-0.1	-1.2	-3.1
	Dec	136067	-151	-1.3	-1.1	130661	-239	-2.2	-1.3	100.6	0.1	1.2	-2.4
2002	Jan	135791	-276	-2.4	-1.5	130578	-83	-0.8	-1.4	100.3	-0.3	-3.5	-3.3
	Feb	136450	659	6.0	-0.9	130510	-68	-0.6	-1.5	100.5	0.2	2.4	-2.7
	Mar	136143	-307	-2.7	-1.2	130481	-29	-0.3	-1.5	100.5	0.0	0.0	-2.6
	Apr	136196	53	0.5	-0.8	130415	-66	-0.6	-1.4	100.3	-0.2	-2.4	-2.3
	May	136487	291	2.6	-0.4	130411	-4	-0.0	-1.4	100.2	-0.1	-1.2	-2.3
	Jun	136383	-104	-0.9	-0.4	130383	-28	-0.3	-1.3	100.4	0.2	2.4	-2.0
	Jul	136343	-40	-0.4	-0.5	130204	-179	-1.6	-1.3	99.7	-0.7	-8.1	-2.5
	Aug	136757	414	3.7	0.4	130224	20	0.2	-1.1	99.9	0.2	2.4	-1.9
	Sep	137312	555	5.0	0.3	130289	65	0.6	-1.0	99.9	0.0	0.0	-1.3
	Oct	136988	-324	-2.8	0.5	130408	119	1.1	-0.6	99.7	-0.2	-2.4	-0.9
	Nov	136542	-446	-3.8	0.2	130409	1	0.0	-0.4	99.6	-0.1	-1.2	-0.9
	Dec	136439	-103	-0.9	0.3	130198	-211	-1.9	-0.4	99.4	-0.2	-2.4	-1.2
2003	Jan	137536	1097	10.1	1.3	130356	158	1.5	-0.2	99.4	0.0	0.0	-0.9
	Feb	137408	-128	-1.1	0.7	130235	-121	-1.1	-0.2	99.0	-0.4	-4.7	-1.5
	Mar	137348	-60	-0.5	0.9	130084	-151	-1.4	-0.3	99.0	0.0	0.0	-1.5
	Apr	137687	339	3.0	1.1	130062	-22	-0.2	-0.3	98.8	-0.2	-2.4	-1.5
	May	137487	-200	-1.7	0.7	129986	-76	-0.7	-0.3	98.7	-0.1	-1.2	-1.5
	Jun	137738	251	2.2	1.0	129903	-83	-0.8	-0.4	98.7	0.0	0.0	-1.7
	Jul	137478	-260	-2.2	0.8	129846	-57	-0.5	-0.3	98.3	-0.4	-4.8	-1.4
	Aug	137625	147	1.3	0.6	129881	35	0.3	-0.3	98.7	0.4	5.0	-1.2
	Sep	137573	-52	-0.5	0.2	130006	125	1.2	-0.2	98.7	0.0	0.0	-1.2
	Oct	138014	441	3.9	0.7	130132	126	1.2	-0.2	99.1	0.4	5.0	-0.6

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields	
			Billions of dollars	Percent change			Index	Percent change			(Percent)	
				Monthly/ quarterly	Annual rate	Year ago			Monthly/ quarterly	Annual rate	Year ago	3-mo
1998		4.5	2918.226			4.9	105.923			5.9	4.78	5.26
1999		4.2	3161.948			8.4	110.577			4.4	4.64	5.64
2000		4.0	3374.243			6.7	115.429			4.4	5.82	6.03
2001		4.8	3471.756			2.9	111.516			-3.4	3.39	5.02
2002		5.8	3578.674			3.1	110.876			-0.6	1.60	4.61
2001	1	4.2	856.706	0.8	3.0	2.2	113.673	-1.6	-6.3	-0.5	4.82	5.05
	2	4.5	863.764	0.8	3.3	3.1	112.218	-1.3	-5.0	-3.3	3.66	5.27
	3	4.8	862.246	-0.2	-0.7	1.7	110.716	-1.3	-5.2	-4.5	3.17	4.98
	4	5.6	889.040	3.1	13.0	4.6	109.458	-1.1	-4.5	-5.2	1.91	4.77
2002	1	5.6	879.850	-1.0	-4.1	2.7	109.985	0.5	1.9	-3.2	1.72	5.08
	2	5.8	889.723	1.1	4.6	3.0	111.132	1.0	4.2	-1.0	1.72	5.10
	3	5.8	901.530	1.3	5.4	4.6	111.455	0.3	1.2	0.7	1.64	4.26
	4	5.9	907.571	0.7	2.7	2.1	110.933	-0.5	-1.9	1.3	1.33	4.01
2003	1	5.8	919.353	1.3	5.3	4.5	111.172	0.2	0.9	1.1	1.16	3.92
	2	6.2	932.031	1.4	5.6	4.8	110.033	-1.0	-4.0	-1.0	1.04	3.62
	3	6.1	957.653	2.7	11.5	6.2	111.125	1.0	4.0	-0.3	0.93	4.23
2001	Nov	5.6	293.741	-2.7	-28.3	3.8	109.354	-0.5	-5.9	-5.4	1.87	4.65
	Dec	5.8	293.309	-0.1	-1.8	3.4	109.108	-0.2	-2.7	-5.4	1.69	5.09
2002	Jan	5.6	292.393	-0.3	-3.7	2.1	109.722	0.6	7.0	-3.9	1.65	5.04
	Feb	5.6	293.878	0.5	6.3	2.7	109.893	0.2	1.9	-3.3	1.73	4.91
	Mar	5.7	293.579	-0.1	-1.2	3.3	110.340	0.4	5.0	-2.5	1.79	5.28
	Apr	5.9	297.827	1.4	18.8	3.8	110.777	0.4	4.9	-1.8	1.72	5.21
	May	5.8	293.870	-1.3	-14.8	1.7	110.950	0.2	1.9	-1.2	1.73	5.16
	Jun	5.8	298.026	1.4	18.4	3.6	111.670	0.6	8.1	0.1	1.70	4.93
	Jul	5.8	300.842	0.9	11.9	4.4	111.541	-0.1	-1.4	0.4	1.68	4.65
	Aug	5.8	302.449	0.5	6.6	4.5	111.493	-0.0	-0.5	0.6	1.62	4.26
	Sep	5.7	298.239	-1.4	-15.5	4.8	111.330	-0.1	-1.7	1.1	1.63	3.87
	Oct	5.8	300.048	0.6	7.5	-0.6	111.031	-0.3	-3.2	1.0	1.58	3.94
	Nov	5.9	301.707	0.6	6.8	2.7	111.156	0.1	1.4	1.6	1.23	4.05
	Dec	6.0	305.816	1.4	17.6	4.3	110.612	-0.5	-5.7	1.4	1.19	4.03
2003	Jan	5.7	307.045	0.4	4.9	5.0	111.164	0.5	6.2	1.3	1.17	4.05
	Feb	5.8	302.741	-1.4	-15.6	3.0	111.581	0.4	4.6	1.5	1.17	3.90
	Mar	5.8	309.567	2.3	30.7	5.4	110.771	-0.7	-8.4	0.4	1.13	3.81
	Apr	6.0	308.675	-0.3	-3.4	3.6	110.094	-0.6	-7.1	-0.6	1.13	3.96
	May	6.1	310.214	0.5	6.1	5.6	110.019	-0.1	-0.8	-0.8	1.07	3.57
	Jun	6.4	313.142	0.9	11.9	5.1	109.986	-0.0	-0.4	-1.5	0.92	3.33
	Jul	6.2	317.512	1.4	18.1	5.5	110.829	0.8	9.6	-0.6	0.90	3.98
	Aug	6.1	320.703	1.0	12.7	6.0	111.003	0.2	1.9	-0.4	0.95	4.45
	Sep	6.1	319.438	-0.4	-4.6	7.1	111.543	0.5	6.0	0.2	0.94	4.27
	Oct	6.0	318.490	-0.3	-3.5	6.1	111.751	0.2	2.3	0.6	0.92	4.29
	Nov										0.93	4.30

		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	
1998		163.0			1.5	173.4			2.3		130.7			-0.9	
1999		166.6			2.2	177.0			2.1		133.0			1.8	
2000		172.2			3.4	181.3			2.4		138.0			3.7	
2001		177.1			2.8	186.1			2.7		140.7			2.0	
2002		179.9			1.6	190.4			2.3		138.9			-1.3	
2001	1	175.9	0.9	3.8	3.4	3.8	184.3	0.7	2.9	2.7	2.9	141.7	1.3	5.4	4.0
	2	177.3	0.8	3.2	3.4	3.5	185.5	0.6	2.6	2.6	2.8	142.0	0.2	0.8	3.4
	3	177.7	0.2	1.0	2.7	2.7	186.7	0.7	2.7	2.7	2.7	140.7	-0.9	-3.5	1.6
	4	177.4	-0.2	-0.6	1.8	1.8	188.0	0.7	2.7	2.7	2.7	138.4	-1.7	-6.6	-1.1
2002	1	178.0	0.3	1.3	1.2	1.3	189.0	0.5	2.1	2.5	2.1	138.3	-0.0	-0.1	-2.4
	2	179.5	0.9	3.5	1.3	2.4	190.0	0.5	2.1	2.4	2.1	138.7	0.2	1.0	-2.3
	3	180.5	0.5	2.2	1.6	2.3	191.0	0.5	2.2	2.3	2.2	138.7	0.0	0.2	-1.4
	4	181.4	0.5	2.0	2.2	2.2	191.8	0.4	1.8	2.1	2.1	139.7	0.7	2.8	1.0
2003	1	183.1	1.0	3.9	2.9	3.9	192.4	0.3	1.3	1.8	1.3	142.9	2.3	9.6	3.3
	2	183.4	0.1	0.6	2.2	2.2	192.8	0.2	0.8	1.5	1.0	142.2	-0.5	-1.9	2.6
	3	184.5	0.6	2.3	2.2	2.3	193.6	0.4	1.5	1.3	1.2	143.3	0.8	3.1	3.3
2001	Oct	177.6	-0.3	-3.3	2.1	2.1	187.4	0.2	1.9	2.6	2.7	139.1	-1.6	-17.2	-0.3
	Nov	177.4	-0.1	-1.3	1.8	1.8	188.1	0.4	4.6	2.7	2.9	138.3	-0.6	-6.7	-1.2
	Dec	177.3	-0.1	-0.7	1.5	1.5	188.4	0.2	1.9	2.8	2.8	137.7	-0.4	-5.1	-1.7
2002	Jan	177.6	0.2	2.0	1.1	2.0	188.7	0.2	1.9	2.6	1.9	137.7	0.0	0.0	-2.8
	Feb	177.9	0.2	2.0	1.1	2.0	189.0	0.2	1.9	2.6	1.9	138.1	0.3	3.5	-2.7
	Mar	178.5	0.3	4.1	1.4	2.7	189.2	0.1	1.3	2.4	1.7	139.2	0.8	10.0	-1.6
	Apr	179.3	0.4	5.5	1.6	3.4	189.7	0.3	3.2	2.5	2.1	139.0	-0.1	-1.7	-2.1
	May	179.5	0.1	1.3	1.2	3.0	190.0	0.2	1.9	2.5	2.1	138.4	-0.4	-5.1	-2.7
	Jun	179.8	0.2	2.0	1.1	2.8	190.2	0.1	1.3	2.3	1.9	138.6	0.1	1.7	-2.2
	Jul	180.1	0.2	2.0	1.5	2.7	190.5	0.2	1.9	2.2	1.9	138.6	0.0	0.0	-1.1
	Aug	180.5	0.2	2.7	1.7	2.7	191.1	0.3	3.8	2.4	2.2	138.6	0.0	0.0	-1.5
	Sep	180.9	0.2	2.7	1.6	2.7	191.4	0.2	1.9	2.3	2.1	139.0	0.3	3.5	-1.6
	Oct	181.2	0.2	2.0	2.0	2.6	191.6	0.1	1.3	2.2	2.0	140.1	0.8	9.9	0.7
	Nov	181.4	0.1	1.3	2.3	2.5	191.8	0.1	1.3	2.0	2.0	139.7	-0.3	-3.4	1.0
	Dec	181.6	0.1	1.3	2.4	2.4	192.1	0.2	1.9	2.0	2.0	139.3	-0.3	-3.4	1.2
2003	Jan	182.2	0.3	4.0	2.6	4.0	192.3	0.1	1.3	1.9	1.3	141.2	1.4	17.7	2.5
	Feb	183.3	0.6	7.5	3.0	5.7	192.5	0.1	1.3	1.9	1.3	142.8	1.1	14.5	3.4
	Mar	183.9	0.3	4.0	3.0	5.2	192.5	0.0	0.0	1.7	0.8	144.8	1.4	18.2	4.0
	Apr	183.3	-0.3	-3.8	2.2	2.8	192.5	0.0	0.0	1.5	0.6	142.4	-1.7	-18.2	2.4
	May	183.3	0.0	0.0	2.1	2.3	193.0	0.3	3.2	1.6	1.1	141.8	-0.4	-4.9	2.5
	Jun	183.6	0.2	2.0	2.1	2.2	193.0	0.0	0.0	1.5	0.9	142.5	0.5	6.1	2.8
	Jul	183.9	0.2	2.0	2.1	2.2	193.4	0.2	2.5	1.5	1.2	142.8	0.2	2.6	3.0
	Aug	184.5	0.3	4.0	2.2	2.4	193.6	0.1	1.2	1.3	1.2	143.4	0.4	5.2	3.5
	Sep	185.0	0.3	3.3	2.3	2.5	193.7	0.1	0.6	1.2	1.1	143.8	0.3	3.4	3.5
	Oct	185.0	0.0	0.0	2.1	2.3	194.1	0.2	2.5	1.3	1.3	144.9	0.8	9.6	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 1996 dollars. The **ISM** (formerly Purchasing Managers') **Index** is a weighted average of diffusion indexes for new orders, production, supplier deliveries, inventories, and employment. **Aggregate and Average Weekly Hours** are paid hours of production and nonsupervisory employees. The **Inventory-Sales Ratio** uses nominal (current-dollar) inventory and sales data.

Page 6: For information on how to calculate the **Contribution** of a component to the overall GDP growth rate, see the October 1999 issue of the Survey of Current Business, p. 16. The sign is changed for **Imports**.

Page 7: Ten-year **Treasury Yields** are adjusted to constant maturity; three-month yields are secondary market averages. All rates used in the yield curves are adjusted to constant maturity. The 30-year constant maturity series was discontinued by the Treasury Department as of Feb. 18, 2002. **Standard and Poor's 500 Index with Reinvested Dividends** shows the total return: capital gains plus dividends.

Pages 8, 9: **Oil** (West Texas intermediate) and **Natural Gas** (Henry Hub) spot and futures prices are listed in the *Wall Street Journal*. Spot prices are monthly averages of daily prices; futures prices are usually taken from the last trading day of the month. **Consumer Price Index** is for all urban consumers. The **Consumption Chain Price Index** is the index associated with the personal consumption expenditures component of GDP. The **Employment Cost Index (ECI)** covers private nonfarm employers. **ECI Compensation** refers to a fixed sample of jobs, while **Compensation per Hour** covers all workers in the nonfarm business sector in a given quarter. In both cases, compensation is wages and salaries plus benefits.

Pages 10, 11: Effective with the May 2003 **Employment Situation**, the establishment survey data for employment, hours, and earnings have been converted from the 1987 SIC system to the 2002 NAICS system. All published NAICS-based labor series have been revised back to at least 1990. For more information see <http://www.bls.gov/ces/>. **Nonfarm Payroll Employment** is counted in a survey of about 400,000 establishments (Current Employment Survey). It excludes self-employed individuals and workers in private households, but double-counts individuals with more than one job. The **Household Survey** (Current Population Survey) of about 60,000 households provides estimates of civilian employment, unemployment rate, labor force participation rate, and employment-population ratio. **Population** is civilian, noninstitutional, 16 years and over. The 90 percent confidence intervals for the unemployment rate ( $\pm 0.2$  percentage points) and change in household survey employment ( $\pm 290,000$ ) measure uncertainty due to sample size. Because the household survey was changed in January 1994, data prior to this date are not strictly comparable. The Bureau of Labor Statistics announced several revisions to the Household Survey on Feb. 7, 2003, with the release of the January 2003 data. For more information, see [www.bls.gov/cps/](http://www.bls.gov/cps/).

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

Pages 14, 15: Overall **Gross Saving** includes government saving, which is the sum of the government surplus and capital consumption (see notes for pp. 16-17). **Net Foreign Investment (NFI)** is U.S. investment abroad minus foreign investment in the U.S. Aside from a statistical discrepancy, NFI also equals the difference between gross domestic investment and saving. The comprehensive revision introduced the **Equipment & Software** component of business investment.

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:** Several 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. These include establishment survey data for employment, earnings, and hours; retail sales; manufacturers' orders, shipments, and inventories, and the business inventory-to-sales ratio.

## 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).