



Overblown Productivity?

A strange thing happened on the way to the 21st century: American workers became increasingly more productive. Productivity at business establishments (excluding farming) averaged growth of 1.9 percent per year in the 1990s—a half-percentage point higher than in the 1980s. But the real stellar performer was the manufacturing sector. In the 1990s, productivity in this sector grew at a phenomenal 4 percent annual rate, which means that people working at manufacturing firms produced considerably more output per hour each year. And the intriguing part is that this productivity growth occurred as average employment at these firms actually *fell* half of a percentage point each year during the 90s. Talk about know-how in American manufacturing!

Across all businesses, though, the story's not as glamorous. Yes, productivity growth during the 90s was up half of a percentage point a year from the 80s. And, yes, employment growth at private nonfarm businesses in the 90s was slower—though almost imperceptibly slower—than in the 80s. But total employment (unlike manufacturing employment) was still *growing*—an average of 1.9 percent a year during the 90s versus 2 percent in the 80s—while productivity was rising.

Does this mean that employees at manufacturing firms work faster than others? Not at all. One simple explanation is that manufacturing firms generally add capital to their production processes faster than nonmanufacturing (or service-oriented) firms, which enables manufacturing workers to increase their productivity faster. Is this, then, the end of the story? Not quite.

The figures for productivity growth at manufacturing firms are a bit misleading. The problem is that when the Bureau of Labor Statistics counts the people working at manufacturing firms, it counts only those who are on the payrolls of the firms. People who work at these plants, but are paid by someone else—such as a temporary employment agency—are not counted, *even though they*

are producing output for manufacturers. Thus, the productivity figures are slightly exaggerated because the number of workers actually producing the output is larger than what's reported.

How much larger is the number? Economists Marcello Estevão and Saul Lach noted in a recent study that manufacturing firms employed about 890,000 temporary workers between 1991 and 1997, a figure that represents about 5 percent of the 18.5 million or so workers on the books of these firms. While not a tremendous amount, the number is not insignificant, either. And when Estevão and Lach added the temporary workers to the productivity measure, they found that the official manufacturing productivity growth figures were overstated by about half of a percentage point per year. In other words, including *all* of the workers lowers manufacturing productivity growth in the 1990s from 4 percent to about 3.5 percent each year.

—Adam M. Zaretsky

For more information, see the forthcoming article in the July 2000 issue of the St. Louis Fed's The Regional Economist.

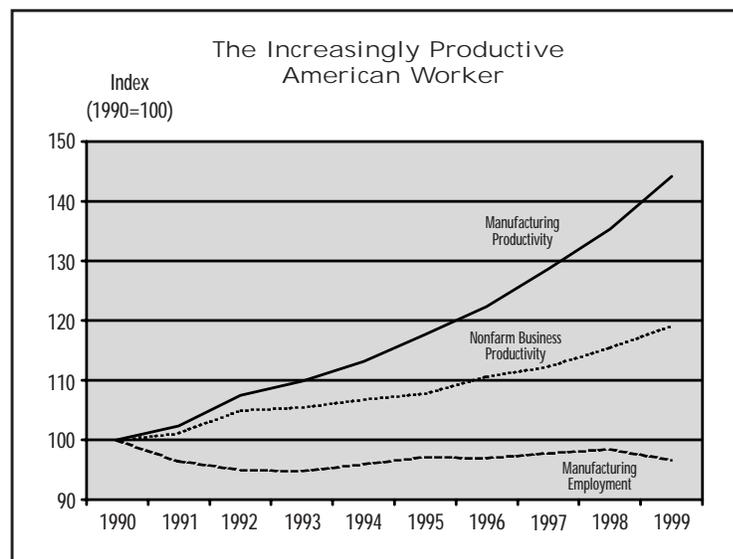


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Conventions used in this publication:

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 in the previous year. The *percent change at annual rate* 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 percent change at annual rate of X between the previous quarter $t-1$ and the current quarter t is:

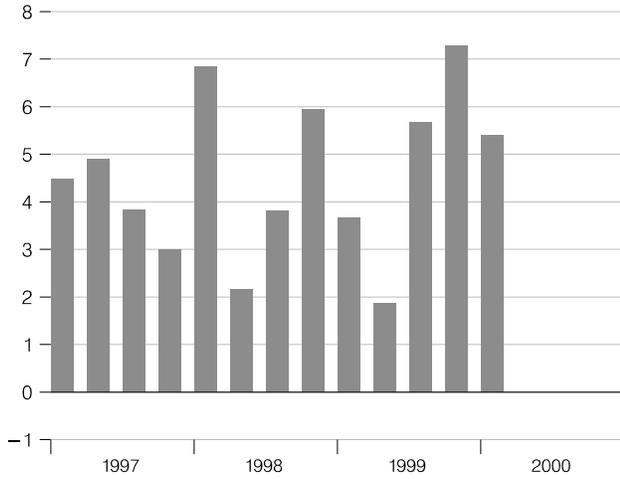
$$100 \times \left[\left(\frac{X_t}{X_{t-1}} \right)^4 - 1 \right]$$

For monthly data replace 4 with 12.

3. All data with significant seasonal patterns are seasonally adjusted, unless labeled NSA.

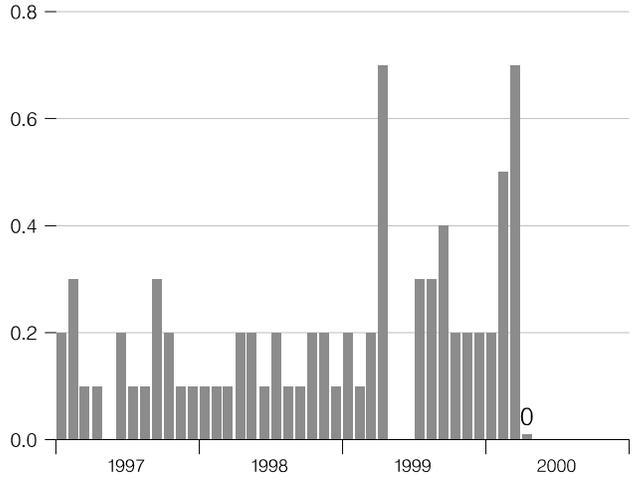
Real GDP Growth

Percent change at annual rate



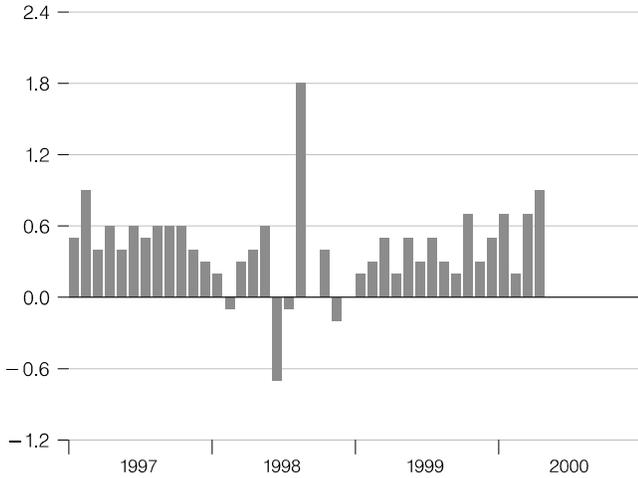
Consumer Price Index

Percent change



Industrial Production

Percent change



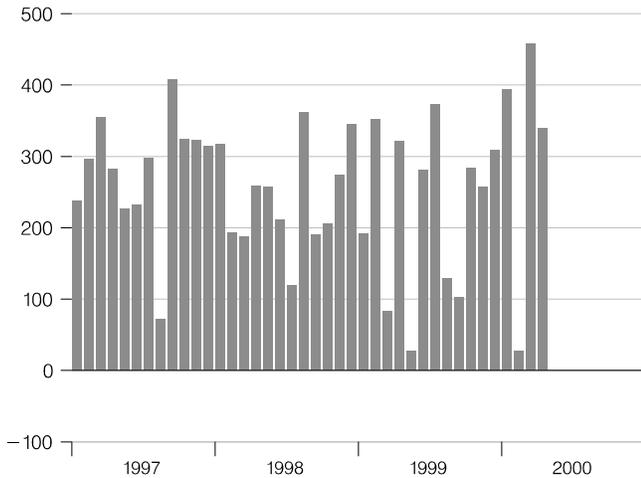
Interest Rates

Percent



Change in Nonfarm Payrolls

Thousands



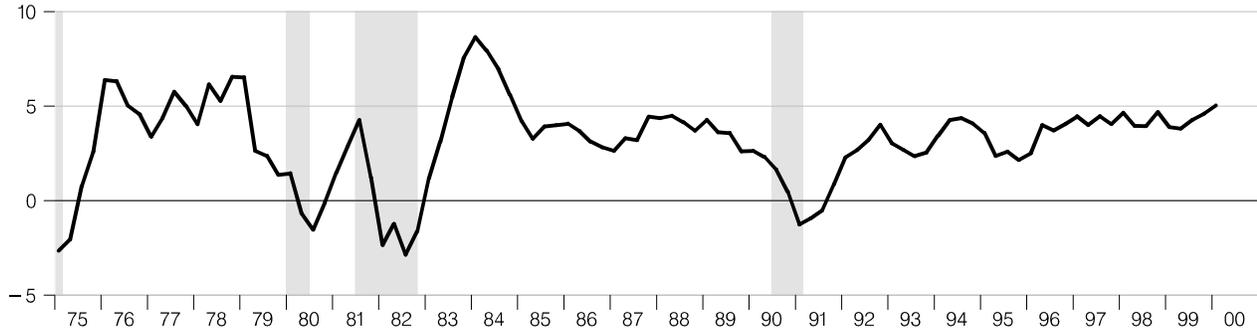
Unemployment Rate

Percent of labor force



Real Gross Domestic Product

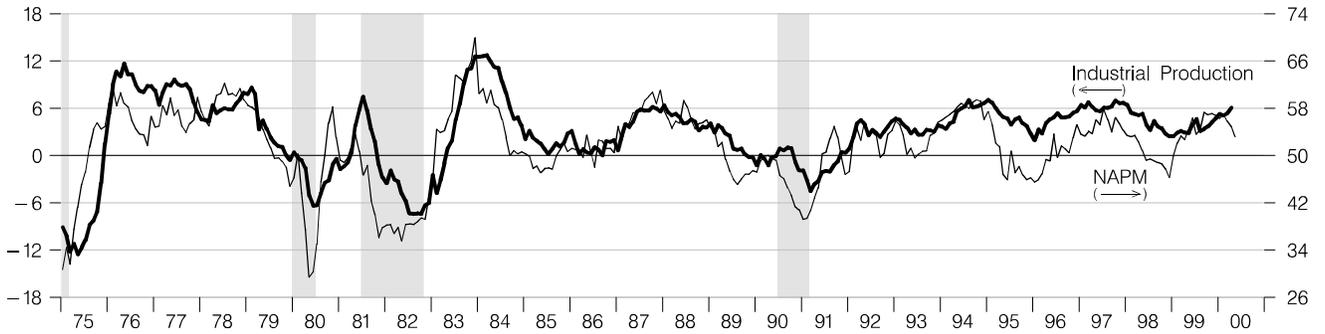
Percent change from year ago



Industrial Production and Purchasing Managers' (NAPM) Indexes

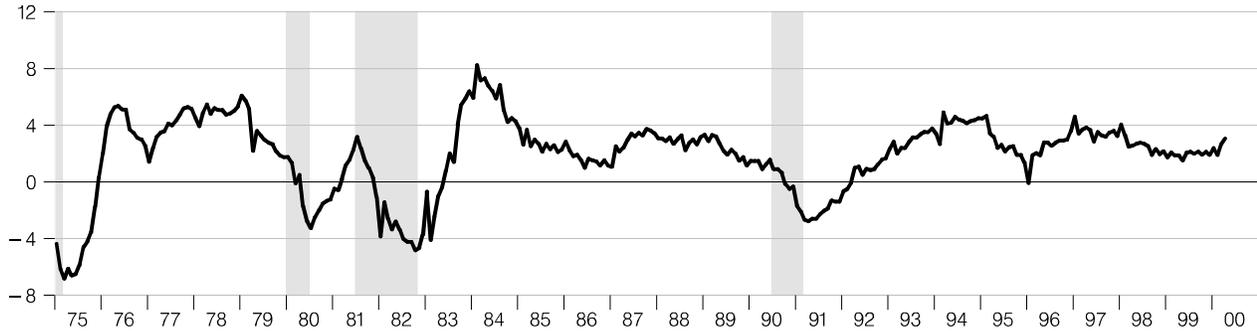
Percent change from year ago

Index



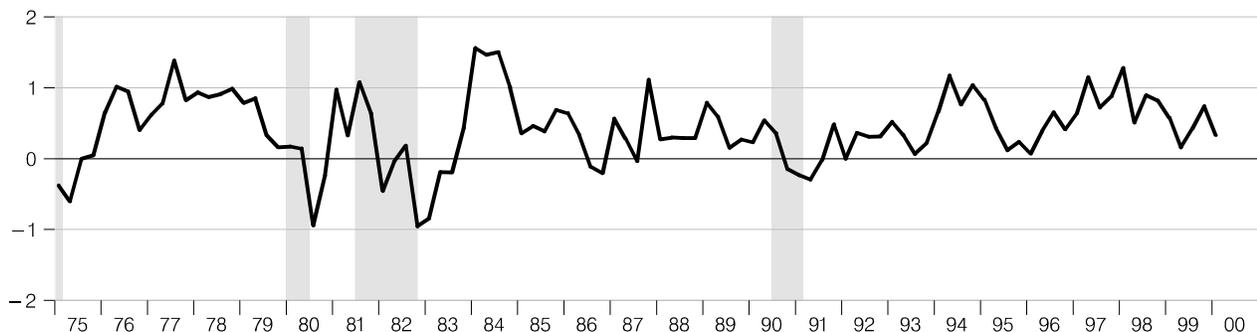
Aggregate Private Nonfarm Hours

Percent change from year ago

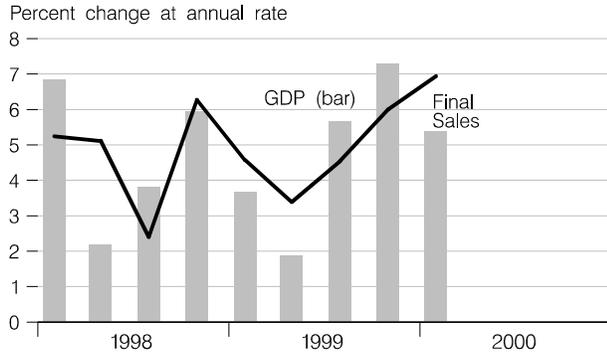


Real Change in Private Inventories

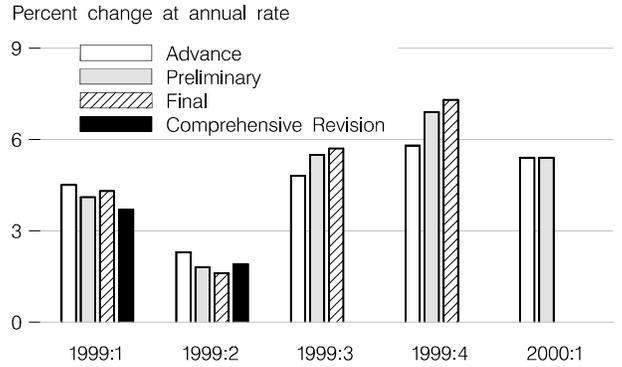
Percent of GDP



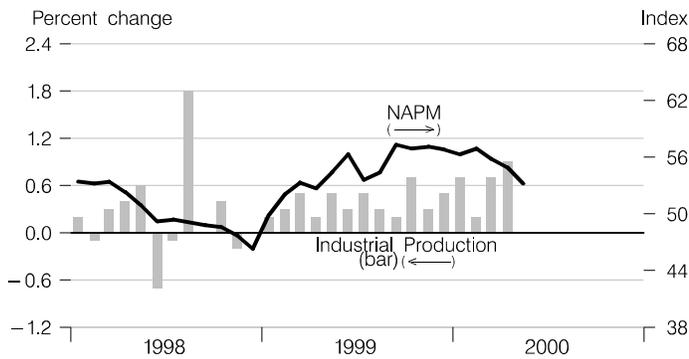
Real Final Sales and GDP



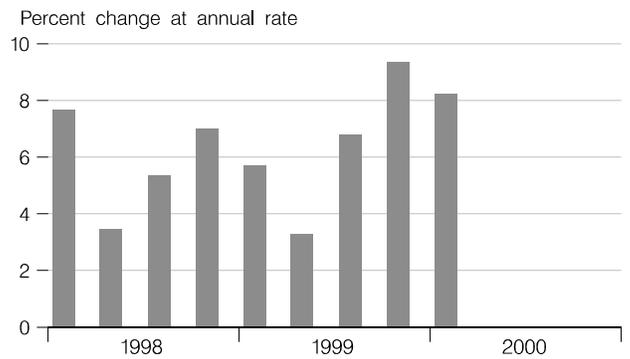
Real GDP Revisions



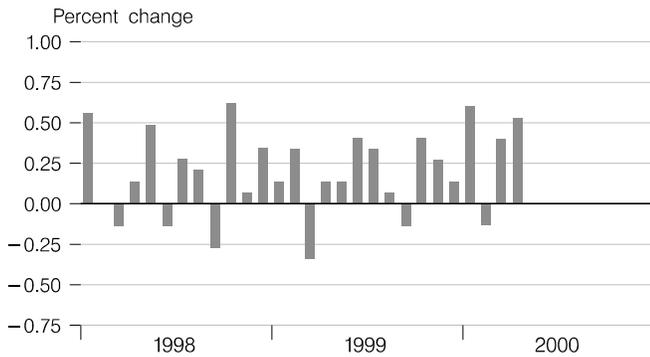
Industrial Production and NAPM Index



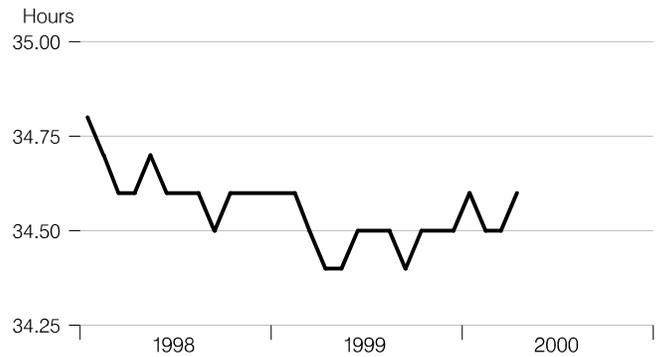
Nominal Gross Domestic Product



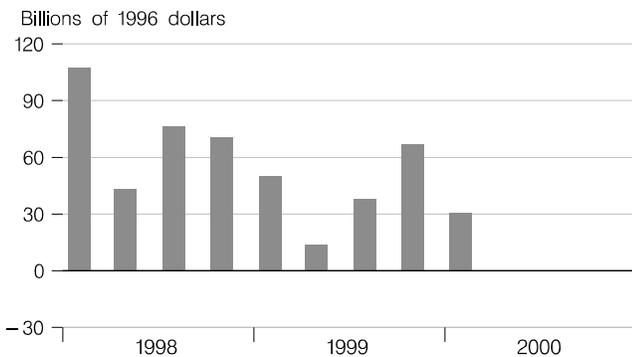
Aggregate Private Nonfarm Hours



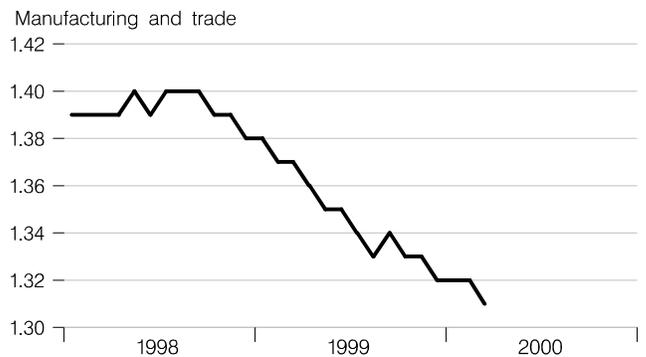
Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

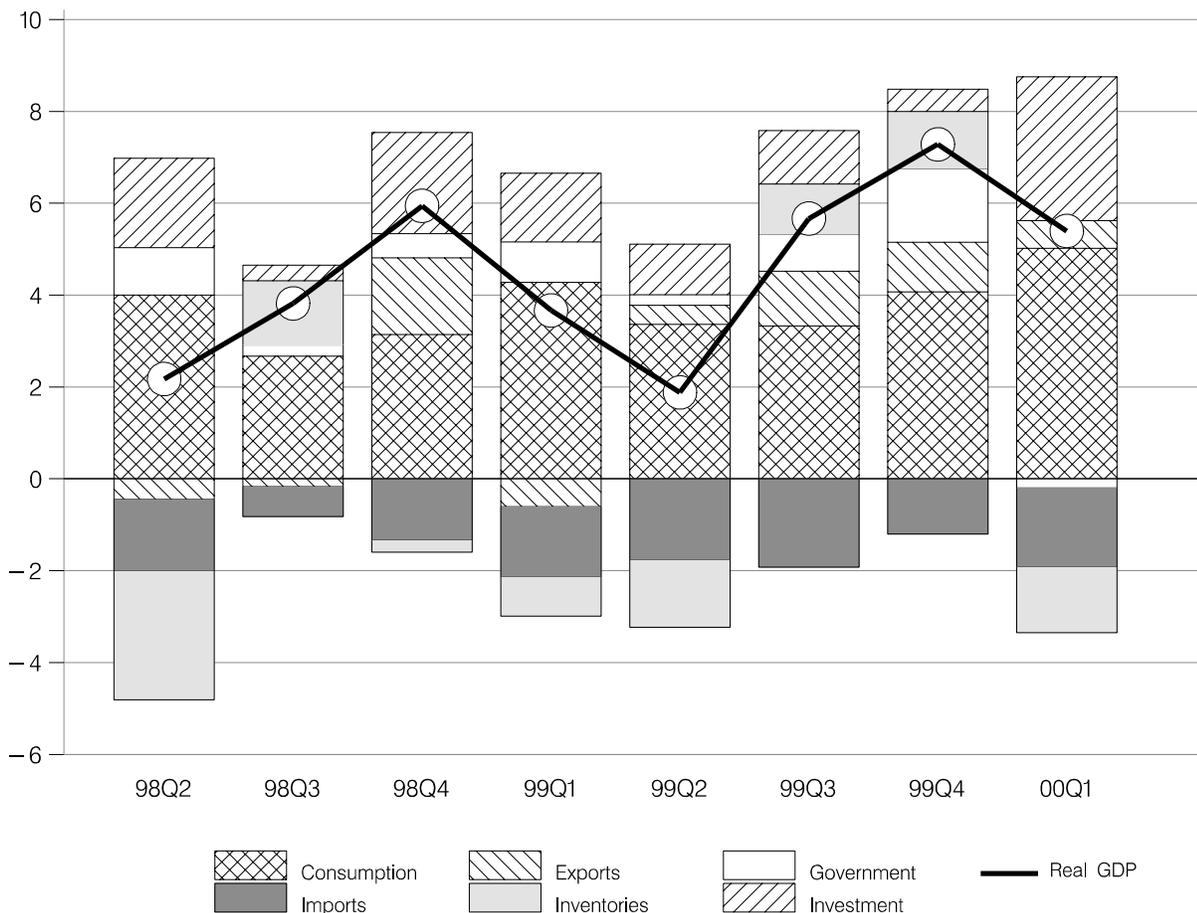


Inventory-Sales Ratio



Contribution of Components to Real GDP Growth

Percent change at annual rate

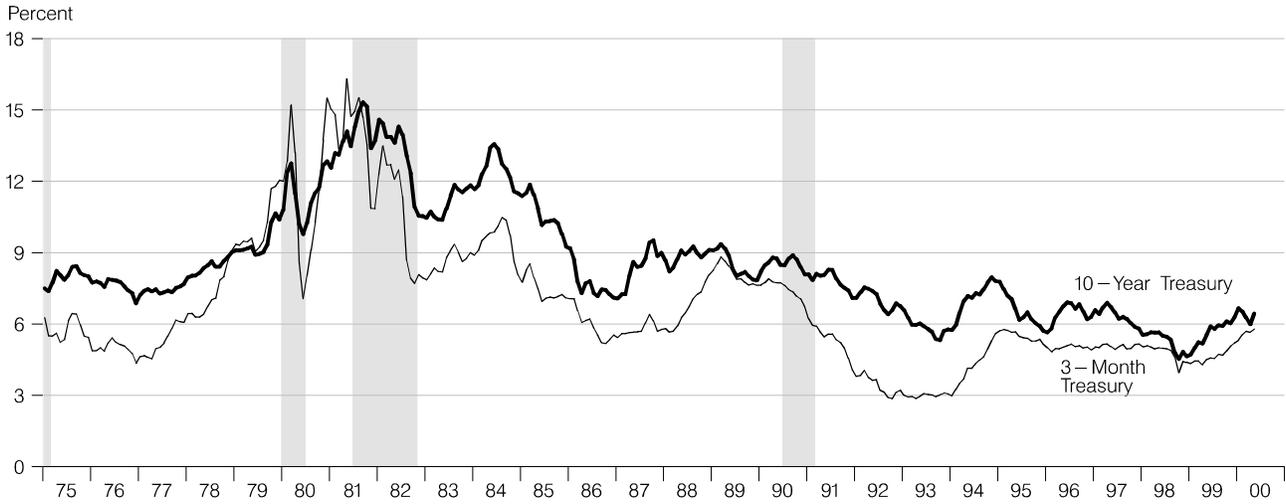


Contributions to Real GDP Growth Rate

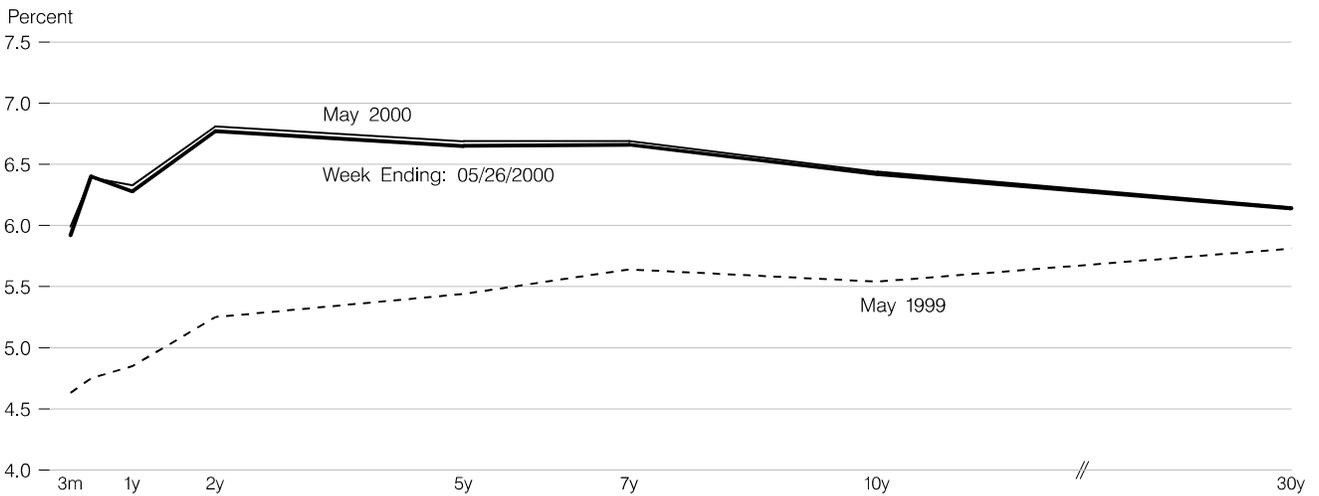
	1998			1999				2000
	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Real GDP	2.17	3.82	5.94	3.67	1.88	5.67	7.28	5.40
Final Sales	4.97	2.42	6.20	4.52	3.34	4.58	6.04	6.83
Change in Inventory	-2.80	1.40	-0.26	-0.85	-1.46	1.09	1.24	-1.43
Consumption	4.00	2.67	3.14	4.28	3.36	3.33	4.07	5.02
Fixed Investment	1.95	0.34	2.20	1.49	1.10	1.16	0.48	3.13
Nonresidential	1.42	0.01	1.79	0.95	0.86	1.33	0.39	2.90
Residential	0.53	0.33	0.41	0.54	0.24	-0.17	0.09	0.23
Government	1.03	0.24	0.53	0.88	0.23	0.81	1.61	-0.20
Federal	0.69	-0.14	0.24	-0.03	0.13	0.26	0.87	-1.00
State and Local	0.34	0.38	0.29	0.91	0.10	0.55	0.75	0.80
Net Exports	-2.01	-0.82	0.33	-2.13	-1.35	-0.73	-0.12	-1.12
Exports	-0.45	-0.17	1.67	-0.61	0.42	1.19	1.08	0.60
Imports	-1.56	-0.65	-1.34	-1.53	-1.77	-1.92	-1.20	-1.72
Residual	0.40	-0.07	-0.08	0.34	0.35	0.05	0.01	0.06

Federal Reserve Bank of St. Louis

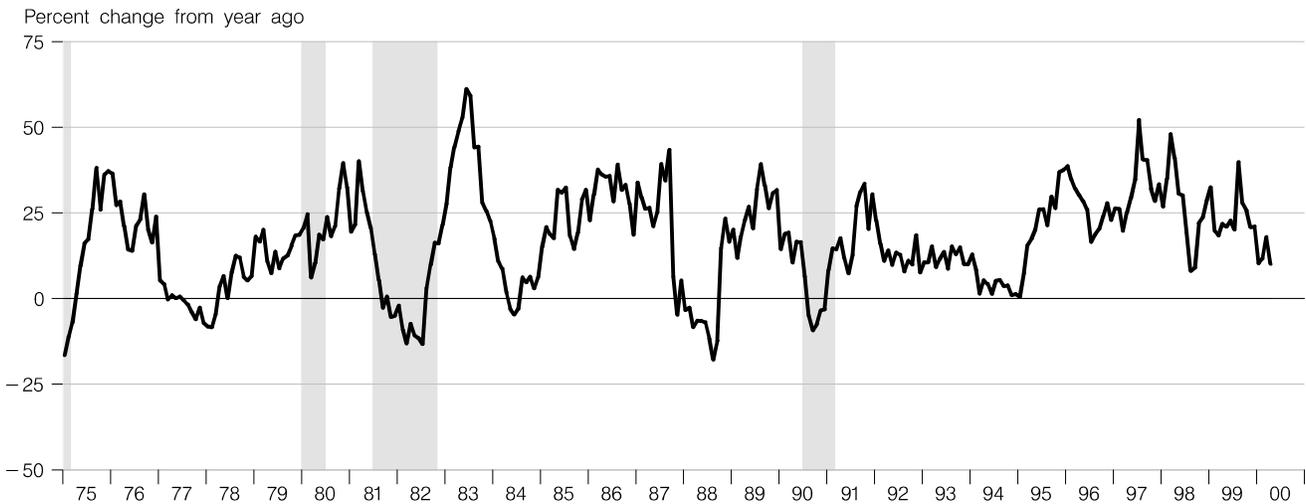
Interest Rates



Treasury Yield Curve

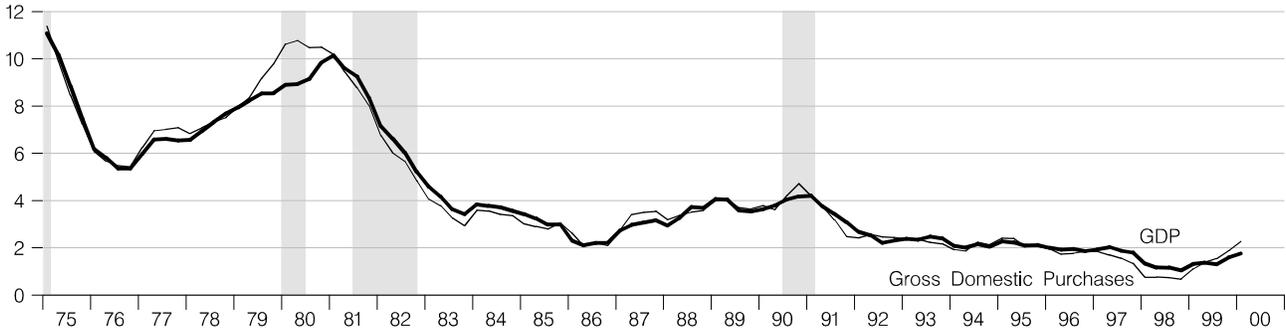


Standard and Poor's 500 Index with Reinvested Dividends



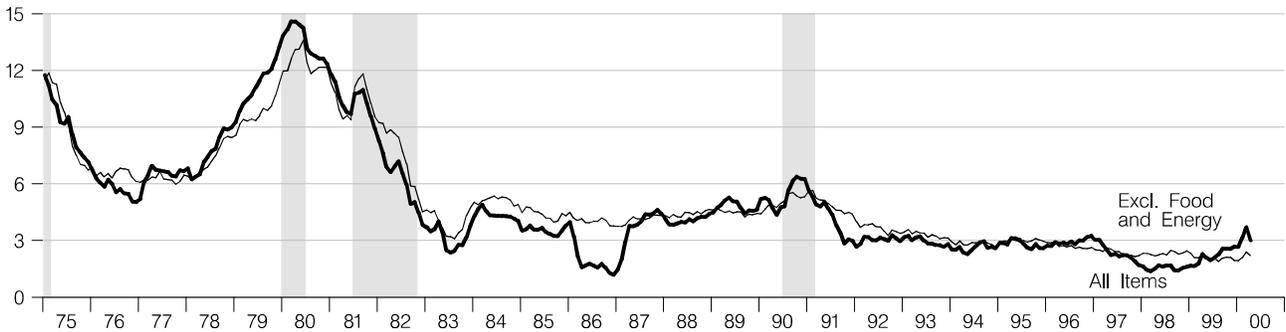
NIPA Chain Price Indexes

Percent change from year ago



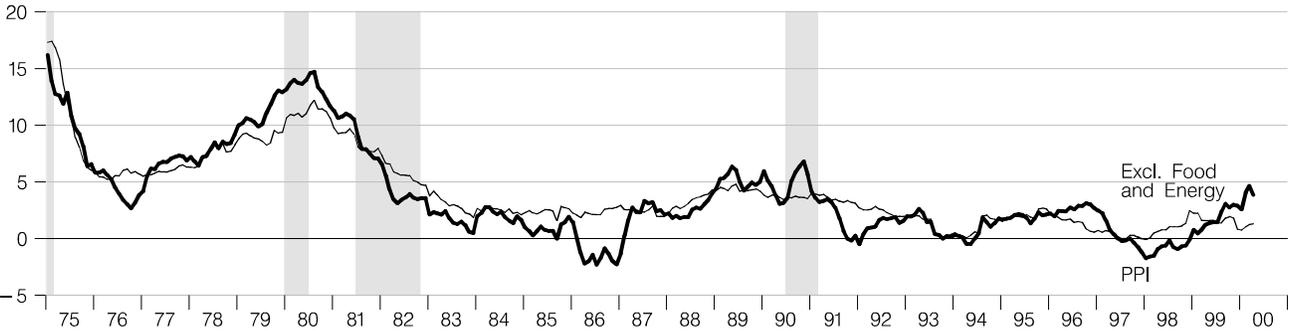
Consumer Price Index

Percent change from year ago



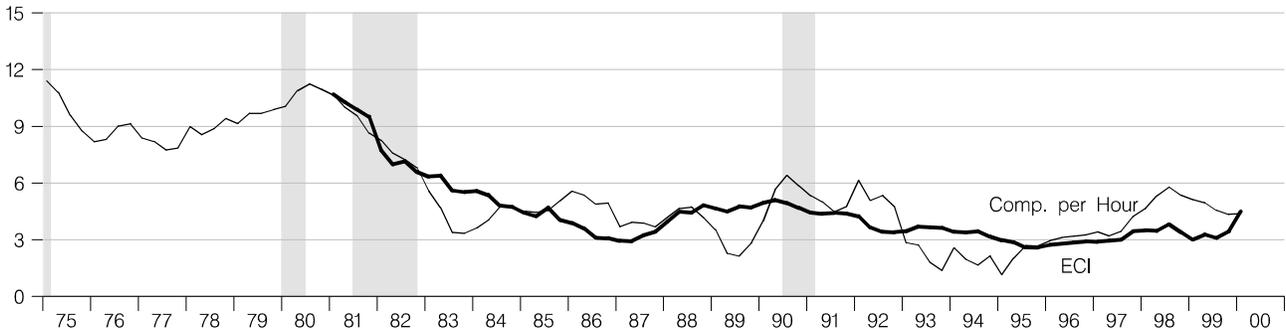
Producer Price Index, Finished Goods

Percent change from year ago



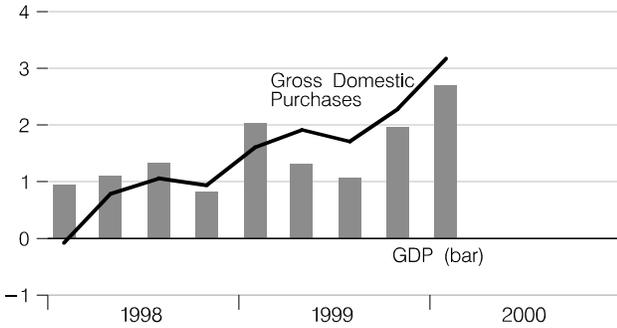
Employment Cost Index and Compensation per Hour

Percent change from year ago



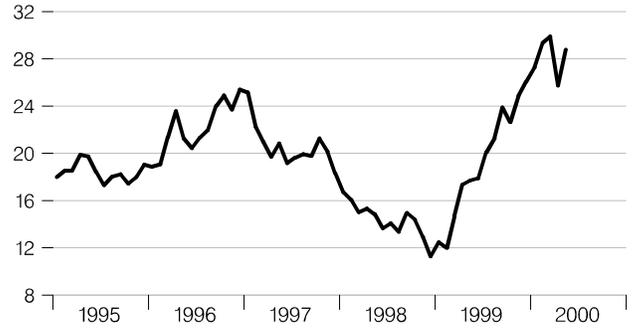
NIPA Chain Price Indexes

Percent change at annual rate



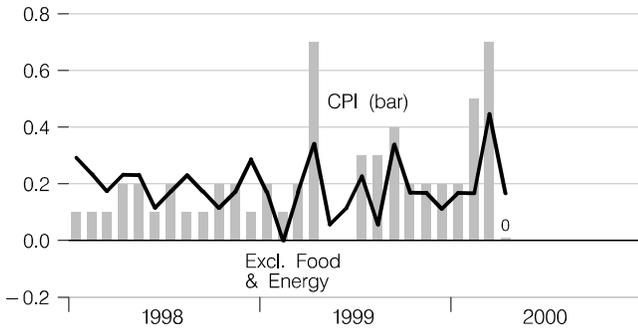
Crude Oil Price

Dollars per barrel



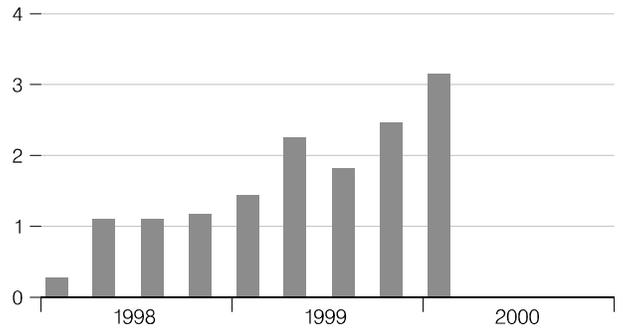
Consumer Price Index

Percent change



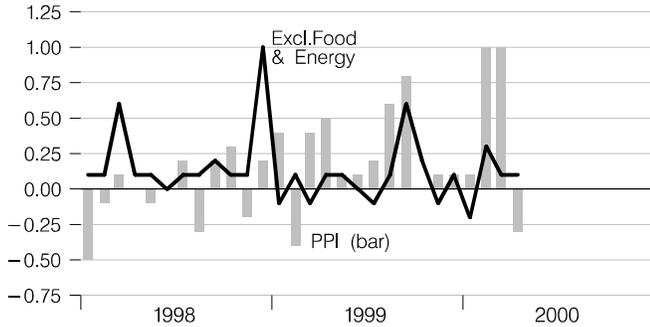
Consumption Chain Price Index

Percent change at annual rate



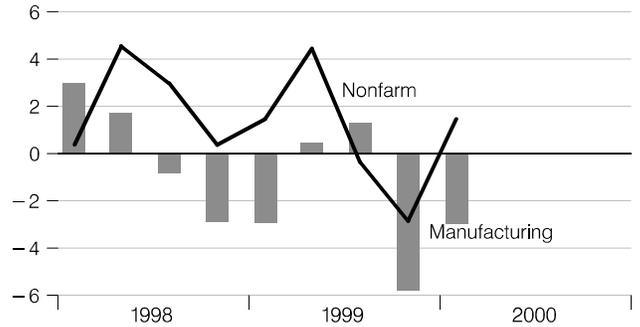
Producer Price Index, Finished Goods

Percent change



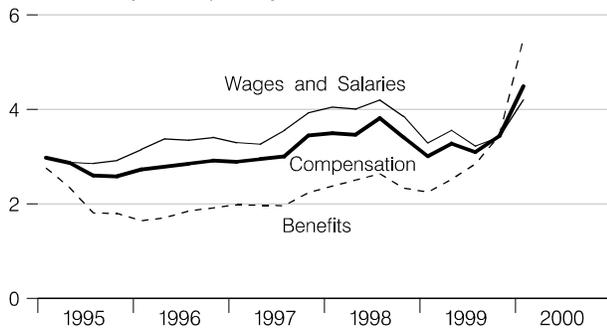
Unit Labor Cost

Percent change at annual rate



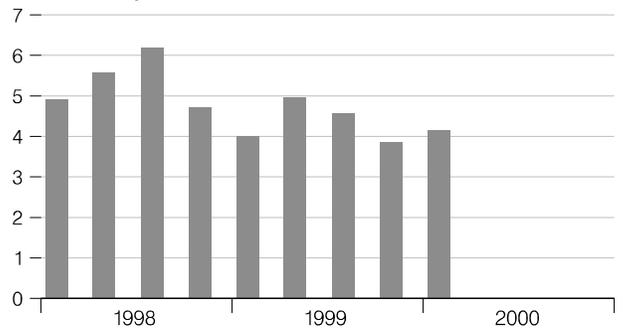
Employment Cost Index

Percent change from year ago



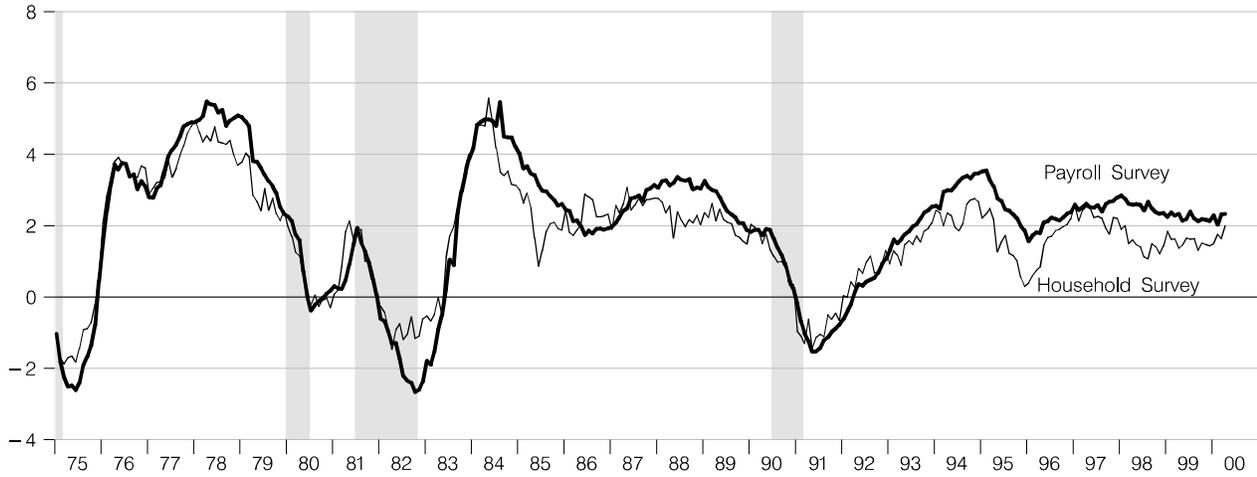
Compensation per Hour

Percent change at annual rate



Employment

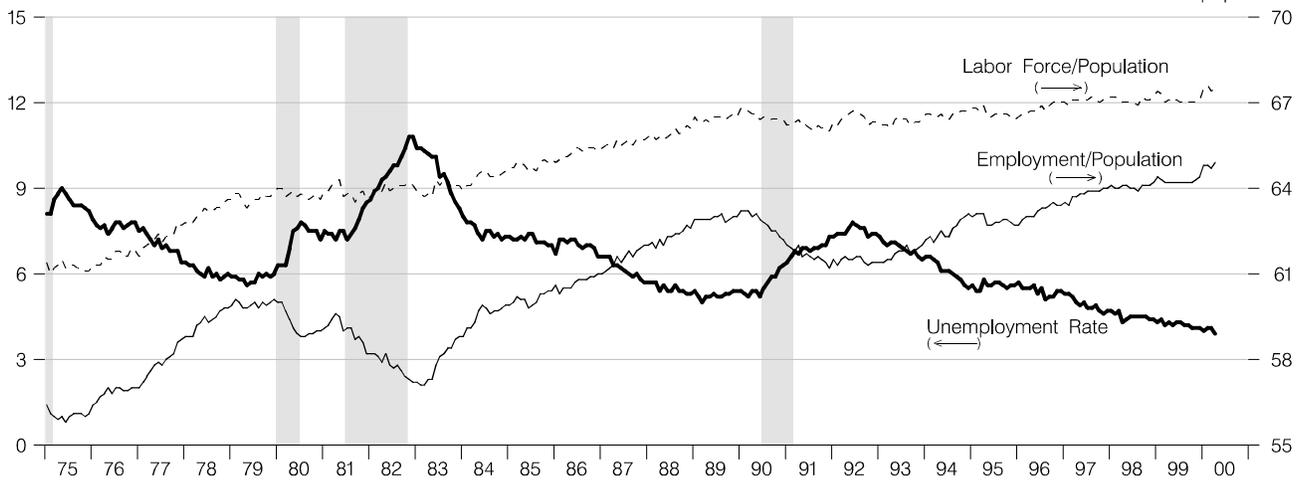
Percent change from year ago



Unemployment, Labor Force Participation and Employment Rates

Percent of labor force

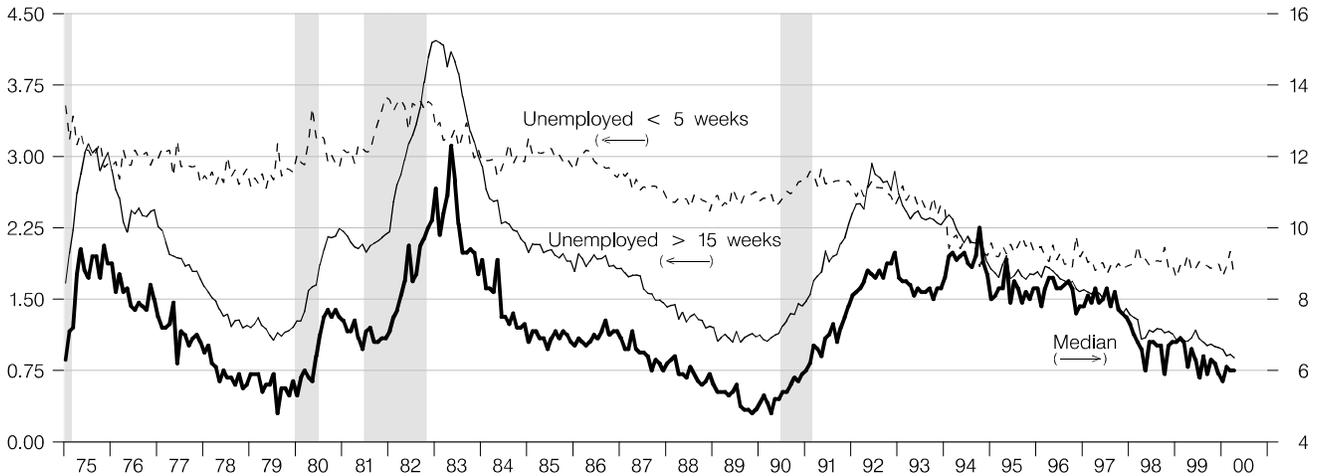
Percent of population



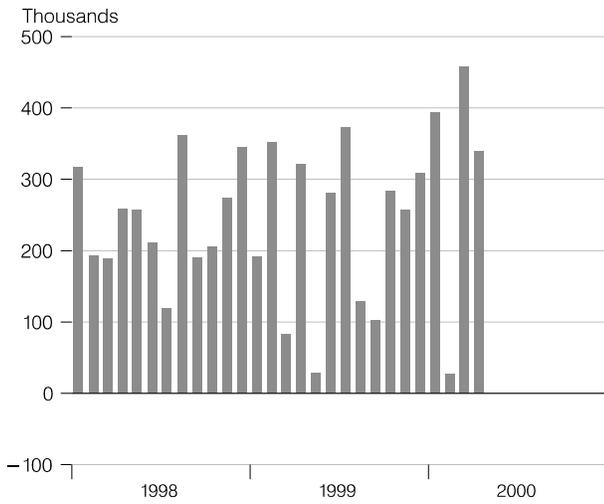
Duration of Unemployment

Percent of labor force

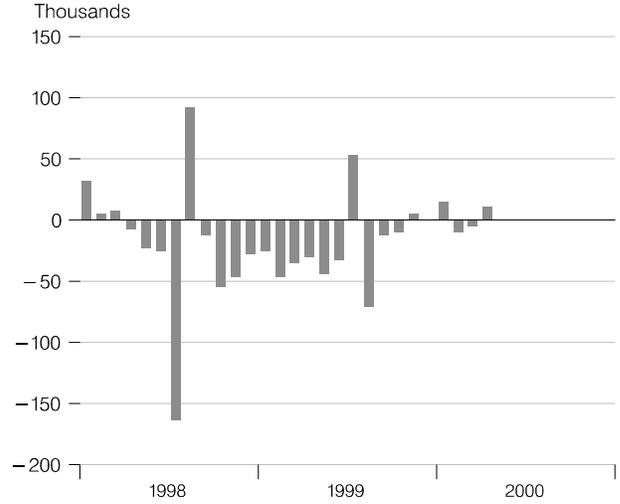
Weeks



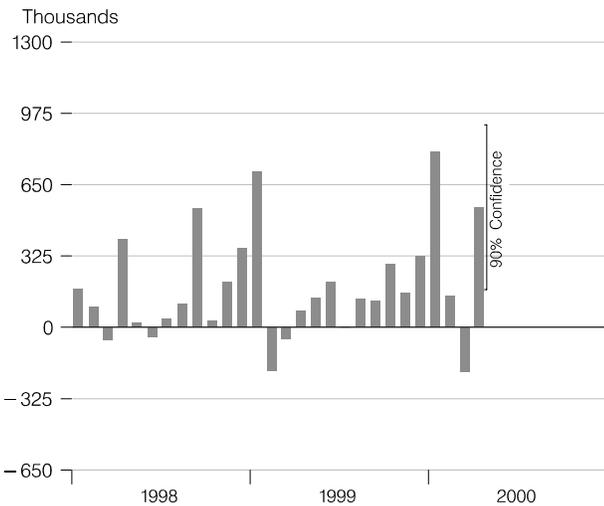
Change in Nonfarm Payrolls



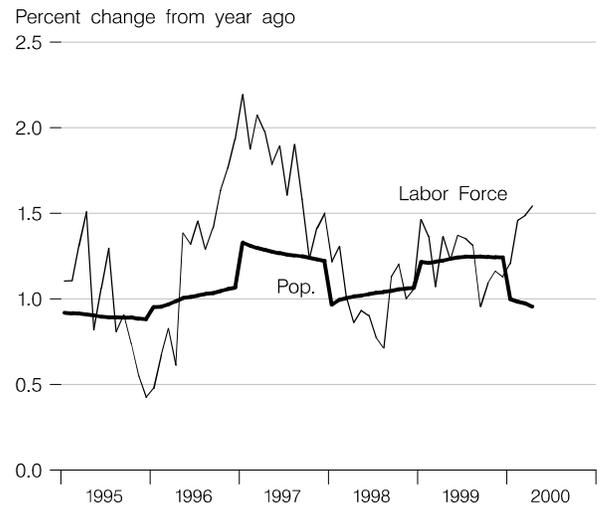
Change in Manufacturing Payrolls



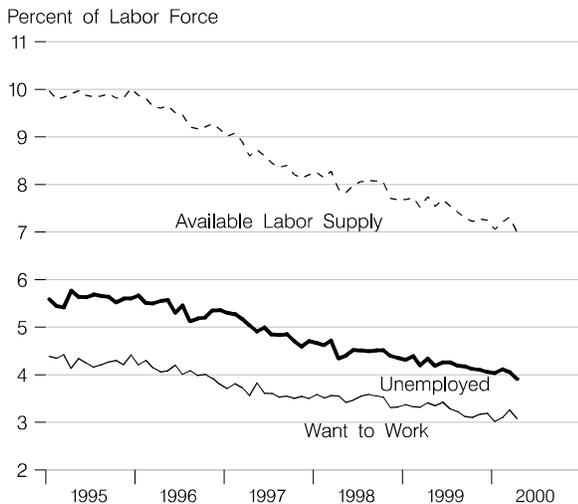
Change in Household Employment



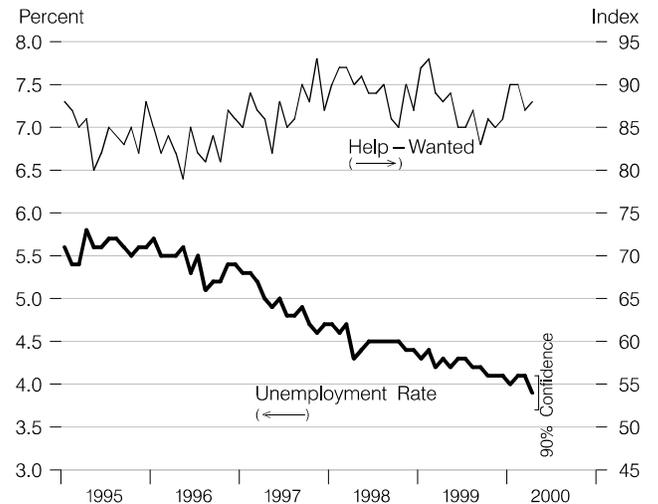
Labor Force and Population



Available Labor Supply and Components

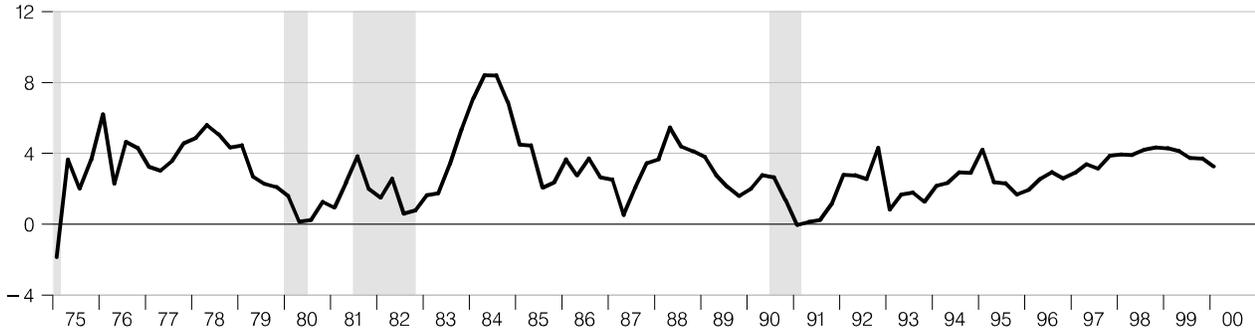


Unemployment Rate and Help-Wanted Advertising Index



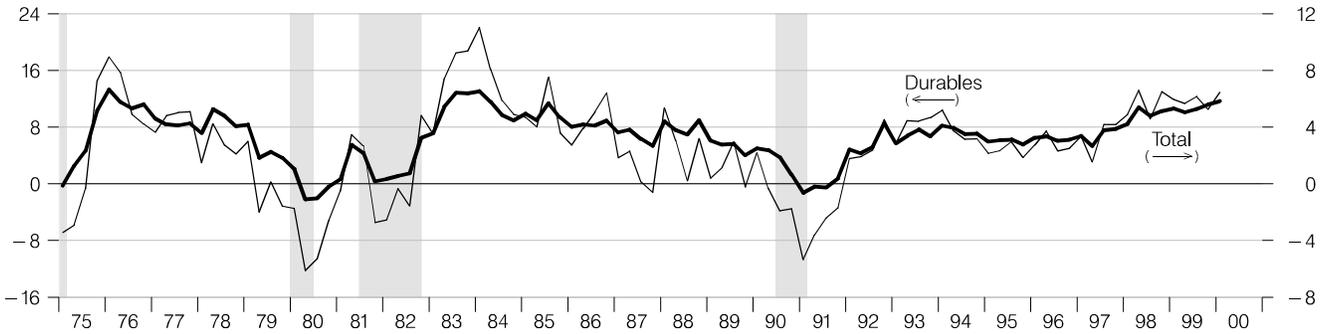
Real Disposable Personal Income

Percent change from year ago, quarterly data



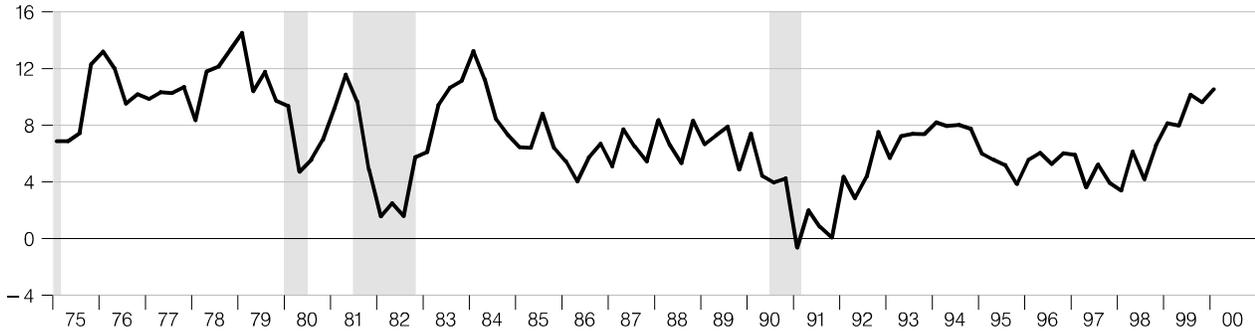
Real Consumption

Percent change from year ago, quarterly data



Retail Sales

Percent change from year ago, quarterly average



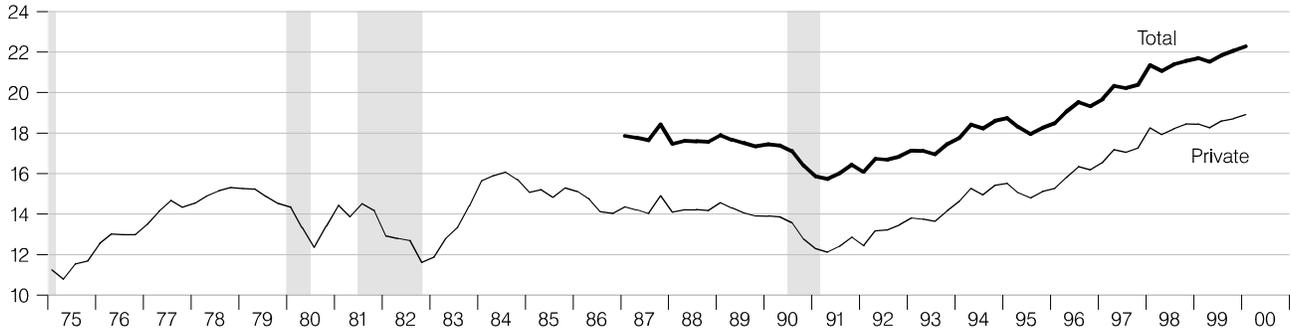
Household Debt Outstanding

Percent change from year ago, quarterly data



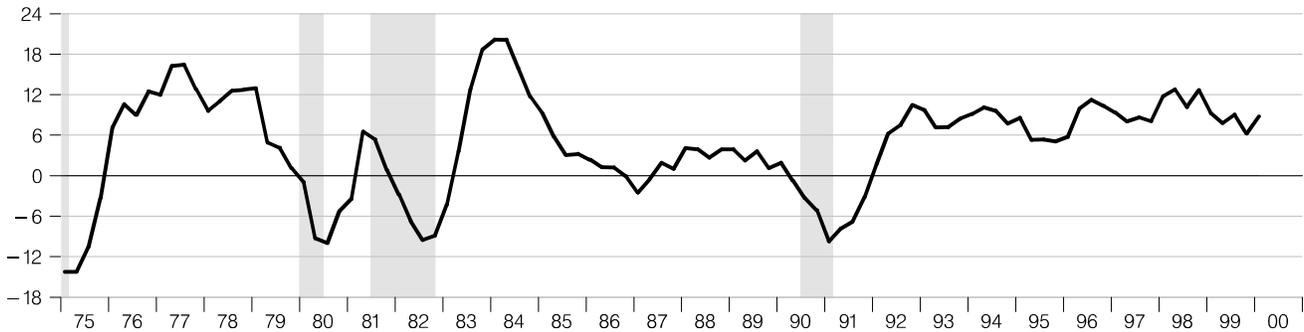
Real Investment

Percent of GDP



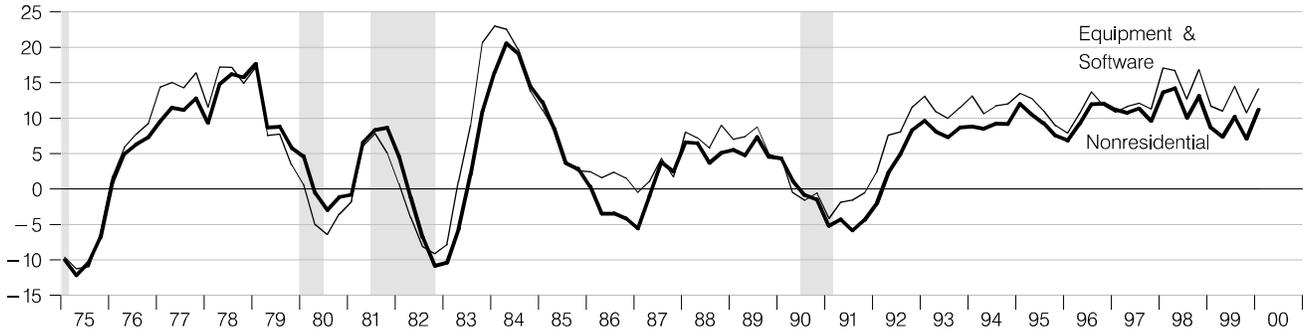
Real Private Fixed Investment

Percent change from year ago



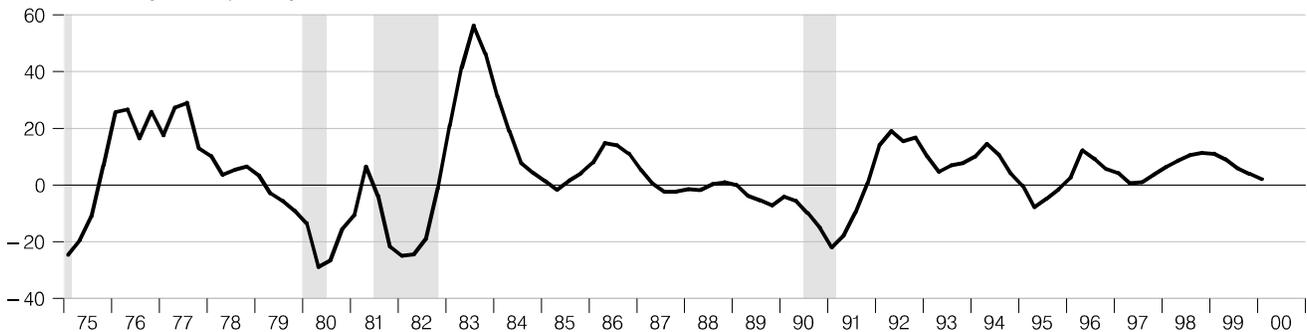
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

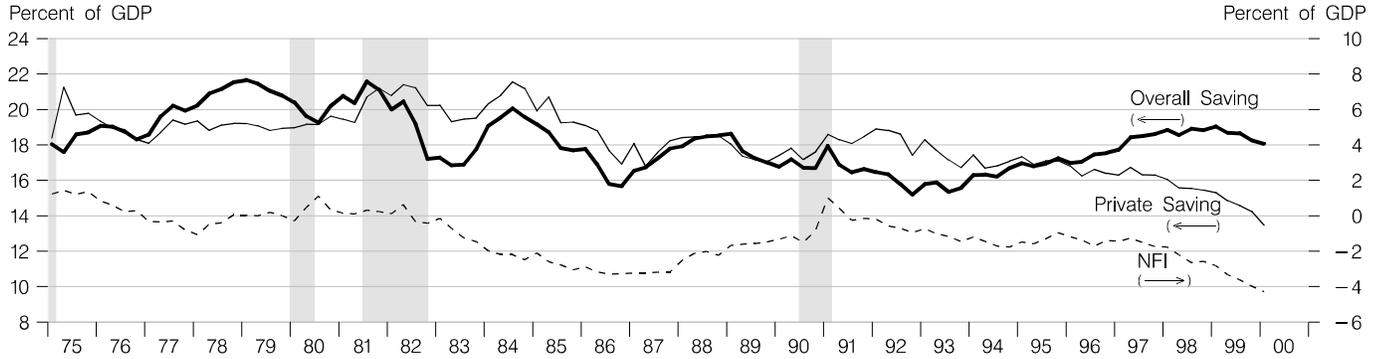


Real Residential Fixed Investment

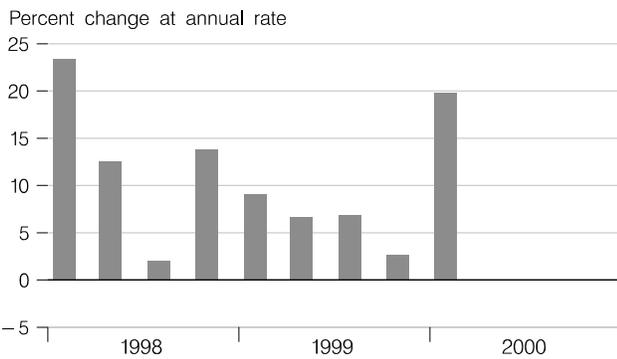
Percent change from year ago



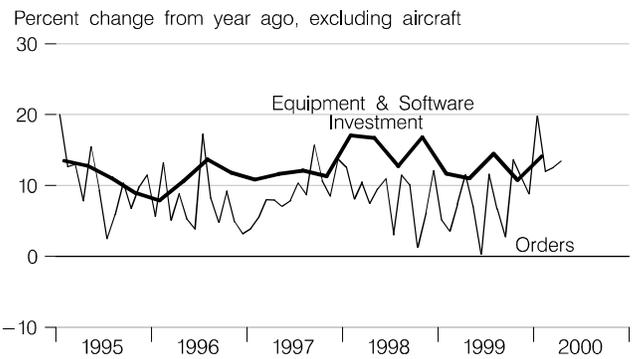
Gross Saving Rates and Net Foreign Investment



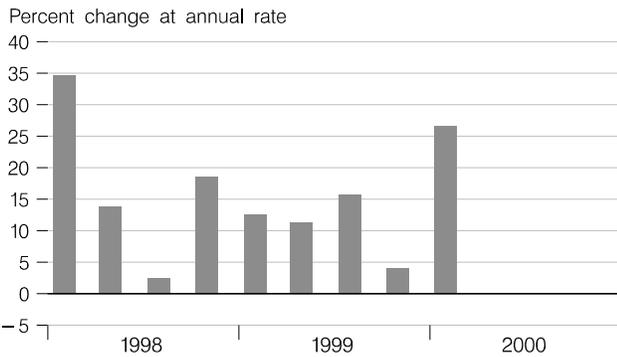
Real Private Fixed Investment



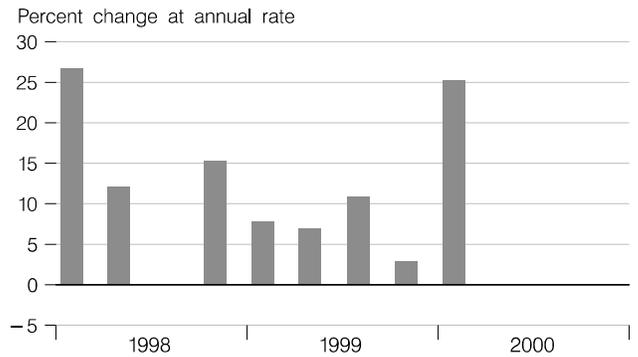
Nondefense Capital Goods Orders



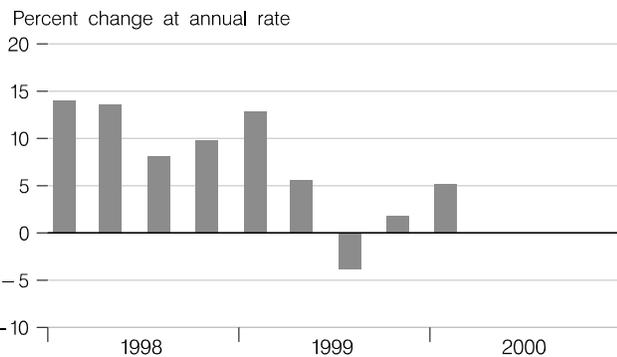
Real Equipment & Software Investment



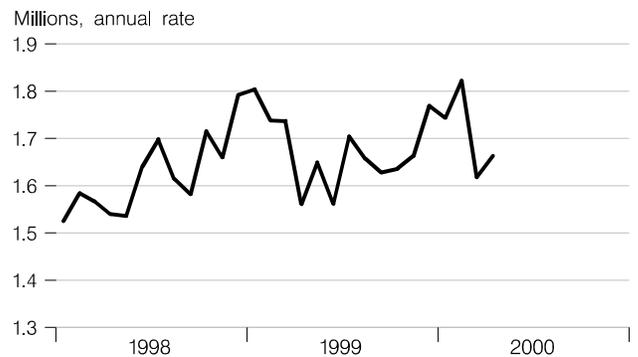
Real Nonresidential Fixed Investment



Real Residential Fixed Investment

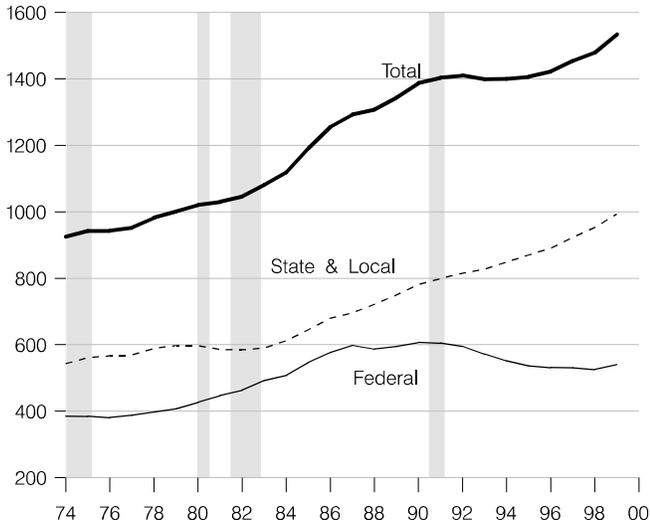


Housing Starts



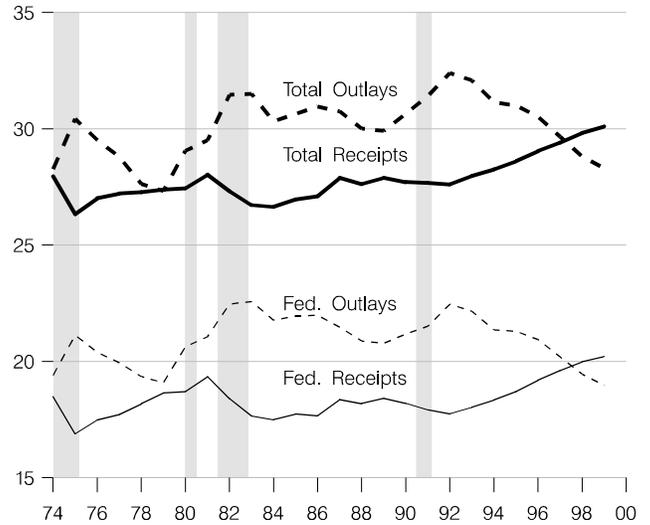
Govt. Consumption and Investment

Billions of 1996 dollars



Government Receipts and Outlays

Percent of GDP



Government Budgets

Billions of dollars

National Income Accounts

Calendar Years

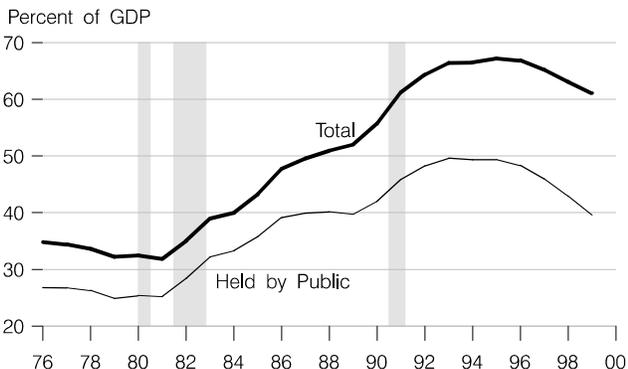
	State and Local			Federal		
	Receipts	Expenditures	Surplus or Deficit(-)	Receipts	Expenditures	Surplus or Deficit(-)
1975	199.6	197.2	2.4	276.1	345.4	-69.3
1976	224.5	217.2	7.3	318.9	371.9	-53.0
1977	249.5	236.4	13.1	359.9	405.0	-45.1
1978	274.3	255.6	18.7	417.3	444.2	-26.9
1979	290.8	277.8	13.0	478.3	489.6	-11.3
1980	316.6	307.8	8.8	522.8	576.6	-53.8
1981	344.4	336.9	7.5	605.6	659.3	-53.7
1982	360.3	362.5	-2.2	599.5	732.1	-132.6
1983	392.1	387.3	4.8	623.9	797.8	-173.9
1984	436.4	412.6	23.8	688.1	856.1	-168.0
1985	469.2	447.0	22.2	747.4	924.6	-177.2
1986	507.9	487.2	20.7	786.4	978.5	-192.1
1987	536.0	523.8	12.2	870.5	1018.4	-147.9
1988	573.7	558.1	15.6	928.9	1066.2	-137.3
1989	618.9	599.6	19.3	1010.3	1140.3	-130.0
1990	663.4	660.8	2.6	1055.7	1228.7	-173.0
1991	716.0	723.8	-7.8	1072.3	1287.6	-215.3
1992	772.2	777.2	-5.0	1121.3	1418.9	-297.6
1993	823.2	821.7	1.5	1197.3	1471.5	-274.2
1994	873.8	865.2	8.6	1293.7	1506.0	-212.3
1995	917.9	902.5	15.4	1383.7	1575.7	-192.0
1996	960.4	939.0	21.4	1499.1	1635.9	-136.8
1997	1009.0	981.5	27.5	1627.2	1676.0	-48.8
1998	1070.4	1028.7	41.7	1750.7	1703.8	46.9
1999	1140.2	1089.2	51.0	1871.3	1755.8	115.5

Unified Budget

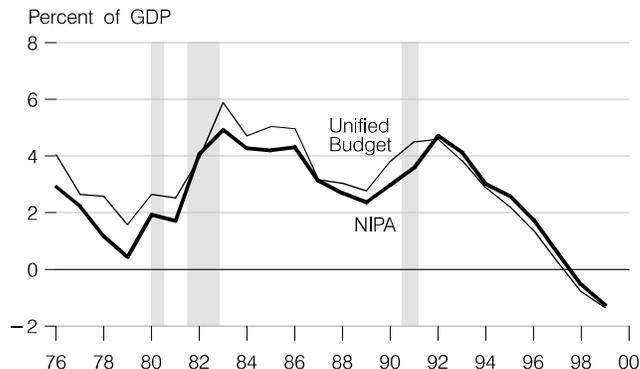
Fiscal Years

	Federal		
	Receipts	Outlays	Surplus or Deficit(-)
1975	279.1	332.3	-53.2
1976	298.1	371.8	-73.7
1977	355.6	409.2	-53.7
1978	399.6	458.7	-59.2
1979	463.3	504.0	-40.7
1980	517.1	590.9	-73.8
1981	599.3	678.2	-79.0
1982	617.8	745.8	-128.0
1983	600.6	808.4	-207.8
1984	666.5	851.9	-185.4
1985	734.1	946.4	-212.3
1986	769.2	990.5	-221.2
1987	854.4	1004.1	-149.8
1988	909.3	1064.5	-155.2
1989	991.2	1143.7	-152.5
1990	1032.0	1253.2	-221.2
1991	1055.0	1324.4	-269.4
1992	1091.3	1381.7	-290.4
1993	1154.4	1409.5	-255.1
1994	1258.6	1461.9	-203.3
1995	1351.8	1515.8	-164.0
1996	1453.1	1560.6	-107.5
1997	1579.3	1601.3	-22.0
1998	1721.8	1652.6	69.2
1999	1827.5	1703.0	124.4

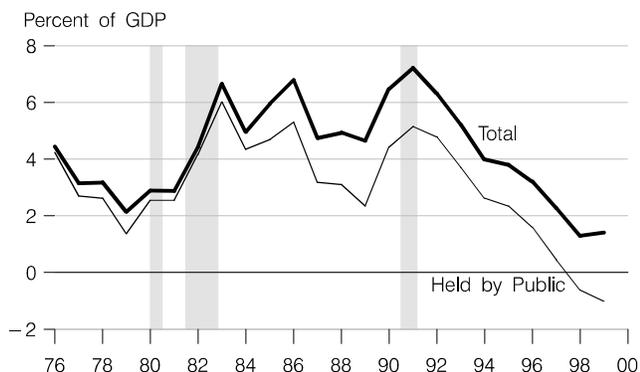
Federal Debt



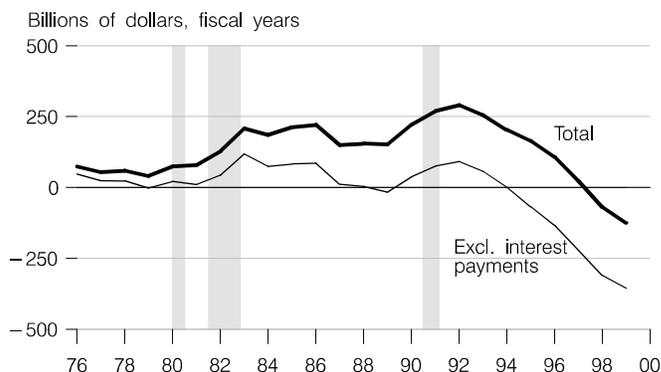
Federal Deficit



Change in Federal Debt



Federal Deficit, Unified Basis

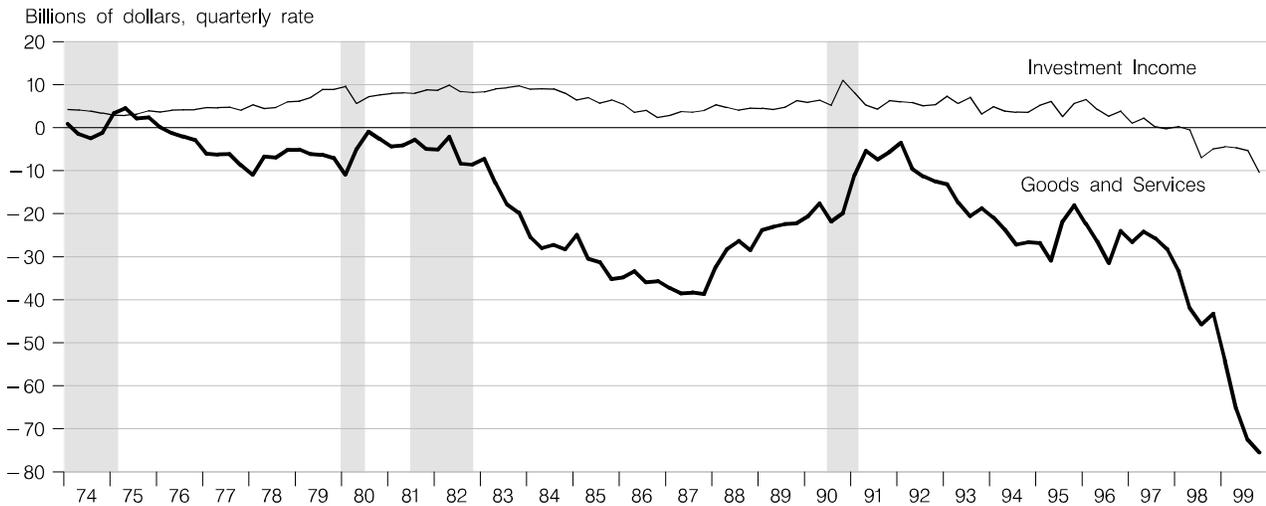


Federal Government Debt

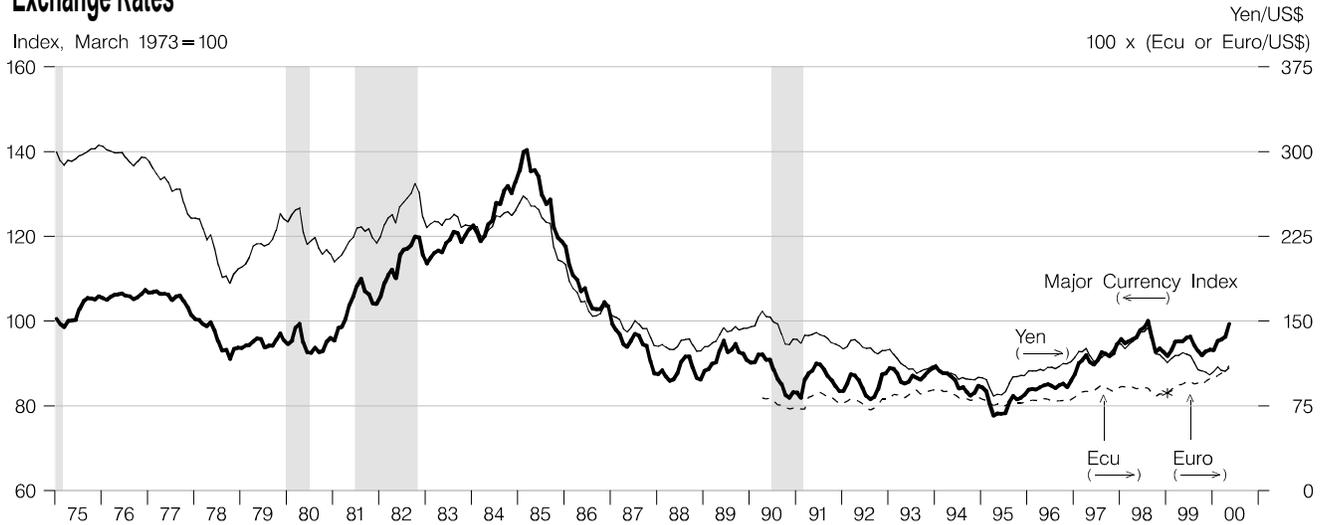
Billions of dollars, end of month or fiscal year, excluding agency-issued debt

		Total Public Debt	Held by Agencies and Trusts	Held by Public		Held by Private Investors	
				Total	Federal Reserve Banks	Total	Foreign and International
1997		5413.1	1598.5	3814.7	436.5	3401.6	1230.5
1998		5526.2	1765.6	3760.6	458.1	3313.2	1224.2
1999		5656.3	1989.1	3667.2	496.5	3175.6	1281.3
1996	March	5117.8	1353.8	3764.0	381.0	3386.7	908.1
	June	5161.1	1422.4	3738.6	391.0	3354.4	929.7
	September	5224.8	1447.0	3777.8	390.9	3393.2	993.4
	December	5323.2	1497.2	3826.0	410.9	3431.2	1102.1
1997	March	5380.9	1506.8	3874.1	405.6	3452.2	1157.6
	June	5376.2	1571.6	3804.6	426.4	3377.3	1182.7
	September	5413.1	1598.5	3814.7	436.5	3401.6	1230.5
	December	5502.4	1655.7	3846.7	451.9	3414.6	1241.6
1998	March	5542.4	1670.4	3872.1	400.0	3437.5	1250.5
	June	5547.9	1757.6	3790.4	458.4	3349.3	1256.0
	September	5526.2	1765.6	3760.6	458.1	3313.2	1224.2
	December	5614.2	1826.8	3787.4	471.7	3334.0	1278.7
1999	March	5651.6	1857.1	3794.5	464.5	3327.6	1272.1
	June	5638.8	1953.6	3685.2	493.8	3199.3	1258.6
	September	5656.3	1989.1	3667.2	496.5	3175.6	1281.3
	December	5776.1	2060.6	3715.5	477.7	3234.2	1268.7

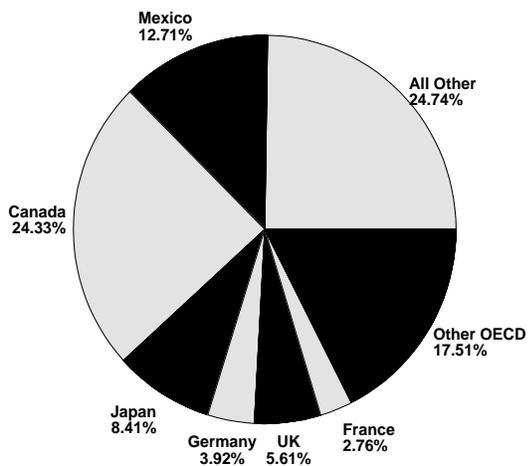
Trade and Investment Income Balances



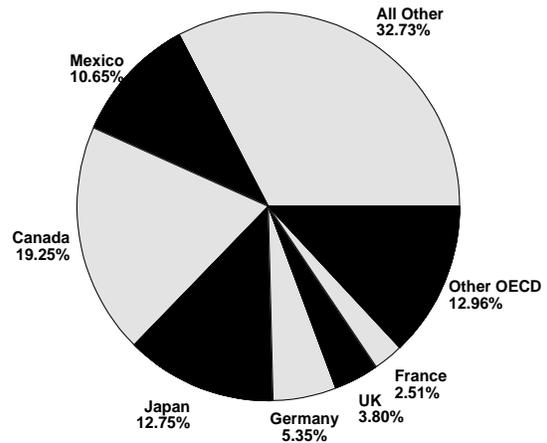
Exchange Rates



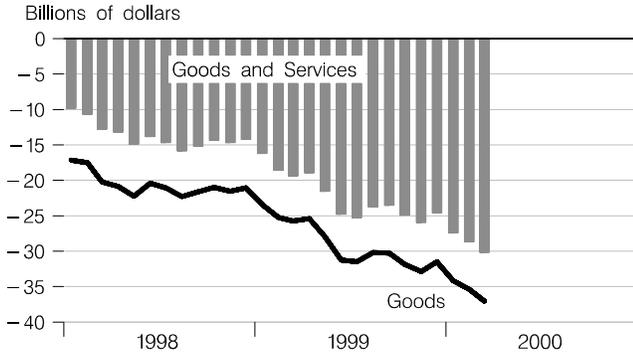
Goods Export Shares, 1999



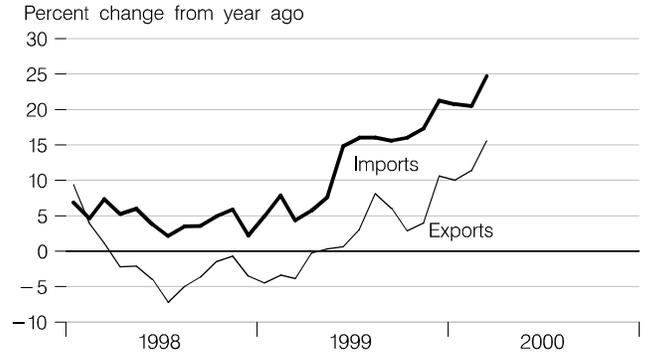
Goods Import Shares, 1999



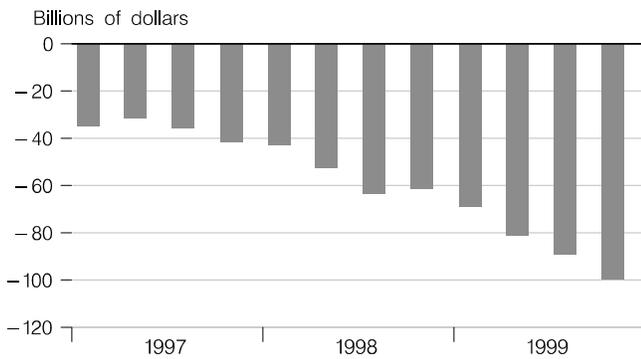
Trade Balance



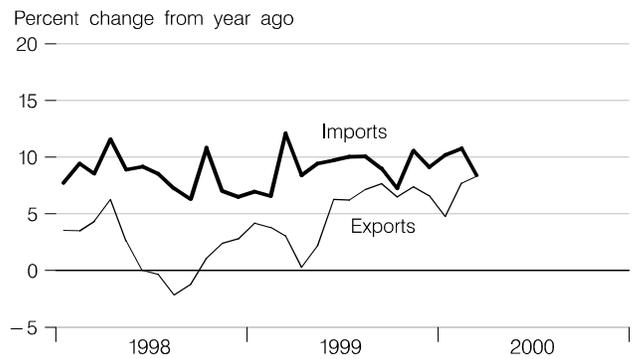
Goods Trade



Current Account Balance



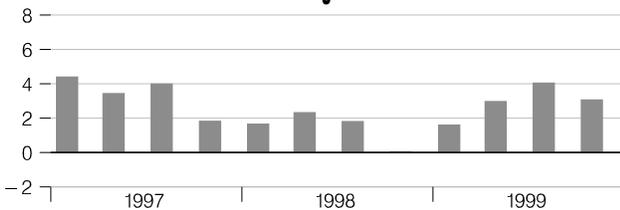
Services Trade



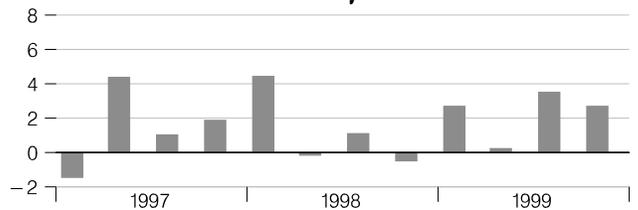
Real GDP Growth of Major Trading Partners

Percent change at annual rate

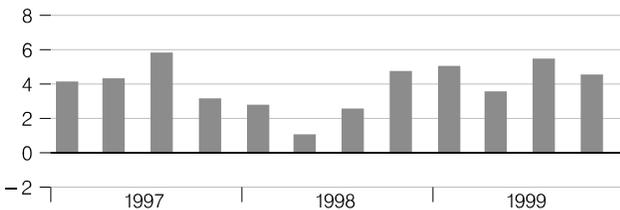
United Kingdom



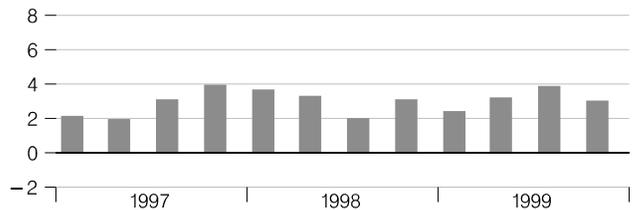
Germany



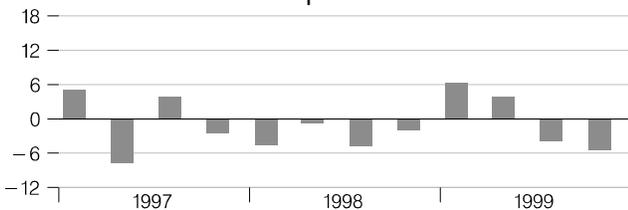
Canada



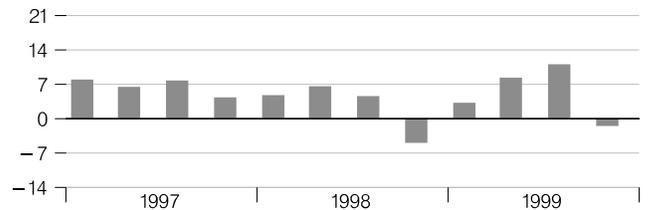
France



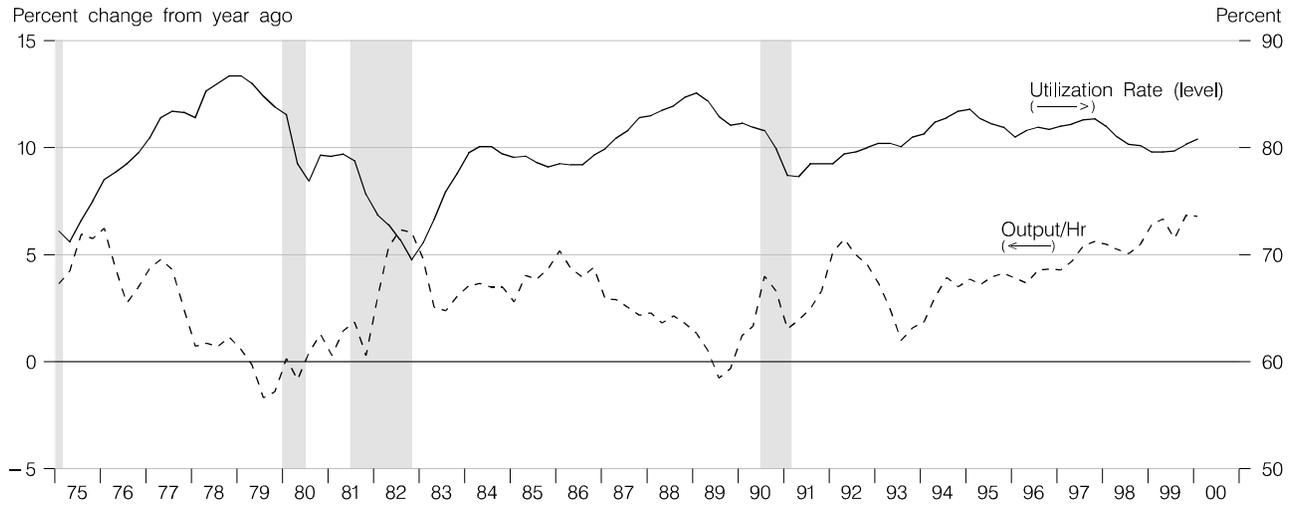
Japan



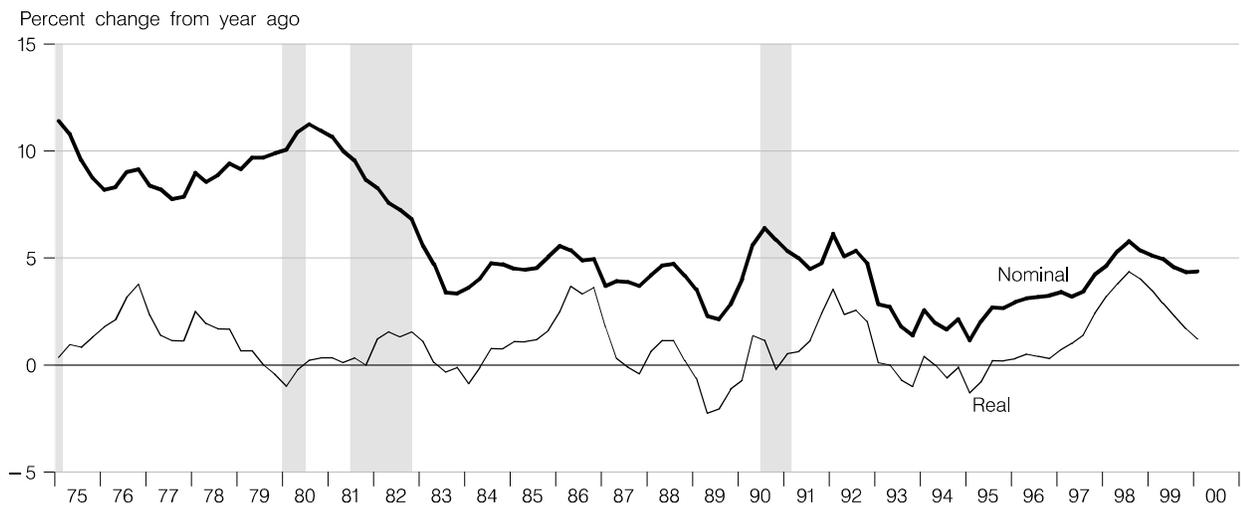
Mexico



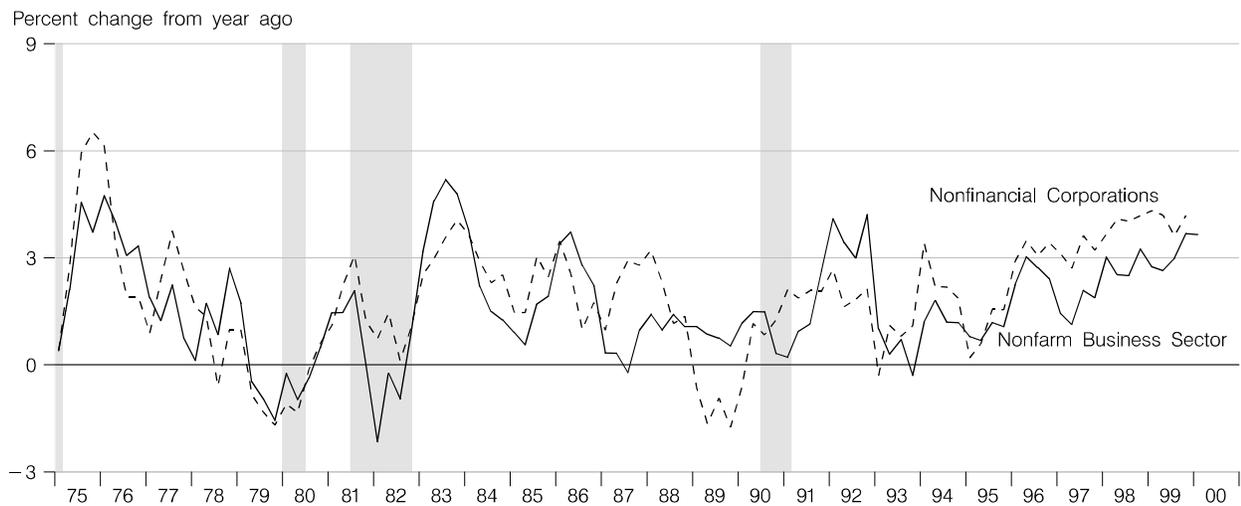
Output per Hour and Capacity Utilization, Manufacturing



Nonfarm Compensation per Hour

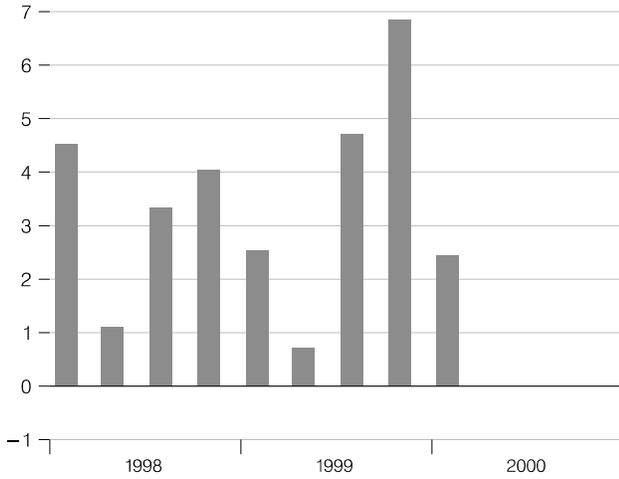


Output per Hour, Nonfarm Business and Nonfarm, Nonfinancial Corporations



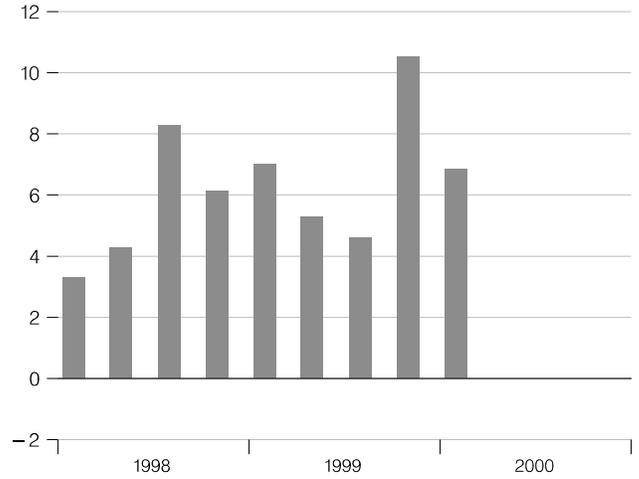
Nonfarm Output per Hour

Percent change at annual rate



Manufacturing Output per Hour

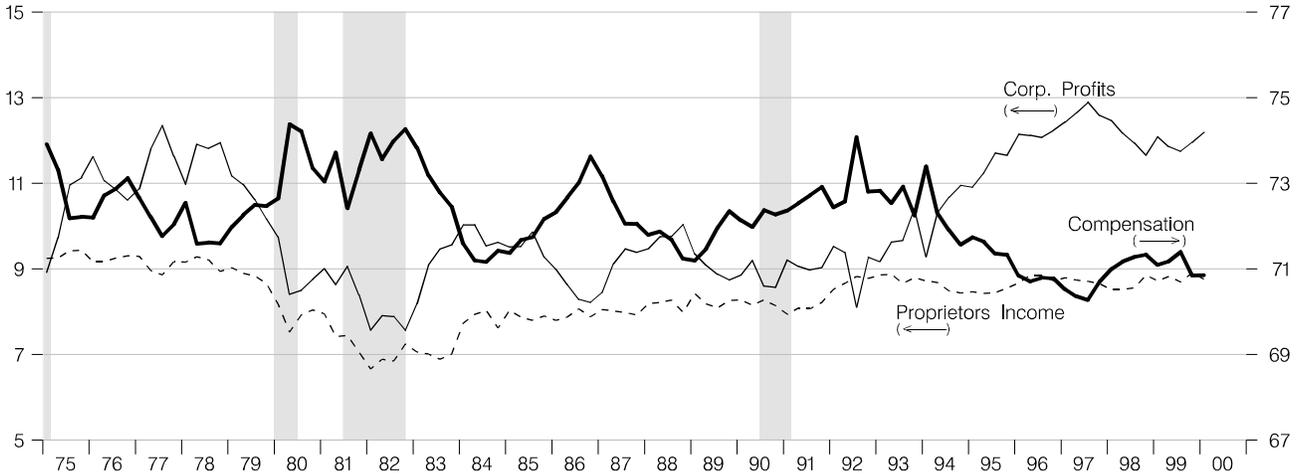
Percent change at annual rate



Selected Component Shares of National Income

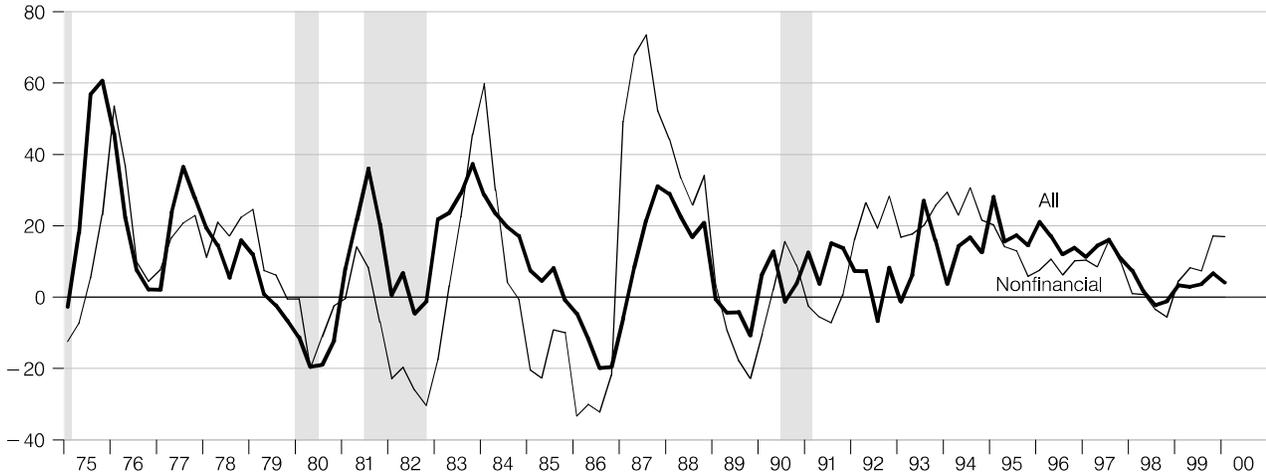
Percent

Percent



Corporate Profits after Tax (with IVA and CCAdj)

Percent change from year ago



	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
1996	7813.2		5.6	7813.170		3.6	7783.176		3.6		29.994
1997	8300.8		6.2	8144.839		4.2	8075.512		3.8		69.122
1998	8759.9		5.5	8495.650		4.3	8420.774		4.3		74.290
1999	9256.1		5.7	8848.220		4.2	8800.515		4.5		42.205
1997 1	8125.9	7.4	6.5	8018.735	4.5	4.5	7966.392	3.5	3.9	51.465	41.465
2	8259.5	6.7	6.1	8115.383	4.9	4.0	8022.664	2.9	3.2	93.108	57.175
3	8364.5	5.2	6.4	8192.187	3.8	4.5	8132.641	5.6	4.4	59.187	59.161
4	8453.0	4.3	5.9	8253.208	3.0	4.1	8180.274	2.4	3.6	72.729	69.122
1998 1	8610.6	7.7	6.0	8391.110	6.9	4.6	8285.502	5.2	4.0	107.278	83.076
2	8683.7	3.4	5.1	8436.348	2.2	4.0	8389.485	5.1	4.6	43.107	70.575
3	8797.9	5.4	5.2	8515.730	3.8	3.9	8439.376	2.4	3.8	76.114	74.807
4	8947.6	7.0	5.9	8639.491	5.9	4.7	8568.654	6.3	4.7	70.658	74.289
1999 1	9072.7	5.7	5.4	8717.623	3.7	3.9	8665.010	4.6	4.6	50.134	60.003
2	9146.2	3.3	5.3	8758.251	1.9	3.8	8737.471	3.4	4.1	14.001	52.727
3	9297.8	6.8	5.7	8879.824	5.7	4.3	8834.994	4.5	4.7	37.969	43.191
4	9507.9	9.3	6.3	9037.181	7.3	4.6	8964.584	6.0	4.6	66.716	42.205
2000 1	9697.6	8.2	6.9	9156.723	5.4	5.0	9116.278	6.9	5.2	30.546	37.308

	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
1996	5237.499		3.2	616.475		5.6	1212.696		9.3	899.433		10.0
1997	5417.250		3.4	657.372		6.6	1316.018		8.5	995.717		10.7
1998	5681.848		4.9	731.503		11.3	1471.849		11.8	1122.465		12.7
1999	5983.581		5.3	815.704		11.5	1590.484		8.1	1215.764		8.3
1997 1	5349.162	4.4	3.4	642.077	10.9	6.7	1274.143	7.9	9.3	957.923	9.6	11.2
2	5369.327	1.5	2.7	639.673	-1.5	3.1	1300.641	8.6	8.1	980.832	9.9	10.8
3	5453.127	6.4	3.8	669.745	20.2	8.4	1337.931	12.0	8.6	1017.978	16.0	11.3
4	5497.279	3.3	3.9	677.981	5.0	8.4	1351.344	4.1	8.1	1026.127	3.2	9.6
1998 1	5575.108	5.8	4.2	704.908	16.9	9.8	1424.202	23.4	11.8	1088.575	26.7	13.6
2	5658.803	6.1	5.4	723.883	11.2	13.2	1466.695	12.5	12.8	1120.181	12.1	14.2
3	5714.216	4.0	4.8	731.232	4.1	9.2	1473.996	2.0	10.2	1120.316	0.0	10.1
4	5779.318	4.6	5.1	766.001	20.4	13.0	1522.491	13.8	12.7	1160.799	15.3	13.1
1999 1	5871.289	6.5	5.3	788.780	12.4	11.9	1555.853	9.1	9.2	1182.664	7.8	8.6
2	5944.457	5.1	5.0	806.084	9.1	11.4	1580.980	6.6	7.8	1202.875	7.0	7.4
3	6015.687	4.9	5.3	821.225	7.7	12.3	1607.319	6.8	9.0	1234.274	10.9	10.2
4	6102.891	5.9	5.6	846.728	13.0	10.5	1617.785	2.6	6.3	1243.241	2.9	7.1
2000 1	6214.345	7.5	5.8	890.597	22.4	12.9	1692.475	19.8	8.8	1315.205	25.2	11.2

	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
1996	100.000		1.9	129.3		2.8	126.0		3.3	137.4		1.8
1997	101.910		1.9	133.3		3.1	130.4		3.5	140.2		2.0
1998	103.110		1.2	138.0		3.5	135.7		4.0	143.6		2.5
1999	104.550		1.4	142.4		3.2	140.2		3.4	147.6		2.8
1997 1	101.330	2.8	1.9	131.6	3.1	2.9	128.5	3.5	3.3	138.9	1.2	2.0
2	101.770	1.7	2.0	132.7	3.4	2.9	129.7	3.8	3.3	139.7	2.3	2.0
3	102.110	1.3	1.9	133.7	3.0	3.0	131.0	4.1	3.6	140.4	2.0	2.0
4	102.440	1.3	1.8	135.1	4.3	3.4	132.4	4.3	3.9	141.6	3.5	2.2
1998 1	102.680	0.9	1.3	136.2	3.3	3.5	133.7	4.0	4.0	142.2	1.7	2.4
2	102.960	1.1	1.2	137.3	3.3	3.5	134.9	3.6	4.0	143.2	2.8	2.5
3	103.300	1.3	1.2	138.8	4.4	3.8	136.5	4.8	4.2	144.1	2.5	2.6
4	103.510	0.8	1.0	139.7	2.6	3.4	137.5	3.0	3.9	144.9	2.2	2.3
1999 1	104.030	2.0	1.3	140.3	1.7	3.0	138.1	1.8	3.3	145.4	1.4	2.3
2	104.370	1.3	1.4	141.8	4.3	3.3	139.7	4.7	3.6	146.8	3.9	2.5
3	104.650	1.1	1.3	143.1	3.7	3.1	140.9	3.5	3.2	148.2	3.9	2.8
4	105.160	2.0	1.6	144.5	4.0	3.4	142.2	3.7	3.4	149.9	4.7	3.5
2000 1	105.860	2.7	1.8	146.6	5.9	4.5	143.9	4.9	4.2	153.4	9.7	5.5

	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation/Hr		
	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
1996	874.163		8.2	963.128		8.6	105.4		2.6	109.8		3.1
1997	983.075		12.5	1095.221		13.7	107.1		1.6	113.8		3.6
1998	1004.579		2.2	1222.152		11.6	110.1		2.8	119.8		5.3
1999	1042.345		3.8	1365.390		11.7	113.5		3.1	125.4		4.7
1997 1	942.103	8.3	11.3	1034.679	15.5	12.3	106.0	0.0	1.4	112.1	3.3	3.4
2	977.594	15.9	13.7	1080.813	19.1	13.7	106.8	3.1	1.1	112.9	2.9	3.2
3	1004.186	11.3	15.8	1125.502	17.6	14.5	107.7	3.4	2.1	114.1	4.3	3.4
4	1008.399	1.7	9.2	1139.901	5.2	14.2	108.0	1.1	1.9	115.9	6.5	4.2
1998 1	1004.492	-1.5	6.6	1178.984	14.4	13.9	109.2	4.5	3.0	117.3	4.9	4.6
2	994.518	-3.9	1.7	1215.554	13.0	12.5	109.5	1.1	2.5	118.9	5.6	5.3
3	990.628	-1.6	-1.4	1230.974	5.2	9.4	110.4	3.3	2.5	120.7	6.2	5.8
4	1028.671	16.3	2.0	1263.085	10.8	10.8	111.5	4.0	3.2	122.1	4.7	5.3
1999 1	1014.300	-5.5	1.0	1300.887	12.5	10.3	112.2	2.5	2.7	123.3	4.0	5.1
2	1024.292	4.0	3.0	1345.384	14.4	10.7	112.4	0.7	2.6	124.8	5.0	5.0
3	1052.623	11.5	6.3	1392.982	14.9	13.2	113.7	4.7	3.0	126.2	4.6	4.6
4	1078.166	10.1	4.8	1422.309	8.7	12.6	115.6	6.9	3.7	127.4	3.9	4.3
2000 1	1092.573	5.5	7.7	1465.486	12.7	12.7	116.3	2.4	3.7	128.7	4.1	4.4

	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	
1995	124908	1837		1.5	117189	3054		2.7	133.4			2.7	
1996	126715	1807		1.4	119594	2405		2.1	136.6			2.4	
1997	129565	2850		2.2	122673	3079		2.6	141.4			3.5	
1998	131463	1898		1.5	125803	3130		2.6	145.1			2.6	
1999	133492	2030		1.5	128607	2805		2.2	147.9			1.9	
1998	1	130861	413	1.3	1.8	124771	825	2.7	2.7	144.2	0.7	3.0	3.3
	2	131256	394	1.2	1.5	125462	691	2.2	2.6	144.7	0.3	1.3	2.7
	3	131526	270	0.8	1.2	126113	651	2.1	2.5	145.3	0.4	1.6	2.4
	4	132208	682	2.1	1.3	126865	752	2.4	2.4	146.2	0.7	2.7	2.1
1999	1	133077	869	2.7	1.7	127640	776	2.5	2.3	147.0	0.5	2.0	1.9
	2	133214	137	0.4	1.5	128246	606	1.9	2.2	147.3	0.2	1.0	1.8
	3	133526	312	0.9	1.5	128936	690	2.2	2.2	148.3	0.7	2.7	2.1
	4	134153	626	1.9	1.5	129606	670	2.1	2.2	149.1	0.6	2.3	2.0
2000	1	135247	1095	3.3	1.6	130463	856	2.7	2.2	150.4	0.8	3.3	2.3
1998	Apr	131255	401	3.7	1.6	125220	259	2.5	2.6	144.3	0.1	1.7	2.6
	May	131278	23	0.2	1.5	125478	258	2.5	2.6	145.0	0.5	6.0	2.7
	Jun	131234	-44	-0.4	1.4	125689	211	2.0	2.6	144.8	-0.1	-1.6	2.8
	Jul	131274	40	0.4	1.1	125808	119	1.1	2.4	145.2	0.3	3.4	2.7
	Aug	131381	107	1.0	1.1	126170	362	3.5	2.7	145.5	0.2	2.5	2.5
	Sep	131922	541	5.1	1.5	126361	191	1.8	2.5	145.1	-0.3	-3.2	1.9
	Oct	131950	28	0.3	1.4	126567	206	2.0	2.4	146.0	0.6	7.7	2.3
	Nov	132156	206	1.9	1.2	126841	274	2.6	2.3	146.1	0.1	0.8	2.0
	Dec	132517	361	3.3	1.4	127186	345	3.3	2.4	146.6	0.3	4.2	2.2
1999	Jan	133225	708	6.6	1.8	127378	192	1.8	2.2	146.8	0.1	1.6	1.7
	Feb	133029	-196	-1.8	1.6	127730	352	3.4	2.4	147.3	0.3	4.2	2.1
	Mar	132976	-53	-0.5	1.6	127813	83	0.8	2.3	146.8	-0.3	-4.0	1.9
	Apr	133054	78	0.7	1.4	128134	321	3.1	2.3	147.0	0.1	1.6	1.9
	May	133190	136	1.2	1.5	128162	28	0.3	2.1	147.2	0.1	1.6	1.5
	Jun	133398	208	1.9	1.6	128443	281	2.7	2.2	147.8	0.4	5.0	2.1
	Jul	133399	1	0.0	1.6	128816	373	3.5	2.4	148.3	0.3	4.1	2.1
	Aug	133530	131	1.2	1.6	128945	129	1.2	2.2	148.4	0.1	0.8	2.0
	Sep	133650	120	1.1	1.3	129048	103	1.0	2.1	148.2	-0.1	-1.6	2.1
	Oct	133940	290	2.6	1.5	129332	284	2.7	2.2	148.8	0.4	5.0	1.9
	Nov	134098	158	1.4	1.5	129589	257	2.4	2.2	149.2	0.3	3.3	2.1
	Dec	134420	322	2.9	1.4	129898	309	2.9	2.1	149.4	0.1	1.6	1.9
2000	Jan	135221	801	7.4	1.5	130292	394	3.7	2.3	150.3	0.6	7.5	2.4
	Feb	135362	141	1.3	1.8	130319	27	0.2	2.0	150.1	-0.1	-1.6	1.9
	Mar	135159	-203	-1.8	1.6	130777	458	4.3	2.3	150.7	0.4	4.9	2.7
	Apr	135706	547	5.0	2.0	131117	340	3.2	2.3	151.5	0.5	6.6	3.1

	Unempl. Rate	Retail Sales				Industrial Production				Treasury Yields		
		Billions of dollars	Percent change			Index	Percent change			3-mo	10-yr	
			Monthly/ quarterly	Annual rate	Year ago		Monthly/ quarterly	Annual rate	Year ago			
1995	5.6	2361.343			5.1	114.418			4.9	5.49	6.58	
1996	5.4	2496.503			5.7	119.445			4.4	5.01	6.44	
1997	4.9	2612.931			4.7	126.953			6.3	5.06	6.35	
1998	4.5	2745.714			5.1	132.365			4.3	4.78	5.26	
1999	4.2	2992.367			9.0	136.980			3.5	4.64	5.64	
1998	1	4.7	668.657	0.9	3.8	3.4	130.897	0.6	2.4	5.7	5.05	5.59
	2	4.4	684.020	2.3	9.5	6.1	131.856	0.7	3.0	4.8	4.98	5.60
	3	4.5	686.919	0.4	1.7	4.2	132.811	0.7	2.9	3.8	4.82	5.20
	4	4.4	706.118	2.8	11.7	6.6	133.895	0.8	3.3	2.9	4.26	4.67
1999	1	4.3	723.050	2.4	9.9	8.1	134.569	0.5	2.0	2.8	4.41	4.98
	2	4.3	738.647	2.2	8.9	8.0	136.109	1.1	4.7	3.2	4.45	5.54
	3	4.2	756.594	2.4	10.1	10.1	137.721	1.2	4.8	3.7	4.65	5.88
	4	4.1	774.076	2.3	9.6	9.6	139.521	1.3	5.3	4.2	5.04	6.14
2000	1	4.1	799.207	3.2	13.6	10.5	141.630	1.5	6.2	5.2	5.52	6.48
1998	May	4.4	227.791	0.7	8.9	7.1	132.434	0.6	7.3	5.3	5.00	5.65
	Jun	4.5	230.046	1.0	12.5	6.4	131.481	-0.7	-8.3	3.9	4.98	5.50
	Jul	4.5	228.231	-0.8	-9.1	4.3	131.291	-0.1	-1.7	3.2	4.96	5.46
	Aug	4.5	228.078	-0.1	-0.8	3.6	133.593	1.8	23.2	4.4	4.90	5.34
	Sep	4.5	230.610	1.1	14.2	4.7	133.548	-0.0	-0.4	3.7	4.61	4.81
	Oct	4.5	233.751	1.4	17.6	6.3	134.108	0.4	5.1	3.5	3.96	4.53
	Nov	4.4	235.251	0.6	8.0	6.5	133.777	-0.2	-2.9	2.8	4.42	4.83
	Dec	4.4	237.116	0.8	9.9	6.9	133.801	0.0	0.2	2.5	4.39	4.64
1999	Jan	4.3	239.154	0.9	10.8	7.7	134.052	0.2	2.3	2.4	4.34	4.72
	Feb	4.4	241.580	1.0	12.9	8.5	134.509	0.3	4.2	2.9	4.44	5.00
	Mar	4.2	242.316	0.3	3.7	8.2	135.147	0.5	5.8	3.1	4.44	5.23
	Apr	4.3	244.351	0.8	10.6	8.0	135.472	0.2	2.9	2.9	4.29	5.18
	May	4.2	246.991	1.1	13.8	8.4	136.215	0.5	6.8	2.9	4.50	5.54
	Jun	4.3	247.305	0.1	1.5	7.5	136.639	0.3	3.8	3.9	4.57	5.90
	Jul	4.3	249.816	1.0	12.9	9.5	137.363	0.5	6.5	4.6	4.55	5.79
	Aug	4.2	253.030	1.3	16.6	10.9	137.736	0.3	3.3	3.1	4.72	5.94
	Sep	4.2	253.748	0.3	3.5	10.0	138.064	0.2	2.9	3.4	4.68	5.92
	Oct	4.1	254.959	0.5	5.9	9.1	139.056	0.7	9.0	3.7	4.86	6.11
	Nov	4.1	257.489	1.0	12.6	9.5	139.433	0.3	3.3	4.2	5.07	6.03
	Dec	4.1	261.628	1.6	21.1	10.3	140.075	0.5	5.7	4.7	5.20	6.28
2000	Jan	4.0	263.493	0.7	8.9	10.2	141.117	0.7	9.3	5.3	5.32	6.66
	Feb	4.1	267.164	1.4	18.1	10.6	141.366	0.2	2.1	5.1	5.55	6.52
	Mar	4.1	268.550	0.5	6.4	10.8	142.408	0.7	9.2	5.4	5.69	6.26
	Apr	3.9	268.065	-0.2	-2.1	9.7	143.683	0.9	11.3	6.1	5.66	5.99
	May										5.79	6.44

		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
1995		152.5			2.8		161.4			3.0		127.9			1.9
1996		157.0			2.9		165.8			2.7		131.3			2.6
1997		160.6			2.3		169.7			2.4		131.8			0.4
1998		163.1			1.6		173.7			2.3		130.7			-0.9
1999		166.7			2.2		177.3			2.1		133.0			1.8
1998	1	162.1	0.2	1.0	1.5	1.0	172.2	0.7	2.7	2.3	2.7	130.6	-0.8	-3.0	-1.6
	2	162.8	0.4	1.7	1.6	1.3	173.2	0.6	2.5	2.2	2.6	130.5	-0.0	-0.1	-0.7
	3	163.5	0.4	1.7	1.6	1.5	174.2	0.5	2.2	2.4	2.5	130.6	0.1	0.2	-0.6
	4	164.2	0.4	1.7	1.5	1.5	175.1	0.5	2.1	2.4	2.4	131.0	0.3	1.1	-0.5
1999	1	164.9	0.4	1.7	1.7	1.7	175.9	0.5	1.9	2.2	1.9	131.4	0.4	1.4	0.7
	2	166.2	0.8	3.3	2.1	2.5	176.8	0.5	2.1	2.1	2.0	132.3	0.7	2.7	1.4
	3	167.2	0.6	2.5	2.3	2.5	177.7	0.5	1.9	2.0	2.0	133.6	1.0	4.0	2.3
	4	168.4	0.7	2.9	2.6	2.6	178.7	0.6	2.3	2.1	2.1	134.7	0.8	3.4	2.9
2000	1	170.1	1.0	4.0	3.2	4.0	179.7	0.6	2.3	2.1	2.3	136.4	1.2	4.9	3.8
1998	Apr	162.5	0.2	2.2	1.5	1.3	172.9	0.2	2.8	2.2	2.8	130.6	0.0	0.0	-0.9
	May	162.8	0.2	2.2	1.7	1.5	173.3	0.2	2.8	2.2	2.8	130.5	-0.1	-0.9	-0.7
	Jun	163.0	0.1	1.5	1.6	1.5	173.5	0.1	1.4	2.3	2.6	130.5	0.0	0.0	-0.6
	Jul	163.3	0.2	2.2	1.7	1.6	173.8	0.2	2.1	2.2	2.5	130.8	0.2	2.8	-0.2
	Aug	163.5	0.1	1.5	1.7	1.6	174.2	0.2	2.8	2.5	2.6	130.4	-0.3	-3.6	-0.8
	Sep	163.6	0.1	0.7	1.4	1.5	174.5	0.2	2.1	2.4	2.5	130.6	0.2	1.9	-0.9
	Oct	163.9	0.2	2.2	1.4	1.6	174.7	0.1	1.4	2.3	2.4	131.0	0.3	3.7	-0.7
	Nov	164.2	0.2	2.2	1.5	1.6	175.0	0.2	2.1	2.3	2.4	130.8	-0.2	-1.8	-0.6
	Dec	164.4	0.1	1.5	1.6	1.6	175.5	0.3	3.5	2.5	2.5	131.1	0.2	2.8	-0.1
1999	Jan	164.7	0.2	2.2	1.7	2.2	175.8	0.2	2.1	2.3	2.1	131.6	0.4	4.7	0.8
	Feb	164.8	0.1	0.7	1.7	1.5	175.8	0.0	0.0	2.1	1.0	131.1	-0.4	-4.5	0.5
	Mar	165.1	0.2	2.2	1.8	1.7	176.1	0.2	2.1	2.1	1.4	131.6	0.4	4.7	0.8
	Apr	166.2	0.7	8.3	2.3	3.3	176.7	0.3	4.2	2.2	2.1	132.2	0.5	5.6	1.2
	May	166.2	0.0	0.0	2.1	2.6	176.8	0.1	0.7	2.0	1.8	132.3	0.1	0.9	1.4
	Jun	166.2	0.0	0.0	2.0	2.2	177.0	0.1	1.4	2.0	1.7	132.4	0.1	0.9	1.5
	Jul	166.7	0.3	3.7	2.1	2.4	177.4	0.2	2.7	2.1	1.9	132.7	0.2	2.8	1.5
	Aug	167.2	0.3	3.7	2.3	2.6	177.5	0.1	0.7	1.9	1.7	133.5	0.6	7.5	2.4
	Sep	167.8	0.4	4.4	2.6	2.8	178.1	0.3	4.1	2.1	2.0	134.6	0.8	10.3	3.1
	Oct	168.1	0.2	2.2	2.6	2.7	178.4	0.2	2.0	2.1	2.0	134.6	0.0	0.0	2.7
	Nov	168.4	0.2	2.2	2.6	2.7	178.7	0.2	2.0	2.1	2.0	134.7	0.1	0.9	3.0
	Dec	168.8	0.2	2.9	2.7	2.7	178.9	0.1	1.4	1.9	1.9	134.9	0.1	1.8	2.9
2000	Jan	169.1	0.2	2.2	2.7	2.2	179.2	0.2	2.0	1.9	2.0	135.0	0.1	0.9	2.6
	Feb	170.0	0.5	6.6	3.2	4.3	179.5	0.2	2.0	2.1	2.0	136.4	1.0	13.2	4.0
	Mar	171.2	0.7	8.8	3.7	5.8	180.3	0.4	5.5	2.4	3.2	137.7	1.0	12.1	4.6
	Apr	171.2	0.0	0.0	3.0	4.3	180.6	0.2	2.0	2.2	2.9	137.3	-0.3	-3.4	3.9

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 **Purchasing Managers' Index** is a weighted average of diffusion indexes for new orders, production, supplier deliveries, inventories, and employment. The National Association of Purchasing Management (NAPM) surveys over 300 firms in 20 manufacturing industries, weighting responses by industry share of GDP. **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: Beginning with the October 1999 **comprehensive revision** to the National Income and Product Accounts (NIPA), a new formula is used to calculate the **contribution** of a component to the overall GDP growth rate. The new formula produces estimates roughly equivalent to the old formula. For more information, 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, but all rates used in the yield curves are adjusted to constant maturity. **Standard and Poor's 500 Index with Reinvested Dividends** shows the total return: capital gains plus dividends.

Pages 8,9: **Oil prices** are monthly averages of daily spot prices for West Texas intermediate crude (*Wall Street Journal*). **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: **Nonfarm payroll employment** is counted in a survey of about 390,000 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 50,000 households provides estimates of civilian employment, unemployment rate, labor force participation rate, and employment-population ratio. **Population** is civilian, noninstitutional, 16 years and over. New population controls introduced in January 2000 affect levels and growth rates of household survey employment, labor force and population. The unemployment rate and other series were minimally affected. 90 percent confidence intervals for the unemployment rate (± 0.2 percentage points) and change in household survey employment ($\pm 376,000$) measure uncertainty due to sample size. The **available labor supply** is the sum of the unemployed and those persons not in the labor force but who want to work now. The household survey was significantly changed in January 1994, so care should be exercised in making short-term comparisons around this date, particularly with the duration data shown on page 10.

Pages 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 pages 16 and 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 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.

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)