

National Economic Trends



Trading Trade-offs?

It was once popular among economists to say that a nation could accept a higher average rate of inflation in return for faster economic growth and lower unemployment. There was a trade-off: Faster growth was good, but so was lower inflation, and one should not expect both simultaneously. The experience of the industrialized countries in the last three decades has made this trade-off idea much less popular in recent years. However, in its place, some analysts are now discussing a new trade-off—one between the volatility of inflation and the volatility of growth in real gross domestic product (GDP).

The argument runs like this: Suppose the Fed tries to focus very sharply on maintaining a low average rate of inflation, with very little deviation from the target allowed. This might mean the Fed would be very aggressive in reacting to deviations of actual inflation from target, and as a consequence, adjustment to disturbances would occur through changes in real output. Inflation would be close to target most of the time, the thinking goes, but real output growth would be volatile. If on the other hand, the Fed tries to keep real output very close to trend, adjustment to disturbances would occur through changes in the price level. Economic growth would be fairly smooth, but inflation would be volatile. Thus, there might be a trade-off between inflation volatility and output growth volatility.

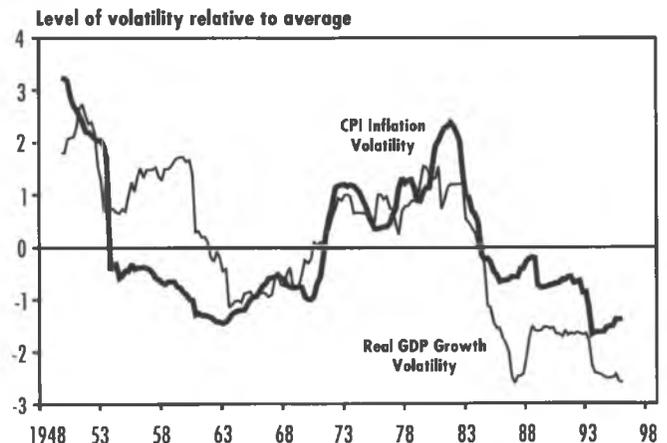
The chart illustrates some of the difficulties with this hypothesis. The thick line is a measure of the volatility of consumer price index (CPI) inflation during the postwar era in the United States, and the thin line is a measure of the volatility of economic growth. Both are scaled so that a reading above zero means “above-average volatility,” and a reading below zero means “below-average volatility.” The most striking feature of the figure is that the volatility of inflation and the volatility of output growth

tended to move together during the last 50 years. Far from trading off against one another, it appears that the two volatilities move hand-in-hand. The major exception is the period centered on 1958, during which relatively low inflation volatility was indeed associated with relatively high output growth volatility.

The evidence in the chart is only suggestive. For instance, it could be that some third factor, such as the volatility of energy prices, contributes both to inflation volatility and to output growth volatility. Properly controlling for such influences might reveal the trade-off. But another interpretation is that monetary policy has at times been erratic: When the Fed has allowed higher inflation, inflation variability has also increased, and greater inflation variability has itself contributed to greater variability in the real economy. Conversely, the relatively low inflation of the 1990s has been associated with low inflation volatility, and this has helped stabilize output growth during the present expansion.

—James Bullard

The Volatilities of Inflation and Output Growth



NOTE: Volatility is measured as a 21-quarter centered moving standard deviation of CPI inflation rates and real GDP growth rates.

Views expressed do not necessarily reflect official positions of the Federal Reserve System

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Conventions used in this publication:

1. Charts and tables contain data that were current on November 30, 1998.
2. Shaded areas indicate recessions, as determined by the National Bureau of Economic Research.
3. *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:

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

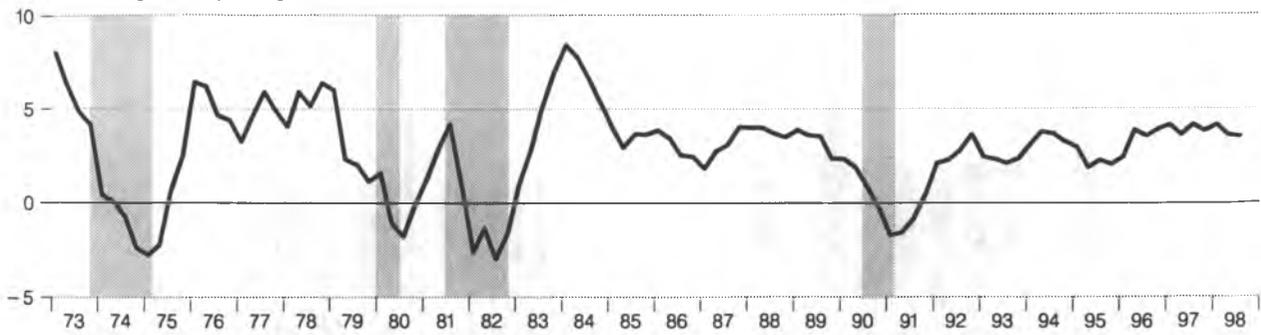
For monthly data replace 4 with 12.

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

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Real Gross Domestic Product

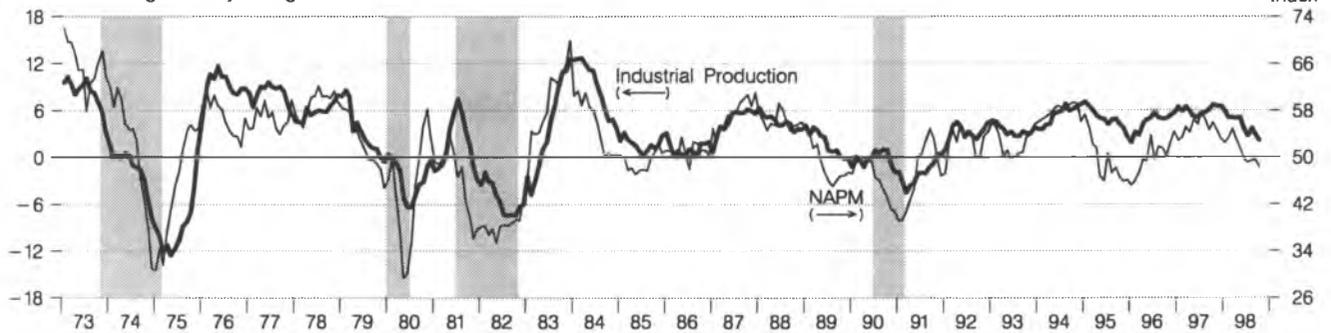
Percent change from year ago



Industrial Production and Purchasing Managers' (NAPM) Indexes

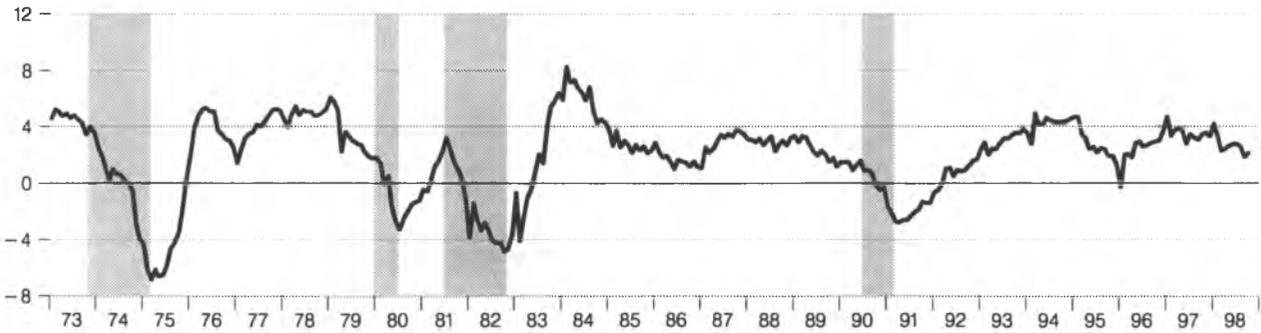
Percent change from year ago

Index



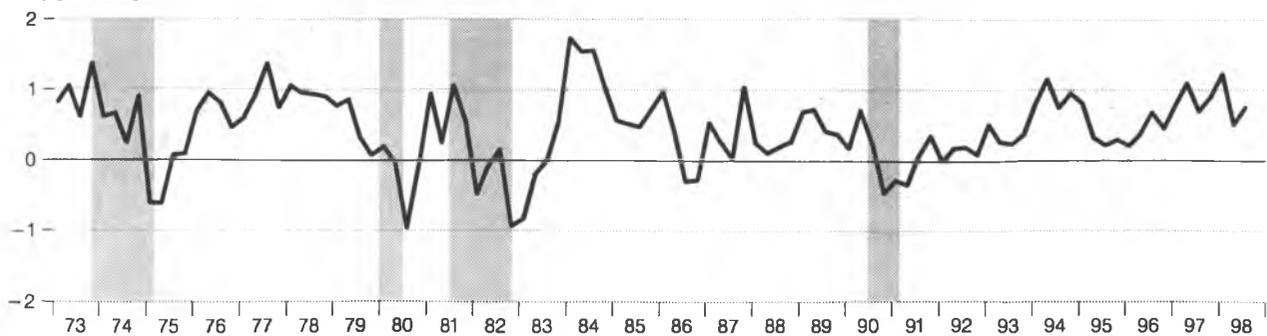
Aggregate Private Nonfarm Hours

Percent change from year ago



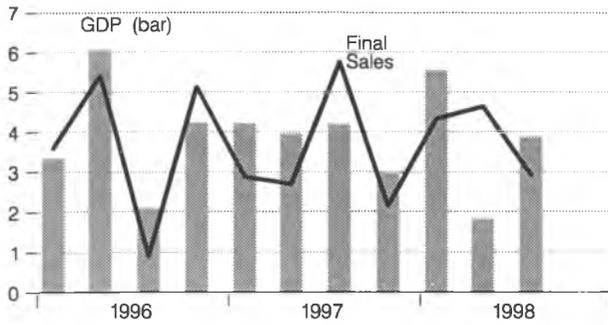
Real Change in Business Inventories

Percent of GDP



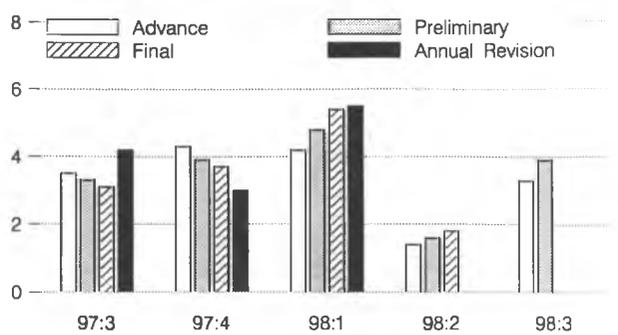
Real Final Sales and GDP

Percent change at annual rate



Real GDP Revisions

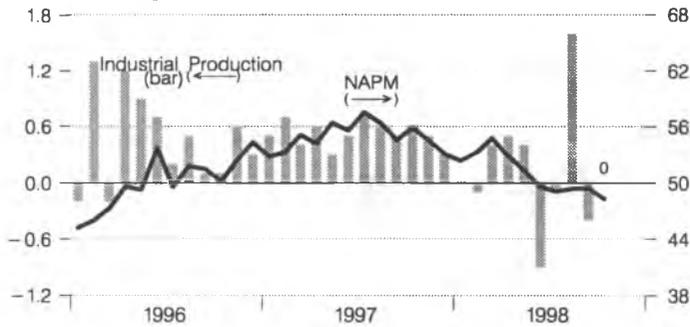
Percent change at annual rate



Industrial Production and NAPM Index

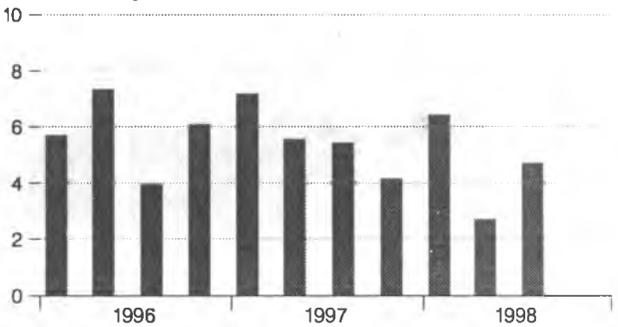
Percent change

Index



Nominal Gross Domestic Product

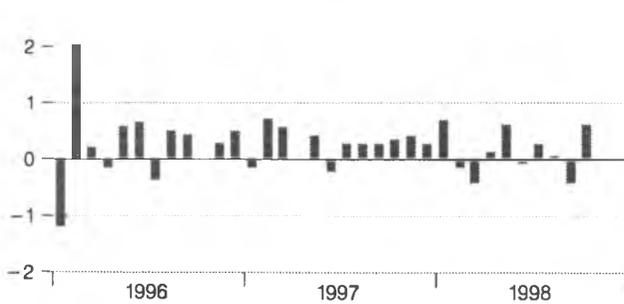
Percent change at annual rate



Aggregate Private Nonfarm Hours

Percent change

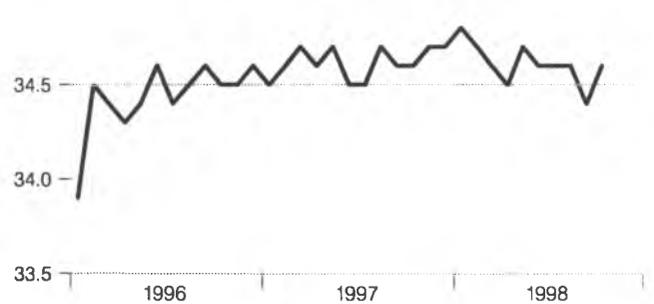
3



Average Weekly Private Nonfarm Hours

Hours

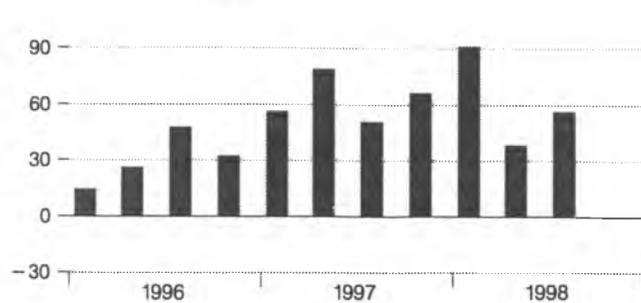
35.0



Real Change in Business Inventories

Billions of 1992 dollars

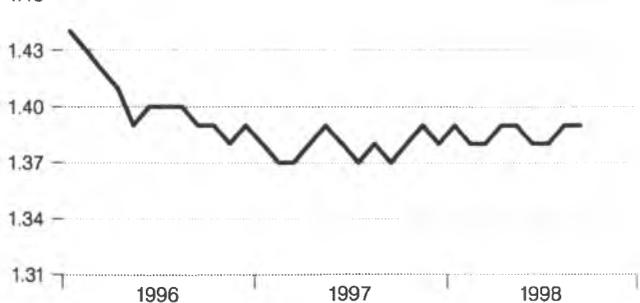
120



Inventory-Sales Ratio

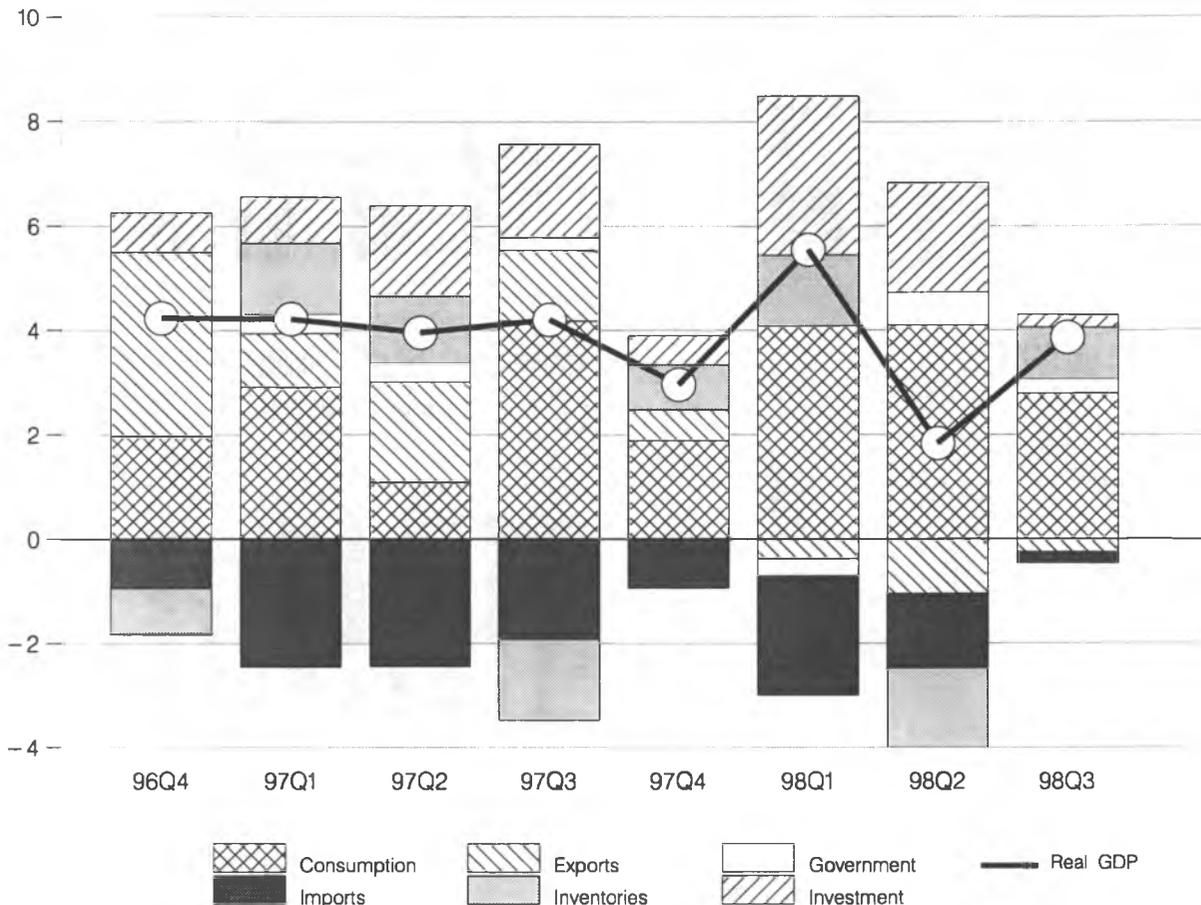
Manufacturing and trade

1.46



Contribution of Components to Real GDP Growth

Percent change at annual rate



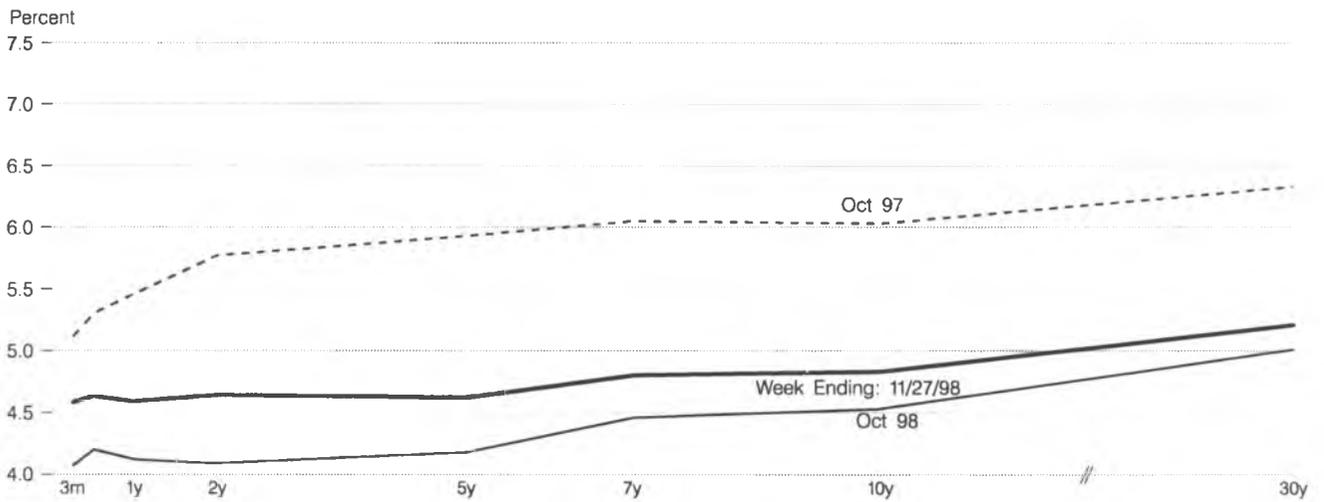
Contributions to Real GDP Growth Rate

	1996		1997			1998		
	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Real GDP	4.23	4.21	3.95	4.20	2.95	5.55	1.83	3.86
Final Sales	5.08	2.86	2.68	5.69	2.13	4.28	4.58	2.90
Change in Inventory	-0.87	1.37	1.28	-1.54	0.85	1.36	-2.82	0.99
Consumption	1.97	2.90	1.08	4.17	1.87	4.08	4.09	2.78
Fixed Investment	0.76	0.89	1.74	1.80	0.56	3.05	2.12	0.24
Nonresidential	0.97	0.78	1.53	1.89	0.22	2.50	1.54	-0.16
Residential	-0.16	0.12	0.23	-0.02	0.31	0.58	0.57	0.34
Government	0.00	0.37	0.38	0.25	0.02	-0.33	0.63	0.28
Federal	-0.43	-0.18	0.23	-0.08	-0.13	-0.56	0.43	-0.10
State and Local	0.43	0.55	0.15	0.33	0.15	0.23	0.20	0.38
Net Exports	2.54	-1.44	-0.56	-0.60	-0.36	-2.66	-2.48	-0.46
Exports	3.53	1.04	1.92	1.36	0.59	-0.38	-1.05	-0.25
Imports	-0.96	-2.46	-2.45	-1.94	-0.94	-2.29	-1.43	-0.21
Residual	-0.24	0.10	-0.02	0.06	0.02	0.03	0.42	0.07

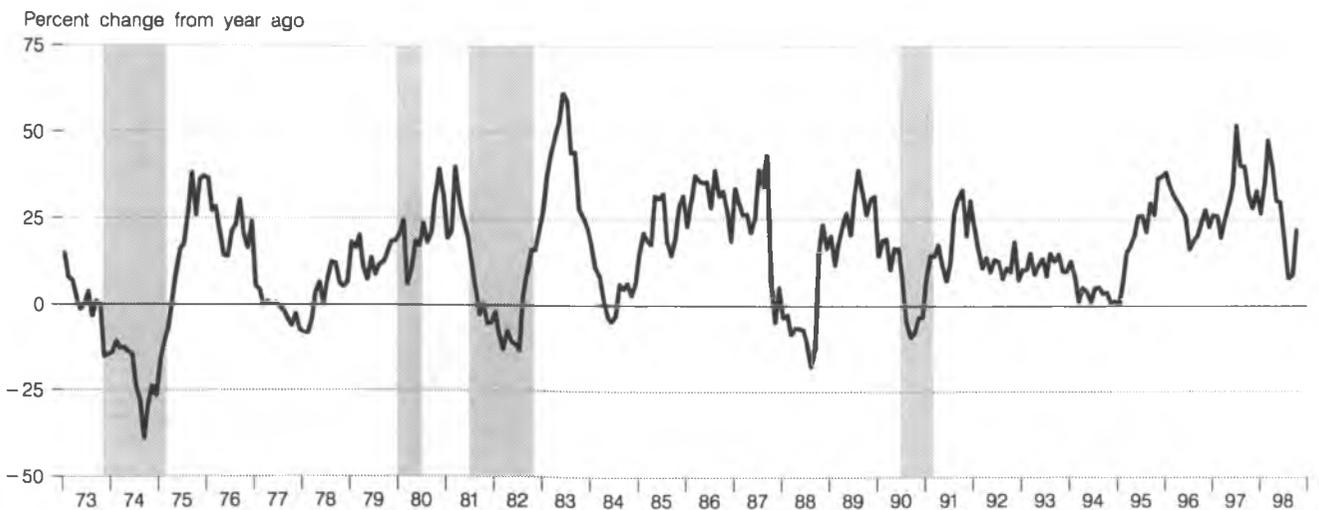
Interest Rates



Treasury Yield Curve

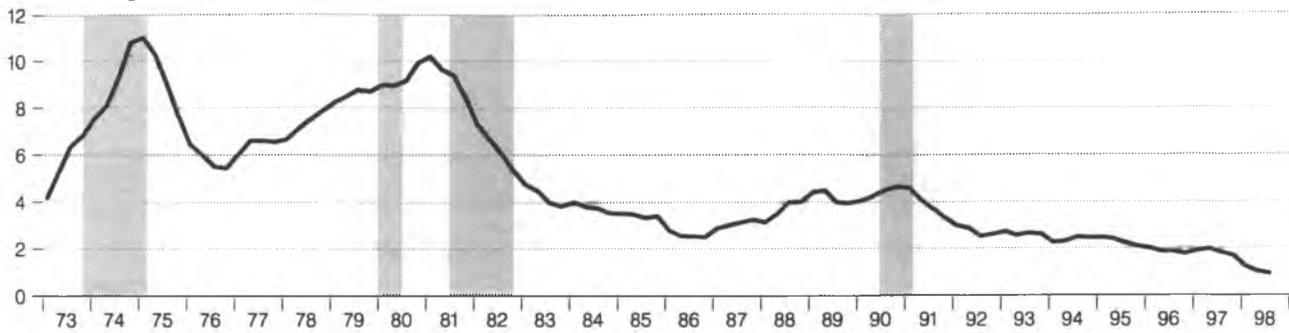


Standard and Poor's 500 Index with Reinvested Dividends



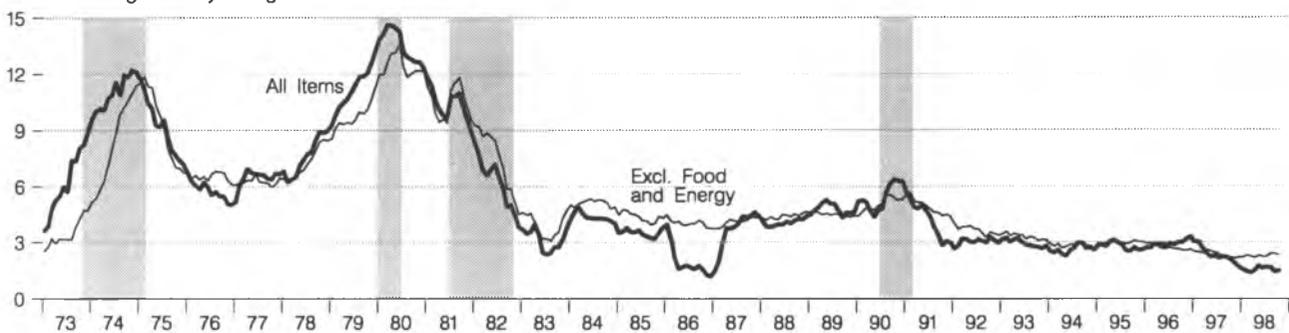
GDP Chain Price Index

Percent change from: year ago



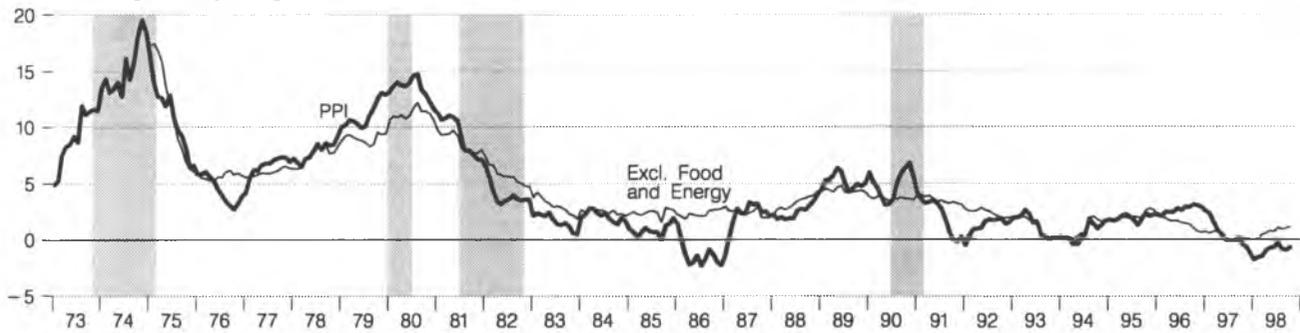
Consumer Price Index

Percent change from year ago



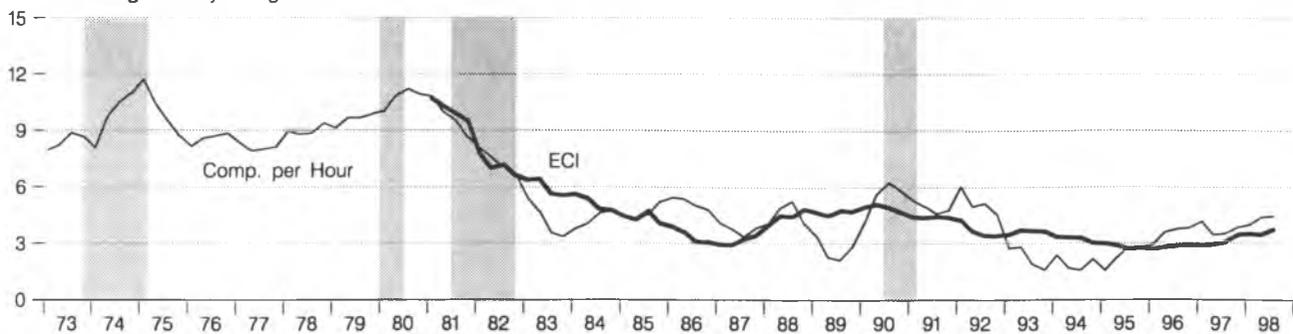
Producer Price Index, Finished Goods

Percent change from year ago



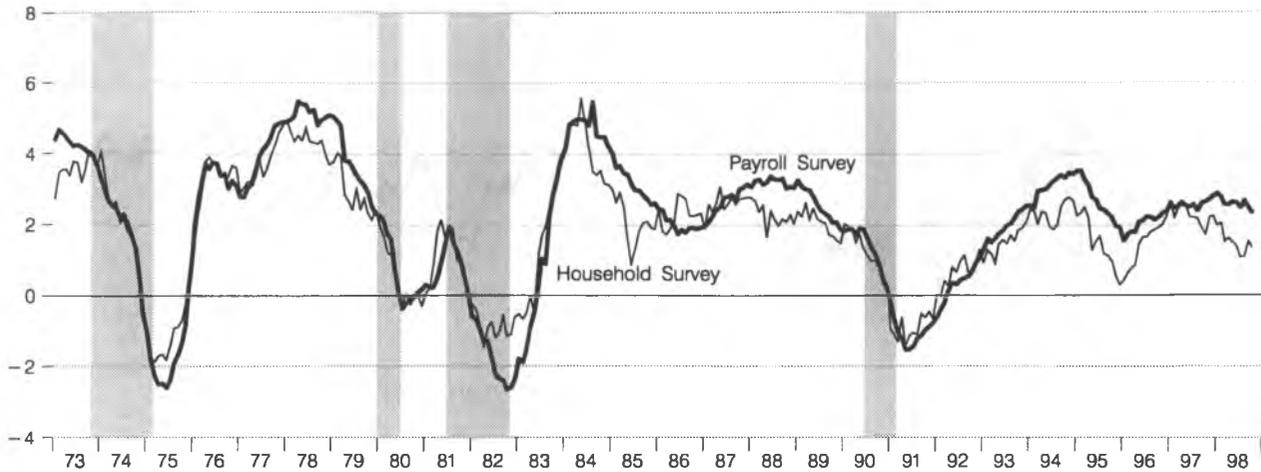
Employment Cost Index and Compensation per Hour

Percent change from year ago



Employment

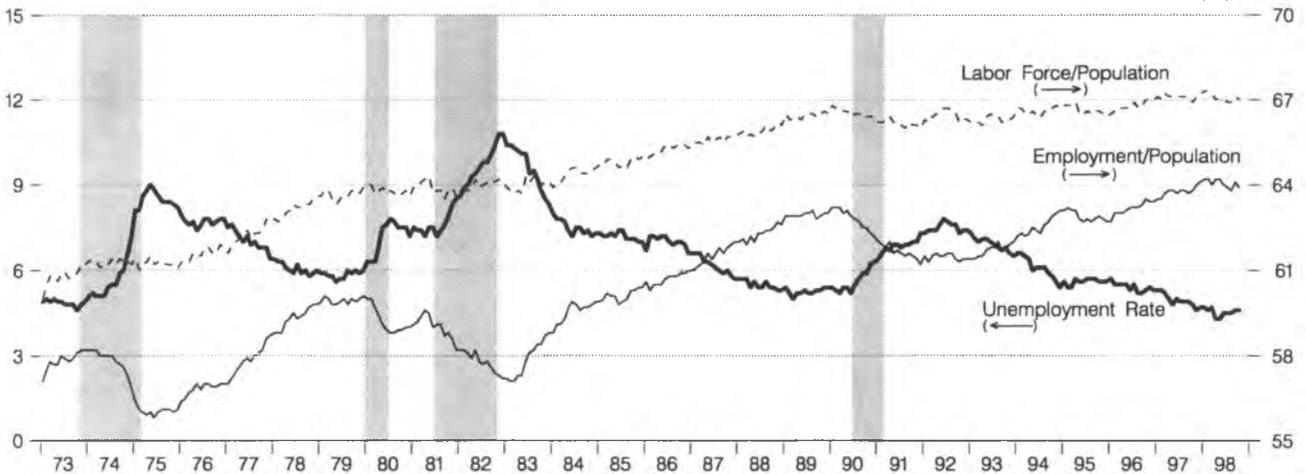
Percent change from year ago



Unemployment, Labor Force Participation and Employment Rates

Percent of labor force

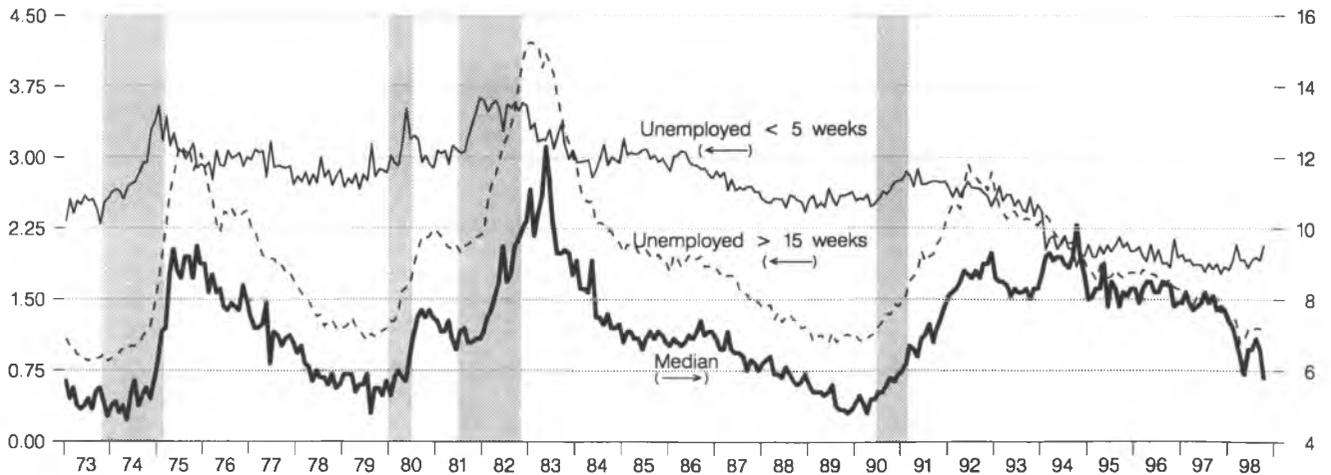
Percent of population



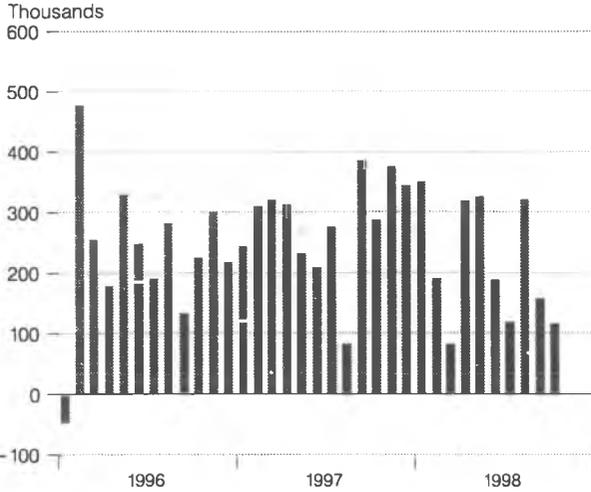
Duration of Unemployment

Percent of labor force

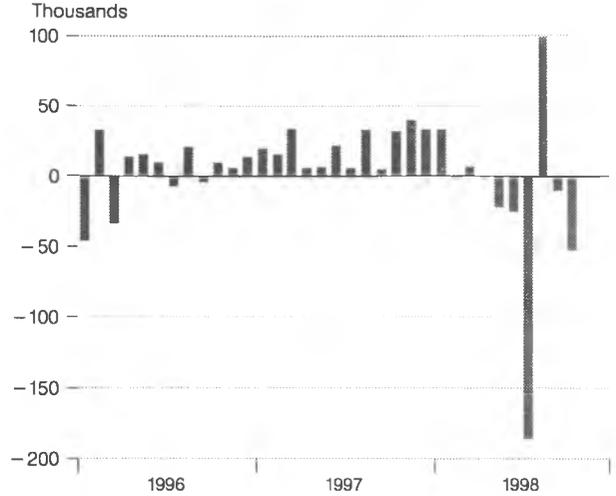
Weeks



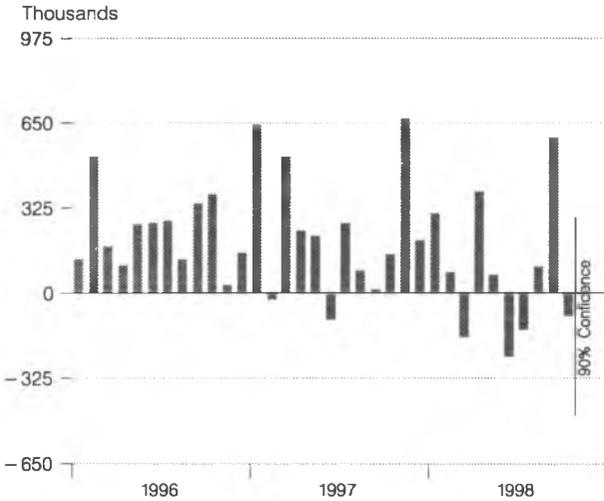
Change in Nonfarm Payrolls



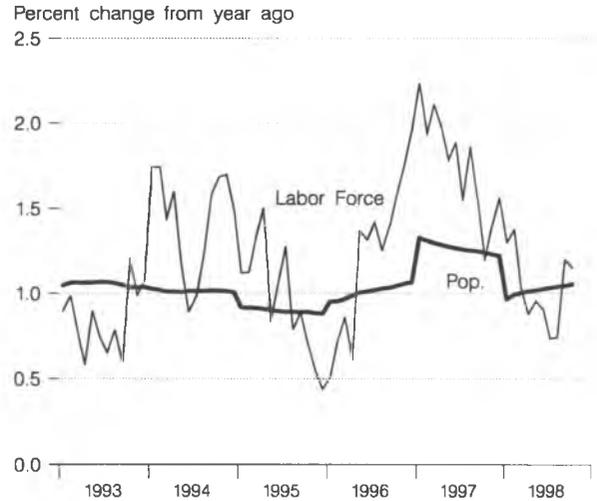
Change in Manufacturing Payrolls



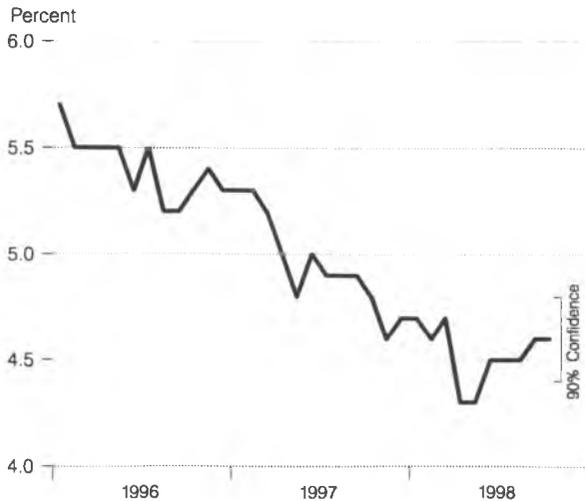
Change in Household Employment



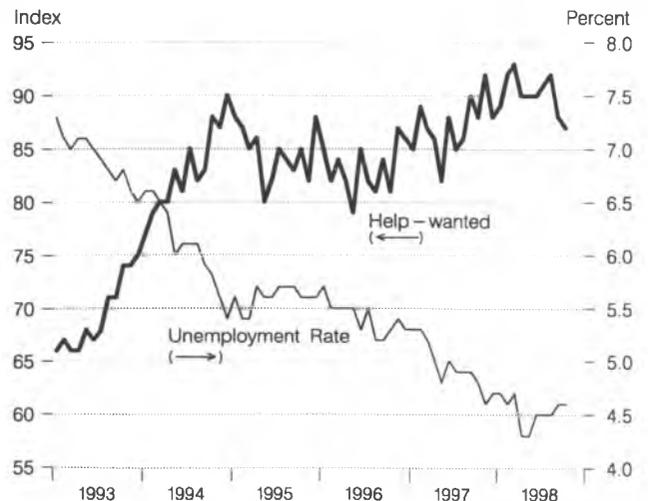
Labor Force and Population



Unemployment Rate

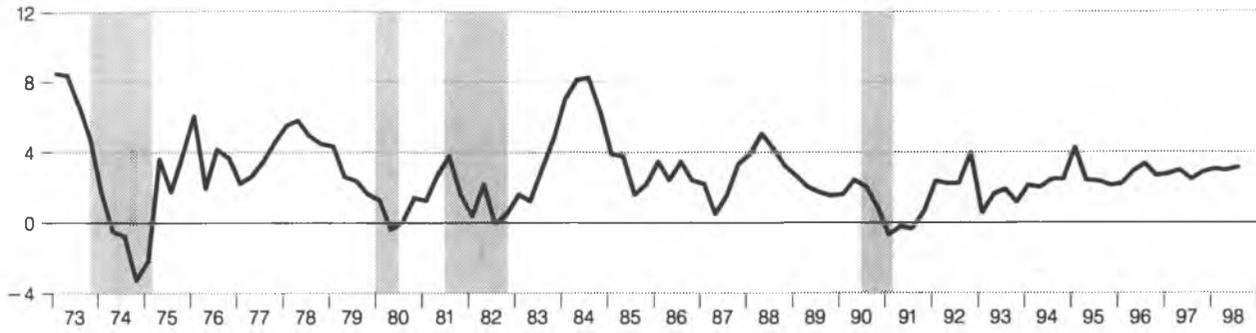


Help-Wanted Advertising



Real Disposable Income

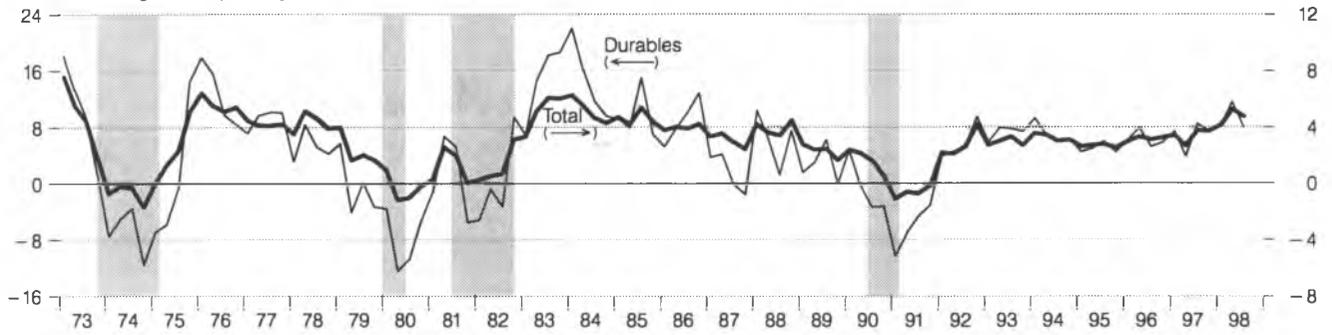
Percent change from year ago, quarterly data



Real Consumption

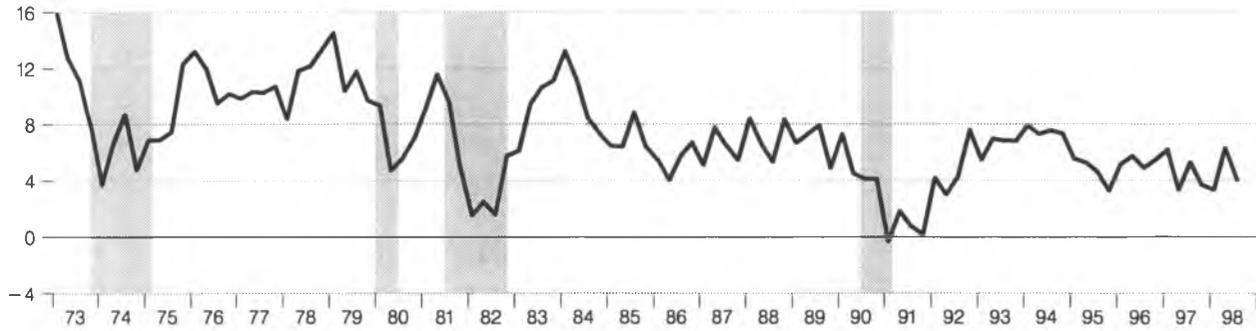
Percent change from year ago

Percent change from year ago



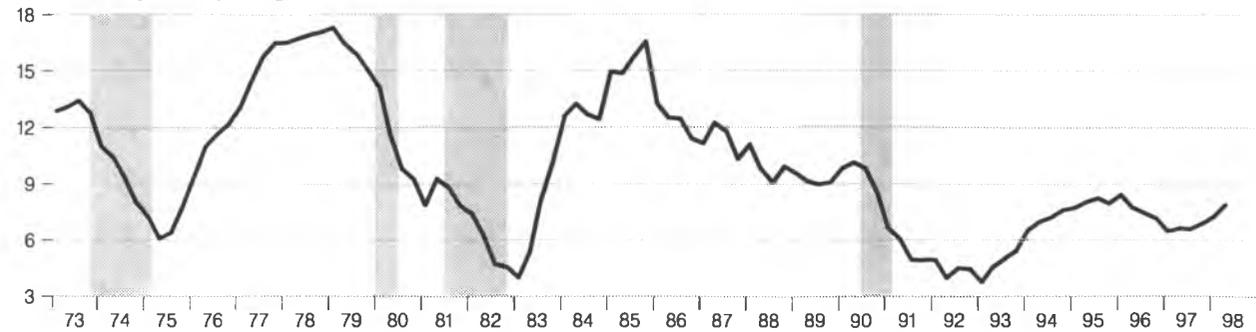
Retail Sales

Percent change from year ago of quarterly average

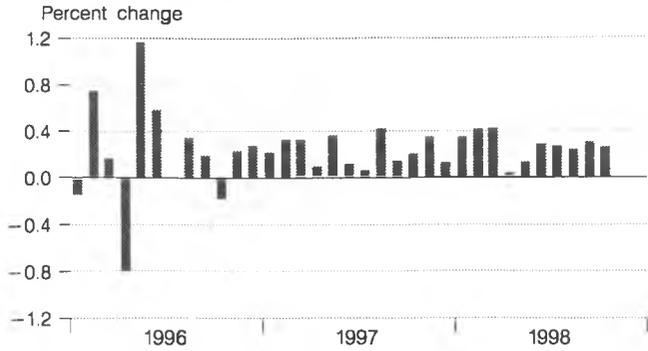


Household Debt Outstanding

Percent change from year ago



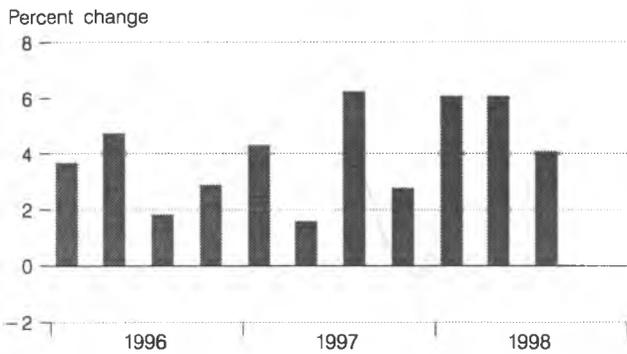
Real Disposable Income



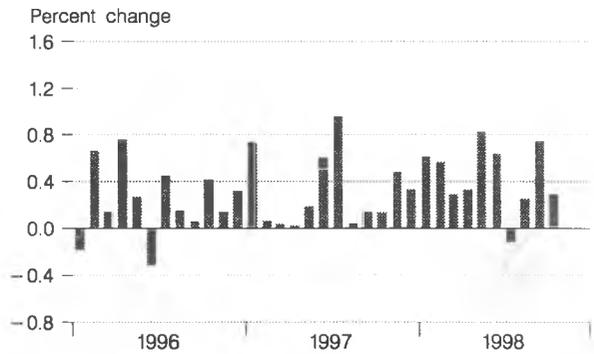
Personal Saving Rate



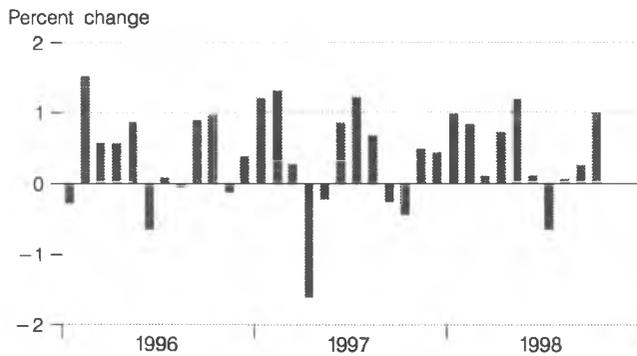
Real Consumption



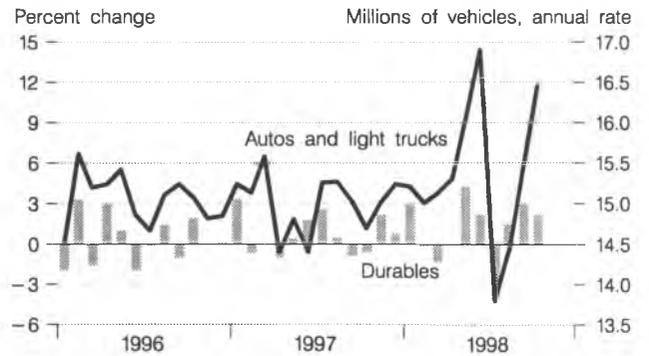
Real Consumption



Retail Sales



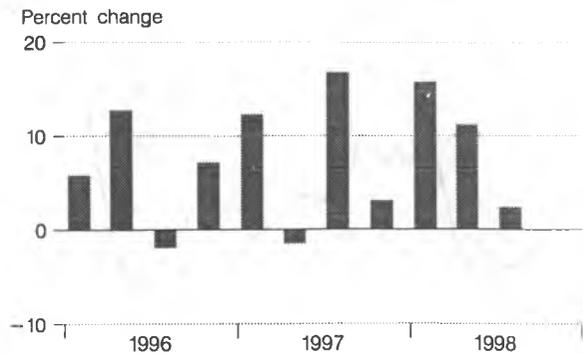
Real Durables Consumption and Vehicle Sales



Consumer Sentiment (U. of Michigan)

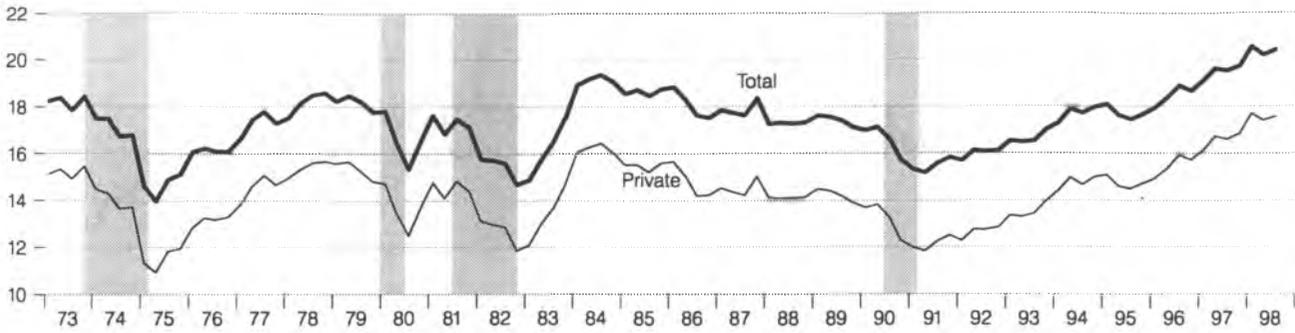


Real Durables Consumption



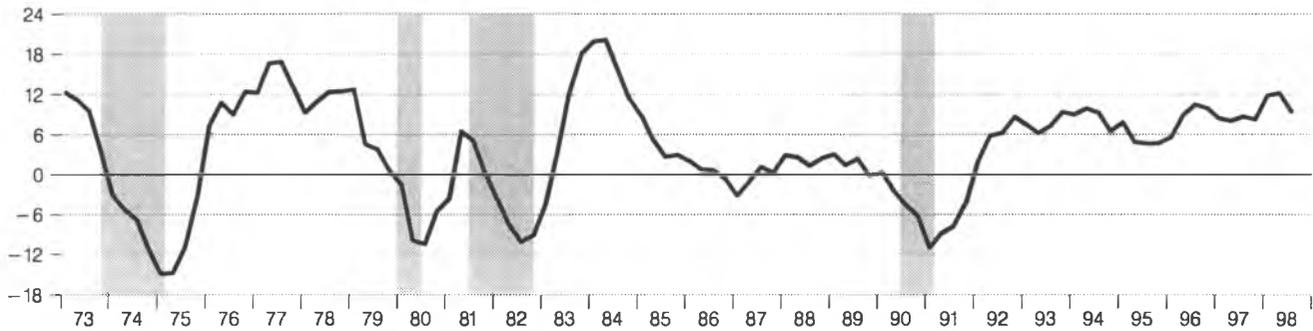
Real Investment

Percent of GDP



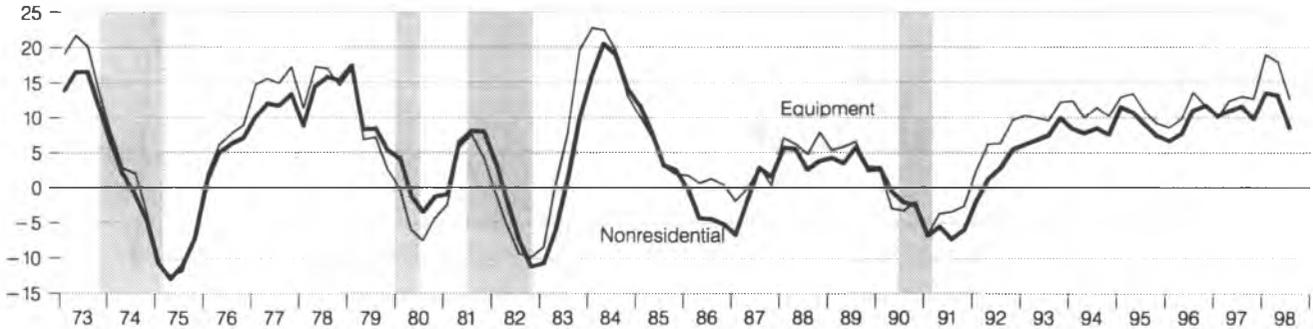
Real Private Fixed Investment

Percent change from year ago



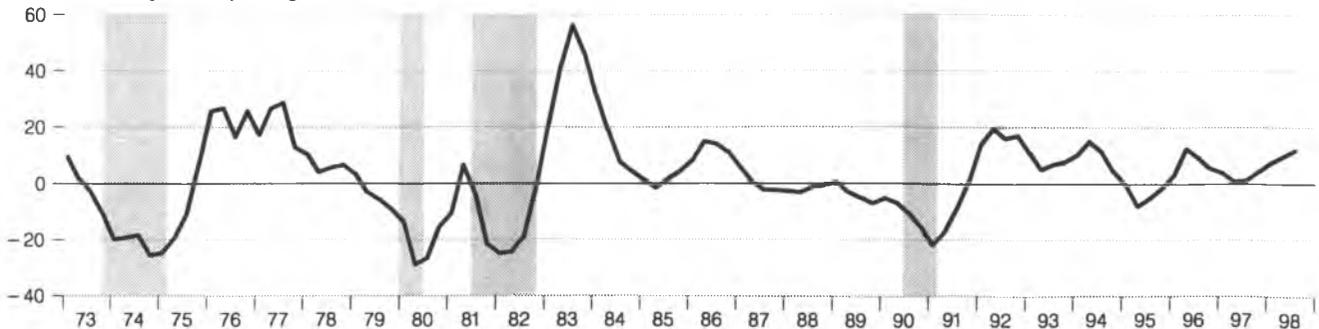
Real Nonresidential and Producers Durable Equipment Investment

Percent change from year ago

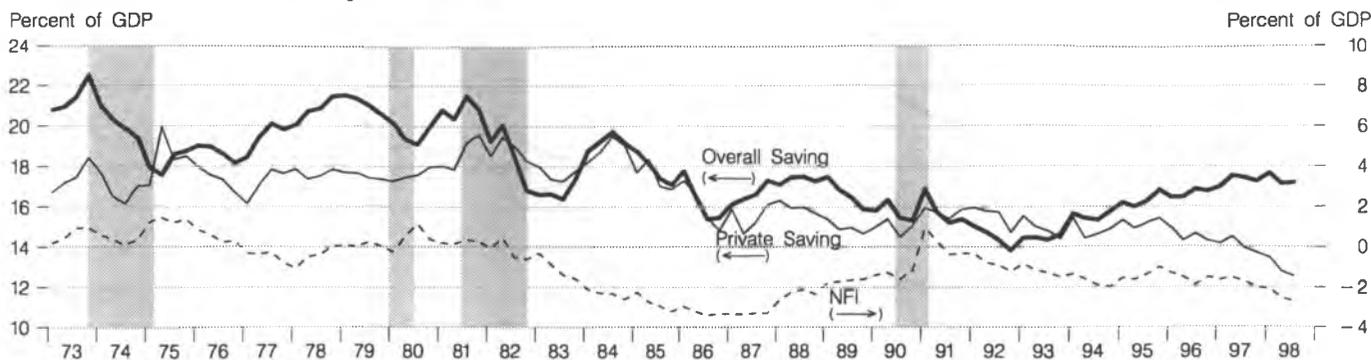


Real Residential Investment

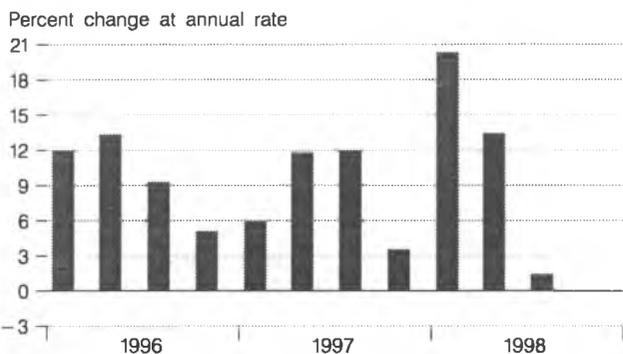
Percent change from year ago



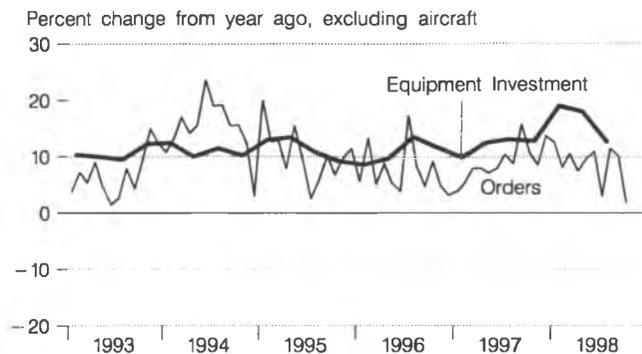
Gross Saving Rates and Net Foreign Investment



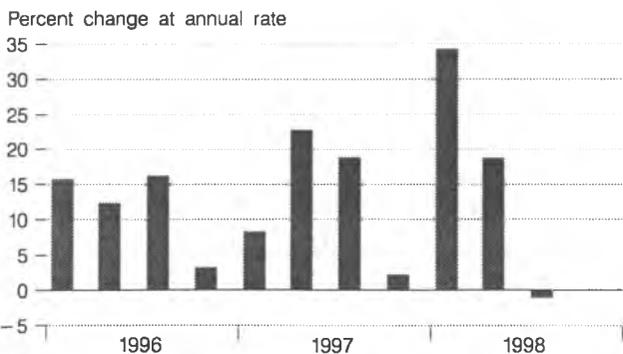
Real Private Fixed Investment



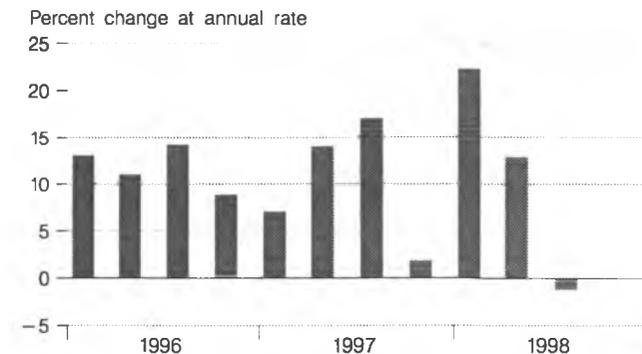
Nondefense Capital Goods Orders



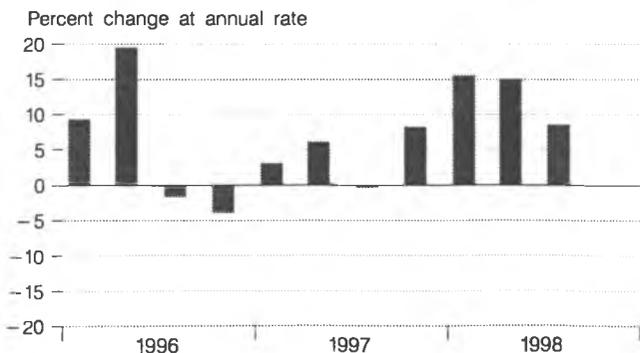
Real Equipment Investment



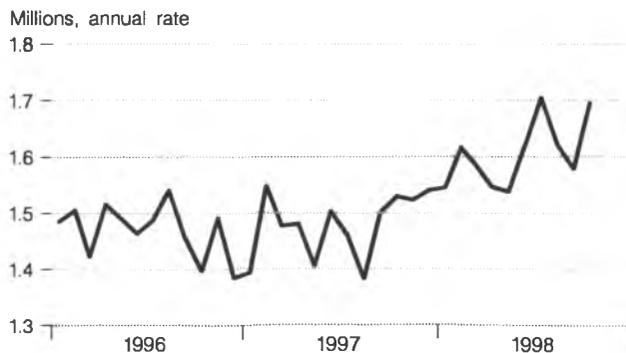
Real Nonresidential Investment



Real Residential Investment

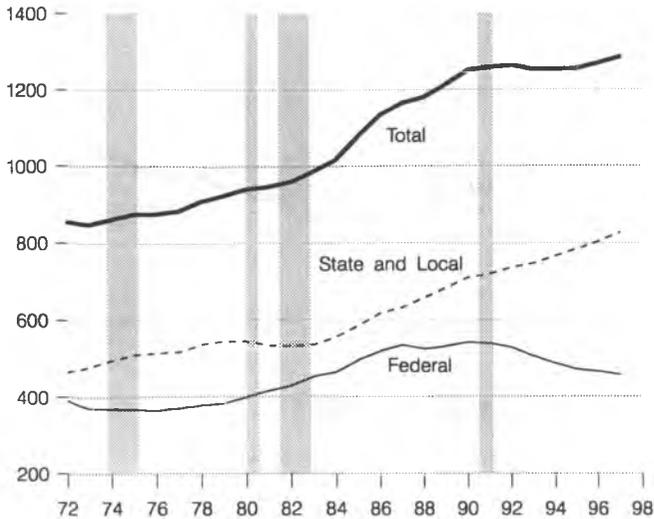


Housing Starts



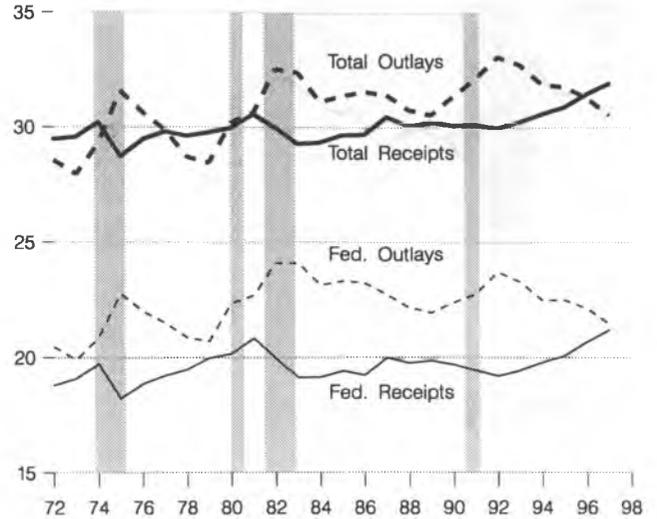
Govt. Consumption and Investment

Billions of 1992 dollars



Government Receipts and Outlays

Percent of GDP



Government Budgets

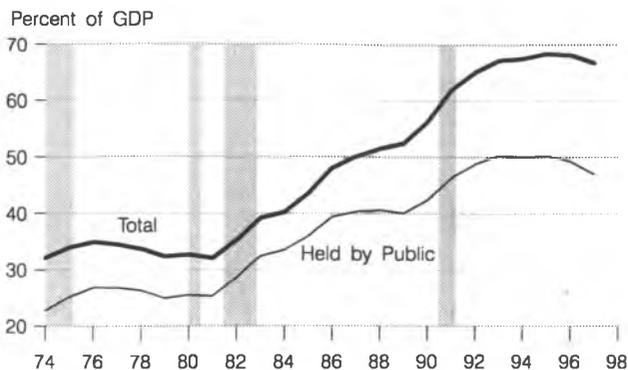
Billions of dollars

National Income Accounts Calendar Years

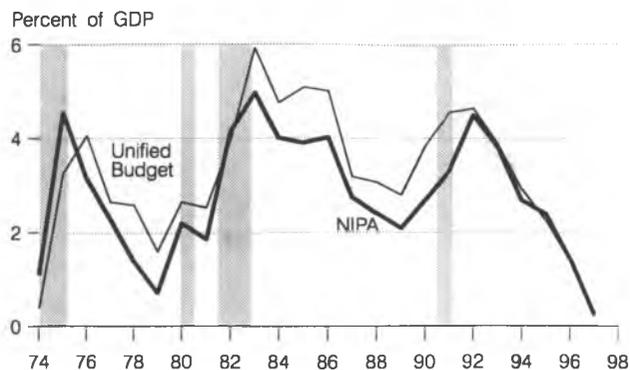
Unified Budget Fiscal Years

	State and Local			Federal			Federal		
	Receipts	Expenditures	Surplus or Deficit(-)	Receipts	Expenditures	Surplus or Deficit(-)	Receipts	Outlays	Surplus or Deficit(-)
1975	225.6	198.0	27.6	297.4	371.3	-73.9	279.1	332.3	-53.2
1976	253.9	217.9	36.0	343.1	400.3	-57.2	298.1	371.8	-73.7
1977	281.9	237.1	44.8	389.6	435.9	-46.3	355.6	409.2	-53.7
1978	309.3	256.7	52.6	446.5	478.1	-31.6	399.6	458.7	-59.2
1979	330.6	278.3	52.3	511.1	529.5	-18.4	463.3	504.0	-40.7
1980	361.4	307.0	54.4	561.5	622.5	-61.0	517.1	590.9	-73.8
1981	390.8	335.4	55.4	649.3	707.1	-57.8	599.3	678.2	-79.0
1982	409.0	357.7	51.3	646.4	781.0	-134.6	617.8	745.8	-128.0
1983	443.6	378.8	64.8	671.9	846.3	-174.4	600.6	808.4	-207.8
1984	492.0	405.1	86.9	746.9	902.9	-156.0	666.5	851.9	-185.4
1985	528.7	437.8	90.9	811.3	974.2	-162.9	734.1	946.4	-212.3
1986	570.6	475.7	94.9	850.1	1027.6	-177.5	769.2	990.5	-221.2
1987	594.9	511.1	83.8	937.4	1066.3	-128.9	854.4	1004.1	-149.8
1988	631.4	545.5	85.9	997.2	1118.5	-121.3	909.3	1064.5	-155.2
1989	681.0	585.9	95.1	1079.3	1192.7	-113.4	991.2	1143.7	-152.5
1990	728.9	648.8	80.1	1129.8	1284.5	-154.7	1032.0	1253.2	-221.2
1991	784.2	708.4	75.8	1149.0	1345.0	-196.0	1055.0	1324.4	-269.4
1992	844.3	758.0	86.3	1198.5	1479.4	-280.9	1091.3	1381.7	-290.4
1993	894.4	807.0	87.4	1275.1	1525.7	-250.6	1154.4	1409.4	-255.0
1994	949.2	852.3	96.9	1374.8	1561.4	-186.6	1258.6	1461.7	-203.1
1995	997.7	886.0	111.7	1460.3	1634.7	-174.4	1351.8	1515.7	-163.9
1996	1045.2	922.6	122.6	1584.7	1695.0	-110.3	1453.1	1560.5	-107.5
1997	1094.3	960.1	134.2	1719.9	1741.0	-21.1	1579.3	1601.2	-21.9

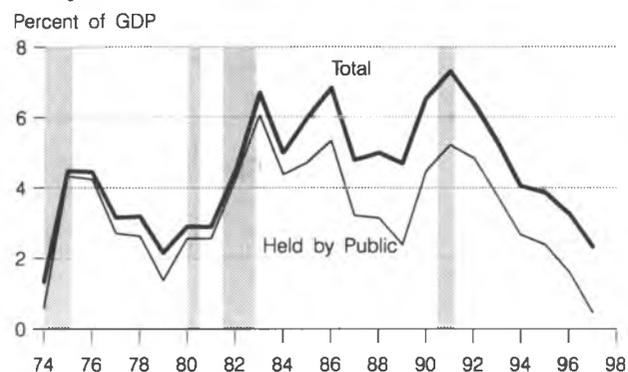
Federal Debt



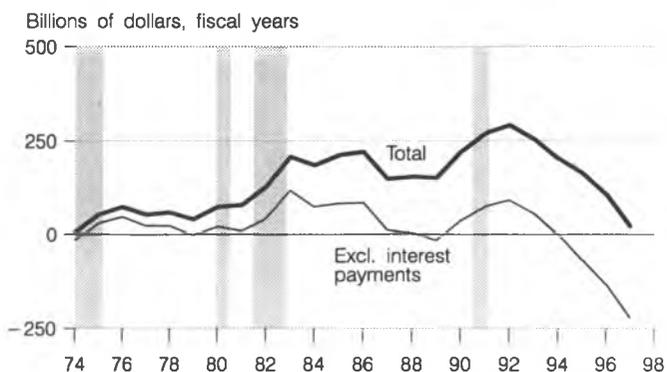
Federal Deficit



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
1994	4692.8	1213.1	3479.7	355.2	3127.8	655.8
1995	4974.0	1320.8	3653.2	374.1	3279.5	800.4
1996	5224.8	1447.0	3777.8	390.9	3386.2	978.1
1997	5413.1	1598.5	3814.7	436.5	3388.9	1218.2
1995						
March	4864.1	1254.7	3609.5	369.3	3239.2	681.2
June	4951.4	1316.6	3634.8	389.0	3245.0	736.3
September	4974.0	1320.8	3653.2	374.1	3279.5	800.4
December	4988.7	1304.5	3684.2	391.0	3294.9	814.2
1996						
March	5117.8	1353.8	3764.0	381.0	3382.8	888.7
June	5161.1	1422.4	3738.6	391.0	3347.3	912.3
September	5224.8	1447.0	3777.8	390.9	3386.2	978.1
December	5323.2	1497.2	3826.0	410.9	3411.2	1087.6
1997						
March	5380.9	1506.8	3874.1	405.6	3451.7	1144.2
June	5376.2	1571.6	3804.6	426.4	3361.7	1172.9
September	5413.1	1598.5	3814.7	436.5	3388.9	1218.2
December	5502.4	1655.7	3846.7	451.9	3393.4	1230.6
1998						
March	5542.4	1670.4	3872.0	400.0	3430.7	1240.2
June	5547.9	1757.6	3790.4	458.4	3330.6	1247.4

Trade and Investment Income Balances

Billions of dollars, quarterly rate

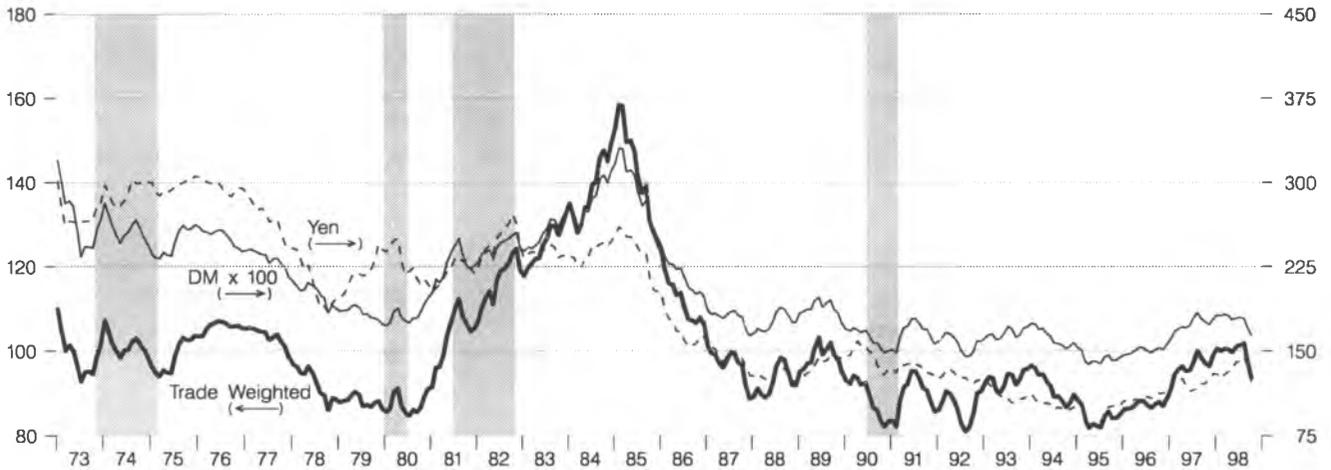


Exchange Rates

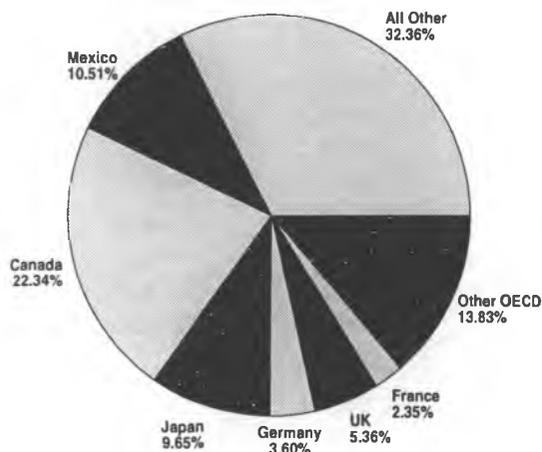
Index, March 1973 = 100

100 x (Deutsche mark/US\$)

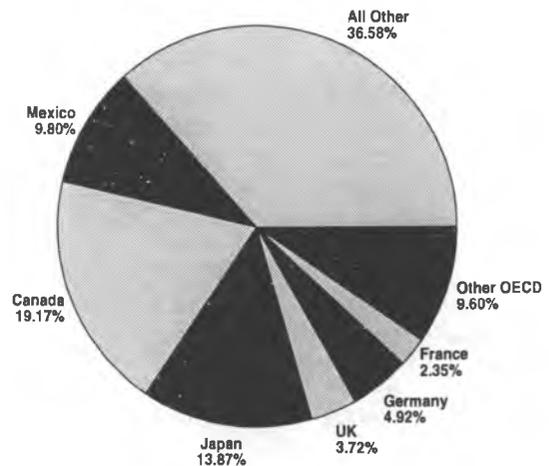
Yen/US\$



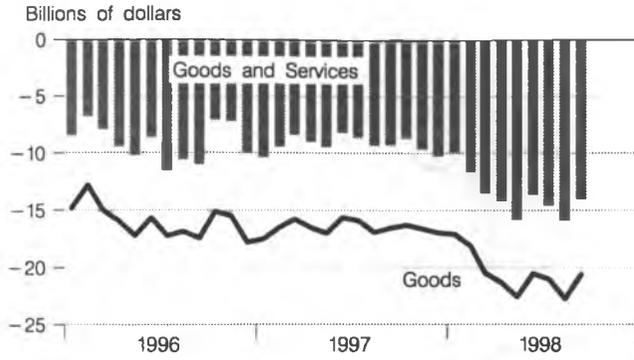
Goods Export Shares, 1997



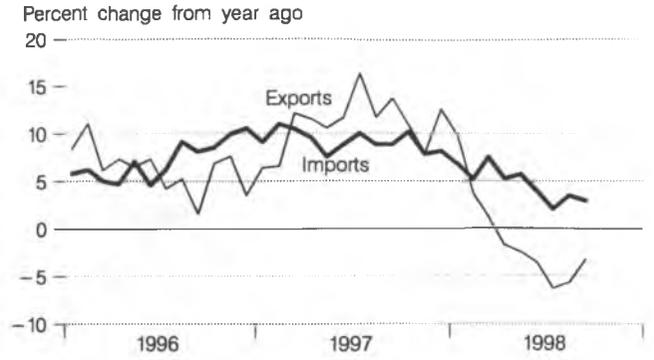
Goods Import Shares, 1997



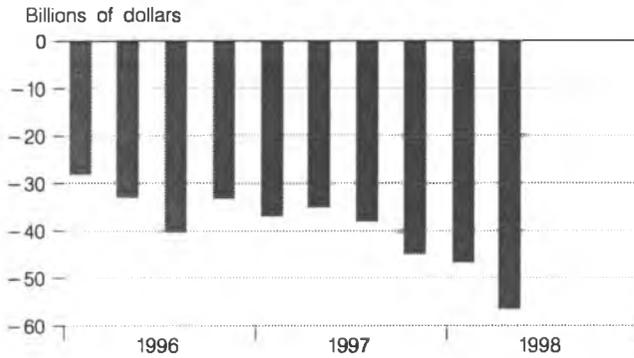
Trade Balance



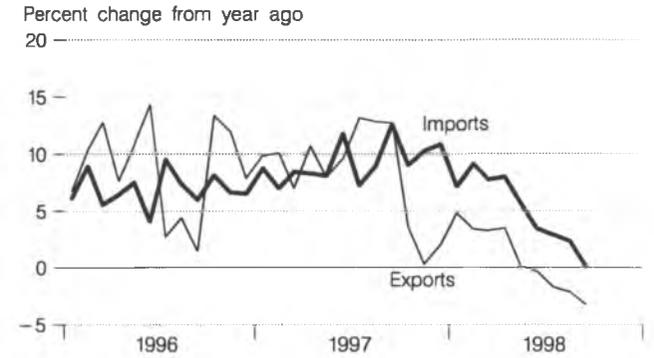
Goods Trade



Current Account Balance



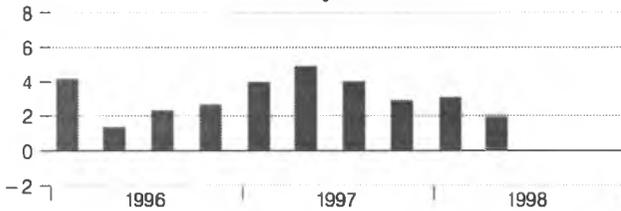
Services Trade



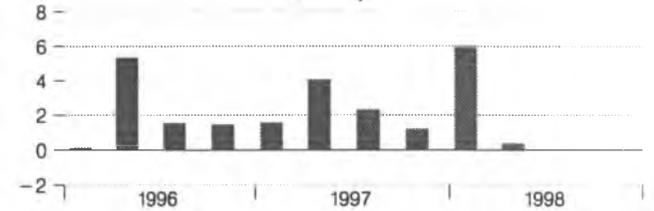
Real GDP Growth of Major Trading Partners

Percent change at annual rate

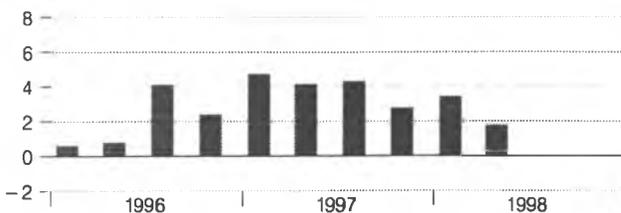
United Kingdom



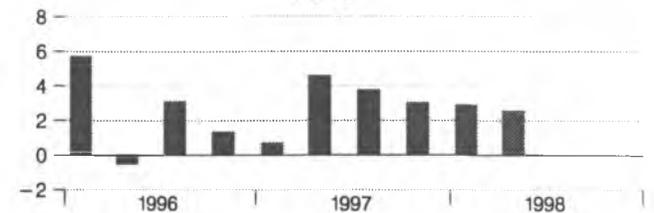
Germany



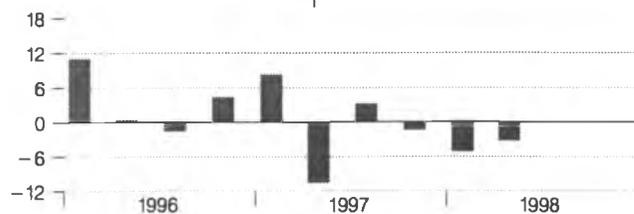
Canada



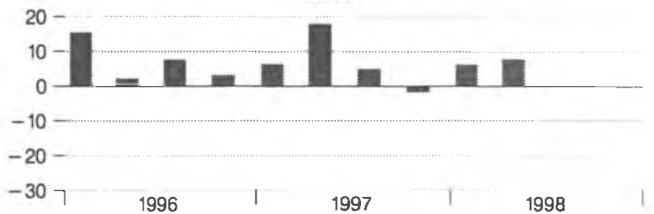
France



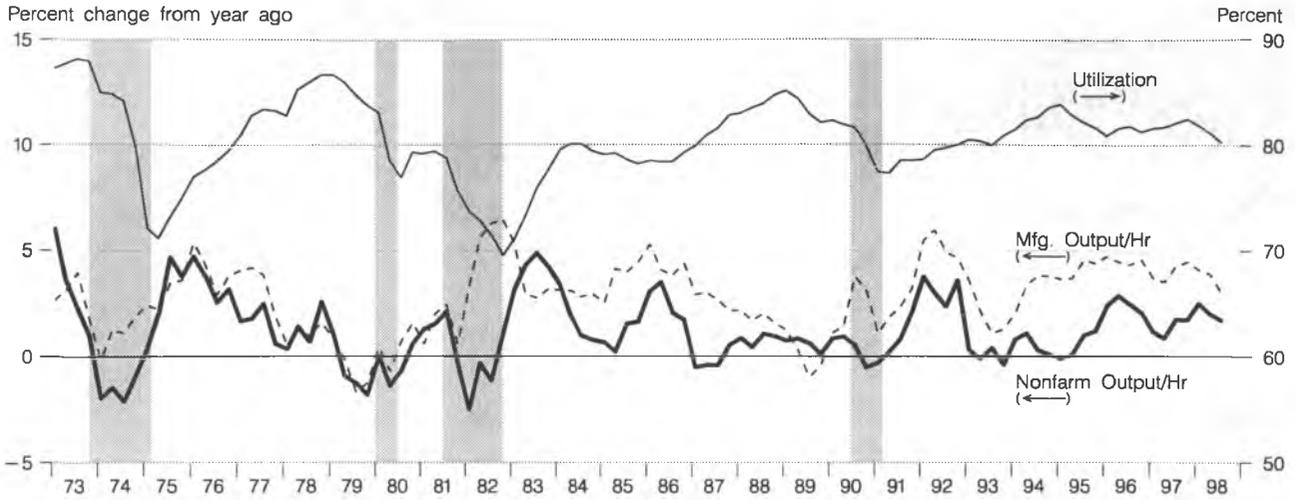
Japan



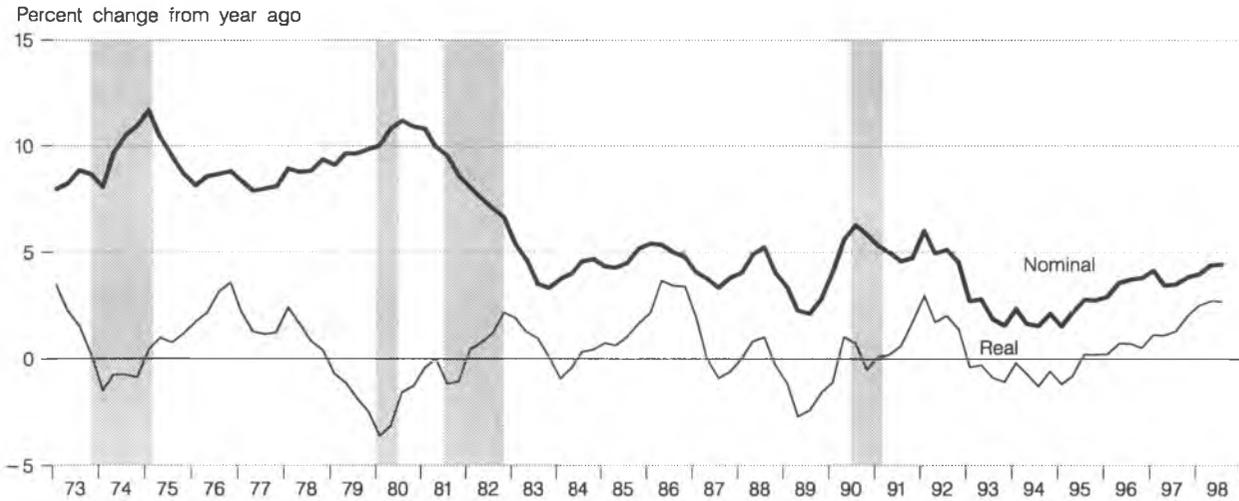
Mexico



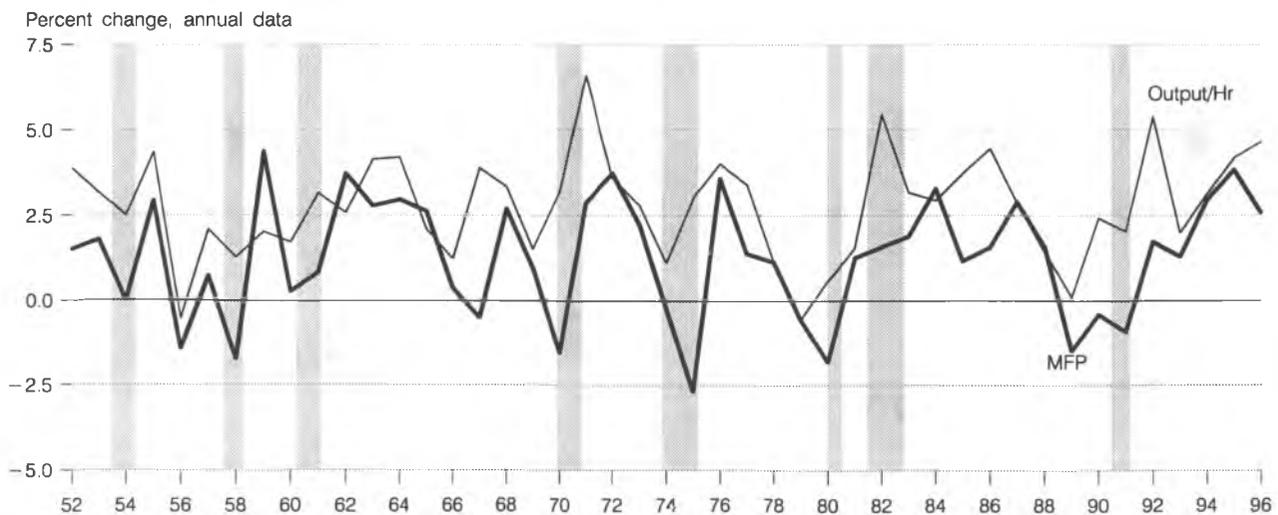
Output per Hour and Manufacturing Capacity Utilization



Nonfarm Compensation per Hour

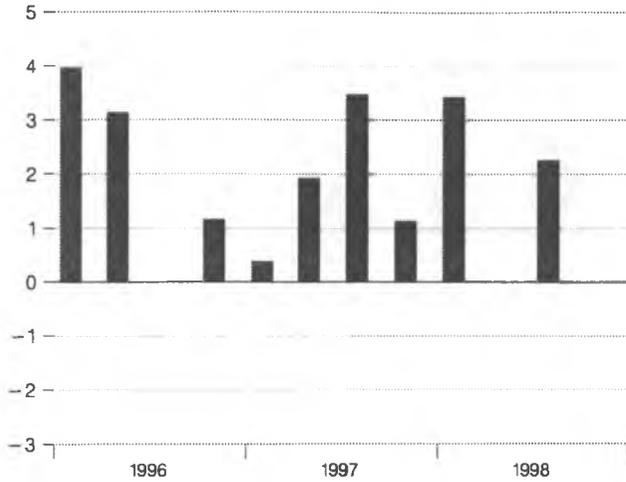


Output per Hour and Multifactor Productivity, Manufacturing



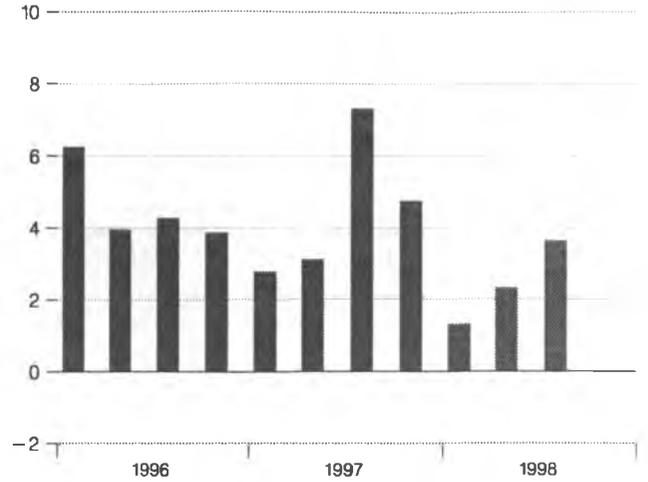
Nonfarm Output per Hour

Percent change at annual rate



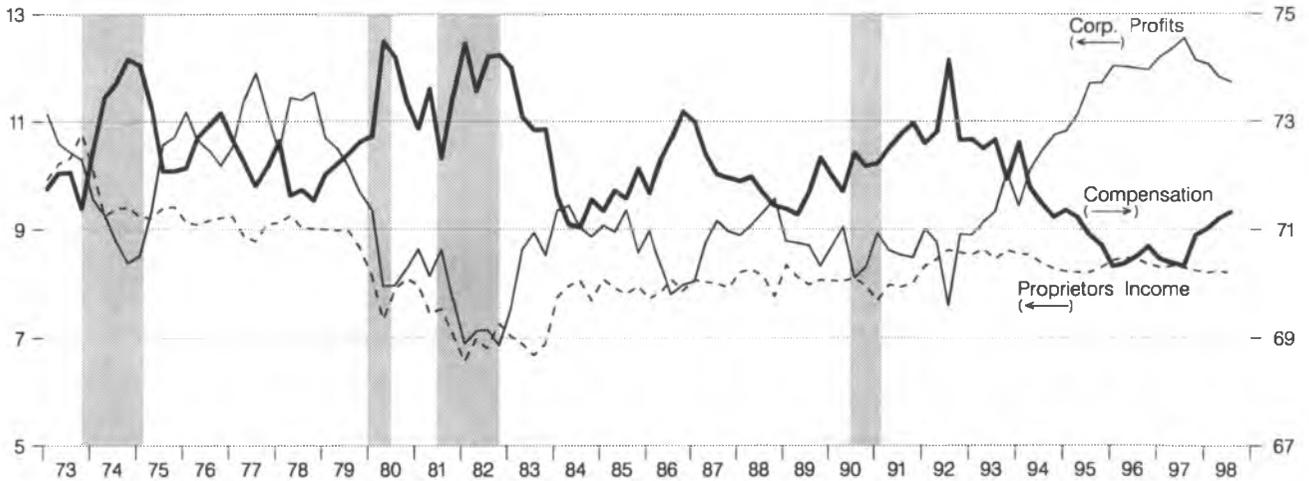
Manufacturing Output per Hour

Percent change at annual rate



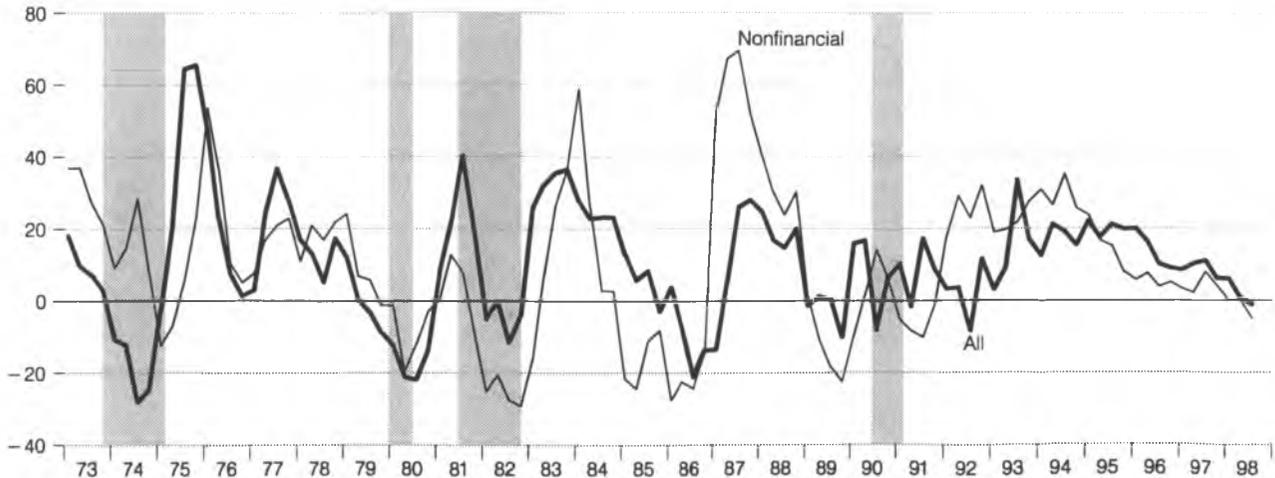
Selected Component Shares of National Income

Percent



Corporate Profits after Tax (with IVA and CCAdj)

Percent change from year ago



National Economic Trends

	Nominal GDP			Real GDP			Final Sales			Change in Business Inventories		
	Billions of \$	Percent change		Billions of 1992 \$	Percent change		Billions of 1992 \$	Percent change		Billions of 1992 \$		
Annual rate		Year ago	Annual rate		Year ago	Annual rate		Year ago	Last qtr	Year/Year ago		
1993	6558.1		5.0	6389.563		2.3	6368.864		2.1		22.102	
1994	6947.0		5.9	6610.741		3.5	6551.247		2.9		60.552	
1995	7269.6		4.6	6761.732		2.3	6731.696		2.8		27.678	
1996	7661.6		5.4	6994.774		3.4	6961.608		3.4		30.024	
1997	8110.9		5.9	7269.779		3.9	7203.683		3.5		63.210	
1995 1	7170.8	4.3	5.5	6717.458	1.7	3.0	6661.774	2.2	2.9	54.278	60.857	
2	7210.9	2.3	4.3	6724.202	0.4	1.9	6700.010	2.3	2.7	21.668	47.300	
3	7304.8	5.3	4.6	6779.528	3.3	2.3	6761.698	3.7	2.8	14.705	38.560	
4	7391.9	4.9	4.2	6825.800	2.8	2.1	6803.302	2.5	2.7	20.061	27.678	
1996 1	7495.3	5.7	4.5	6882.000	3.3	2.4	6863.618	3.6	3.0	14.385	17.705	
2	7629.2	7.3	5.8	6983.909	6.1	3.9	6954.684	5.4	3.8	26.064	18.804	
3	7703.4	3.9	5.5	7020.002	2.1	3.5	6970.278	0.9	3.1	47.507	27.004	
4	7818.4	6.1	5.8	7093.124	4.2	3.9	7057.852	5.1	3.7	32.142	30.025	
1997 1	7955.0	7.2	6.1	7166.684	4.2	4.1	7108.063	2.9	3.6	56.310	40.506	
2	8063.4	5.6	5.7	7236.497	4.0	3.6	7155.530	2.7	2.9	79.048	53.752	
3	8170.8	5.4	6.1	7311.242	4.2	4.1	7256.265	5.8	4.1	50.988	54.622	
4	8254.5	4.2	5.6	7364.632	3.0	3.8	7294.812	2.1	3.4	66.496	63.211	
1998 1	8384.2	6.4	5.4	7464.668	5.5	4.2	7372.468	4.3	3.7	91.401	71.983	
2	8440.6	2.7	4.7	7498.638	1.8	3.6	7456.424	4.6	4.2	38.168	61.763	
3	8538.6	4.7	4.5	7570.012	3.9	3.5	7510.191	2.9	3.5	56.617	63.171	
	Consumption			Durables Consumption			Private Fixed Investment			Nonresidential Investment		
	Billions of 1992 \$	Percent change		Billions of 1992 \$	Percent change		Billions of 1992 \$	Percent change		Billions of 1992 \$	Percent change	
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago
1993	4343.563		2.9	523.841		7.2	842.772		7.6	600.167		7.6
1994	4485.981		3.3	561.189		7.1	915.536		8.6	648.361		8.0
1995	4605.570		2.7	589.094		5.0	965.965		5.5	710.636		9.6
1996	4752.376		3.2	626.120		6.3	1050.583		8.8	776.587		9.3
1997	4913.530		3.4	668.602		6.8	1137.951		8.3	859.364		10.7
1995 1	4555.270	1.9	2.6	575.185	-1.0	4.5	957.113	8.2	7.8	698.402	16.1	11.5
2	4593.628	3.4	2.7	583.520	5.9	5.0	957.826	0.3	4.9	710.167	6.9	10.8
3	4623.419	2.6	2.8	595.323	8.3	6.0	965.832	3.4	4.7	711.713	0.9	9.0
4	4649.962	2.3	2.6	602.357	4.8	4.5	983.091	7.3	4.8	722.273	6.1	7.3
1996 1	4692.076	3.7	3.0	610.970	5.8	6.2	1011.365	12.0	5.7	744.777	13.1	6.6
2	4746.553	4.7	3.3	629.505	12.7	7.9	1043.517	13.3	8.9	764.403	11.0	7.6
3	4768.285	1.8	3.1	626.486	-1.9	5.2	1067.067	9.3	10.5	790.138	14.2	11.0
4	4802.550	2.9	3.3	637.507	7.2	5.8	1080.385	5.1	9.9	807.036	8.8	11.7
1997 1	4853.398	4.3	3.4	656.277	12.3	7.4	1096.046	5.9	8.4	820.860	7.0	10.2
2	4872.683	1.6	2.7	653.766	-1.5	3.9	1126.991	11.8	8.0	848.184	14.0	11.0
3	4946.993	6.2	3.7	679.619	16.8	8.5	1159.292	12.0	8.6	882.181	17.0	11.6
4	4981.005	2.8	3.7	684.753	3.1	7.4	1169.492	3.6	8.2	886.231	1.8	9.8
1998 1	5055.062	6.1	4.2	710.259	15.8	8.2	1224.943	20.4	11.8	931.864	22.2	13.5
2	5130.217	6.1	5.3	729.351	11.2	11.6	1264.130	13.4	12.2	960.377	12.8	13.2
3	5181.867	4.1	4.7	733.601	2.4	7.9	1268.650	1.4	9.4	957.404	-1.2	8.5

National Economic Trends

	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
1993	102.643		2.6	118.4		3.6	115.2		2.9	127.0		5.4
1994	105.088		2.4	122.2		3.2	118.5		2.9	132.1		4.0
1995	107.513		2.3	125.7		2.8	121.9		2.9	135.0		2.2
1996	109.541		1.9	129.2		2.8	126.0		3.3	137.4		1.8
1997	111.569		1.9	133.2		3.1	130.4		3.5	140.2		2.0
1995 1	106.735	2.5	2.5	124.4	2.9	3.0	120.6	2.7	3.0	133.9	1.2	2.7
2	107.259	2.0	2.4	125.3	2.9	2.9	121.5	3.0	2.9	134.6	2.1	2.4
3	107.758	1.9	2.2	126.1	2.6	2.7	122.4	3.0	2.9	135.3	2.1	1.9
4	108.299	2.0	2.1	126.9	2.6	2.8	123.2	2.6	2.8	136.0	2.1	1.9
1996 1	108.900	2.2	2.0	127.7	2.5	2.7	124.4	4.0	3.2	136.1	0.3	1.6
2	109.277	1.4	1.9	128.8	3.5	2.8	125.6	3.9	3.4	137.0	2.7	1.8
3	109.772	1.8	1.9	129.7	2.8	2.9	126.5	2.9	3.3	137.8	2.4	1.8
4	110.214	1.6	1.8	130.6	2.8	2.9	127.4	2.9	3.4	138.6	2.3	1.9
1997 1	110.966	2.8	1.9	131.4	2.5	2.9	128.5	3.5	3.3	138.8	0.6	2.0
2	111.447	1.7	2.0	132.6	3.7	3.0	129.7	3.8	3.3	139.7	2.6	2.0
3	111.772	1.2	1.8	133.7	3.4	3.1	131.0	4.1	3.6	140.4	2.0	1.9
4	112.091	1.1	1.7	135.1	4.3	3.4	132.5	4.7	4.0	141.7	3.8	2.2
1998 1	112.332	0.9	1.2	136.0	2.7	3.5	133.6	3.4	4.0	142.1	1.1	2.4
2	112.571	0.9	1.0	137.2	3.6	3.5	134.9	3.9	4.0	143.2	3.1	2.5
3	112.803	0.8	0.9	138.7	4.4	3.7	136.6	5.1	4.3	144.2	2.8	2.7
	Exports			Imports			Nonfarm Output per Hour			Nonfarm Compensation/Hr		
	Billions of 1992 \$	Percent change		Billions of 1992 \$	Percent change		Index	Percent change		Index	Percent change	
	Annual rate	Year ago	Annual rate	Year ago	Annual rate	Year ago	Annual rate	Year ago	Annual rate	Year ago		
1993	658.183		2.9	728.409		8.9	100.1		0.1	102.2		2.2
1994	712.399		8.2	817.026		12.2	100.6		0.5	104.2		2.0
1995	792.575		11.3	889.040		8.8	101.2		0.6	106.7		2.4
1996	860.008		8.5	971.248		9.2	103.7		2.5	110.4		3.5
1997	969.988		12.8	1106.124		13.9	105.1		1.4	114.5		3.7
1995 1	763.885	9.2	13.0	873.433	9.8	12.9	100.6	-0.8	-0.1	105.5	1.9	1.5
2	774.000	5.4	9.9	888.705	7.2	10.0	100.9	1.2	0.1	106.2	2.7	2.2
3	806.291	17.8	11.7	893.127	2.0	7.2	101.3	1.6	1.0	107.0	3.0	2.8
4	826.119	10.2	10.5	900.900	3.5	5.6	102.0	2.8	1.2	107.9	3.4	2.8
1996 1	833.607	3.7	9.1	929.064	13.1	6.4	103.0	4.0	2.4	108.6	2.6	2.9
2	845.474	5.8	9.2	958.939	13.5	7.9	103.8	3.1	2.9	110.0	5.3	3.6
3	849.893	2.1	5.4	990.012	13.6	10.8	103.8	0.0	2.5	111.0	3.7	3.7
4	911.053	32.0	10.3	1006.971	7.0	11.8	104.1	1.2	2.1	112.0	3.7	3.8
1997 1	929.410	8.3	11.5	1050.935	18.6	13.1	104.2	0.4	1.2	113.1	4.0	4.1
2	963.594	15.5	14.0	1095.206	17.9	14.2	104.7	1.9	0.9	113.8	2.5	3.5
3	988.109	10.6	16.3	1130.521	13.5	14.2	105.6	3.5	1.7	114.9	3.9	3.5
4	998.838	4.4	9.6	1147.840	6.3	14.0	105.9	1.1	1.7	116.3	5.0	3.8
1998 1	991.875	-2.8	6.7	1190.406	15.7	13.3	106.8	3.4	2.5	117.6	4.5	4.0
2	972.130	-7.7	0.9	1217.298	9.3	11.1	106.8	0.0	2.0	118.8	4.1	4.4
3	967.411	-1.9	-2.1	1221.298	1.3	8.0	107.4	2.3	1.7	120.0	4.1	4.4

National Economic Trends

	Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours				
	Thousands	Change	Percent change		Thousands	Change	Percent change		Index	Monthly rate	Annual rate	Year ago	
			Annual rate	Year ago			Annual rate	Year ago					
1993	120259	1771		1.5	110692	2101		1.9	124.6			2.9	
1994	123069	2810		2.3	114131	3440		3.1	129.9			4.2	
1995	124903	1834		1.5	117187	3055		2.7	133.4			2.7	
1996	126708	1805		1.4	119590	2403		2.1	136.6			2.4	
1997	129557	2849		2.2	122677	3086		2.6	141.4			3.5	
1996	1	125656	449	1.4	0.6	118459	524	1.8	1.7	134.5	0.2	1.0	1.2
	2	126323	667	2.1	1.3	119273	814	2.8	2.0	136.2	1.3	5.3	2.5
	3	127067	744	2.4	1.8	119974	701	2.4	2.2	137.3	0.8	3.1	2.7
	4	127787	720	2.3	2.1	120655	681	2.3	2.3	138.4	0.8	3.3	3.2
1997	1	128697	910	2.9	2.4	121461	805	2.7	2.5	139.7	1.0	3.9	3.9
	2	129387	690	2.2	2.4	122317	856	2.9	2.6	140.9	0.8	3.4	3.4
	3	129723	336	1.0	2.1	122995	678	2.2	2.5	141.7	0.6	2.3	3.2
	4	130421	698	2.2	2.1	123934	939	3.1	2.7	143.1	1.0	4.1	3.4
1998	1	131080	659	2.0	1.9	124795	862	2.8	2.7	144.3	0.8	3.2	3.2
	2	131348	268	0.8	1.5	125516	720	2.3	2.6	144.6	0.2	0.8	2.6
	3	131333	-15	-0.0	1.2	126136	620	2.0	2.6	145.1	0.3	1.4	2.4
1996	Oct	127715	377	3.6	1.9	120382	225	2.3	2.2	137.9	0.0	0.0	2.9
	Nov	127746	31	0.3	2.0	120683	301	3.0	2.3	138.3	0.3	3.5	3.0
	Dec	127899	153	1.4	2.2	120901	218	2.2	2.4	139.0	0.5	6.2	3.6
1997	Jan	128541	642	6.2	2.6	121146	245	2.5	2.6	138.8	-0.1	-1.7	4.7
	Feb	128515	-26	-0.2	2.2	121457	311	3.1	2.5	139.8	0.7	9.0	3.3
	Mar	129035	520	5.0	2.4	121779	322	3.2	2.5	140.6	0.6	7.1	3.7
	Apr	129275	240	2.3	2.6	122092	313	3.1	2.6	140.6	0.0	0.0	3.8
	May	129494	219	2.1	2.5	122325	233	2.3	2.5	141.2	0.4	5.2	3.7
	Jun	129392	-102	-0.9	2.2	122534	209	2.1	2.5	140.9	-0.2	-2.5	2.8
	Jul	129661	269	2.5	2.2	122811	277	2.7	2.6	141.3	0.3	3.5	3.4
	Aug	129747	86	0.8	2.2	122894	83	0.8	2.4	141.7	0.3	3.5	3.2
	Sep	129761	14	0.1	1.9	123280	386	3.8	2.6	142.1	0.3	3.4	3.0
	Oct	129910	149	1.4	1.7	123568	288	2.8	2.6	142.6	0.4	4.3	3.4
	Nov	130575	665	6.3	2.2	123944	376	3.7	2.7	143.2	0.4	5.2	3.5
	Dec	130777	202	1.9	2.3	124289	345	3.4	2.8	143.6	0.3	3.4	3.3
1998	Jan	131083	306	2.8	2.0	124640	351	3.4	2.9	144.6	0.7	8.7	4.2
	Feb	131163	80	0.7	2.1	124832	192	1.9	2.8	144.4	-0.1	-1.6	3.3
	Mar	130994	-169	-1.5	1.5	124914	82	0.8	2.6	143.8	-0.4	-4.9	2.3
	Apr	131383	389	3.6	1.6	125234	320	3.1	2.6	144.0	0.1	1.7	2.4
	May	131453	70	0.6	1.5	125562	328	3.2	2.6	144.9	0.6	7.8	2.6
	Jun	131209	-244	-2.2	1.4	125751	189	1.8	2.6	144.8	-0.1	-0.8	2.8
	Jul	131067	-142	-1.3	1.1	125869	118	1.1	2.5	145.2	0.3	3.4	2.8
	Aug	131168	101	0.9	1.1	126191	322	3.1	2.7	145.3	0.1	0.8	2.5
	Sep	131765	597	5.6	1.5	126348	157	1.5	2.5	144.7	-0.4	-4.8	1.8
	Oct	131677	-88	-0.8	1.4	126464	116	1.1	2.3	145.6	0.6	7.7	2.1

	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			
1993	6.9	2072.434			6.5	103.455			3.5	3.00	5.86	
1994	6.1	2227.838			7.5	109.062			5.4	4.25	7.08	
1995	5.6	2331.617			4.7	114.441			4.9	5.49	6.58	
1996	5.4	2455.234			5.3	119.548			4.5	5.01	6.44	
1997	5.0	2568.313			4.6	126.731			6.0	5.06	6.35	
1996	1	5.6	602.441	1.7	7.1	5.2	116.462	0.7	2.8	2.6	4.93	5.91
	2	5.4	613.436	1.8	7.5	5.7	119.168	2.3	9.6	4.7	5.02	6.72
	3	5.3	614.749	0.2	0.9	4.9	120.765	1.3	5.5	5.2	5.10	6.78
	4	5.3	624.608	1.6	6.6	5.5	121.795	0.9	3.5	5.3	4.98	6.34
1997	1	5.3	639.631	2.4	10.0	6.2	123.746	1.6	6.6	6.3	5.06	6.56
	2	4.9	633.893	-0.9	-3.5	3.3	125.564	1.5	6.0	5.4	5.05	6.70
	3	4.9	647.147	2.1	8.6	5.3	127.773	1.8	7.2	5.8	5.05	6.24
	4	4.7	647.642	0.1	0.3	3.7	129.840	1.6	6.6	6.6	5.09	5.90
1998	1	4.7	660.975	2.1	8.5	3.3	130.368	0.4	1.6	5.4	5.05	5.59
	2	4.4	673.702	1.9	7.9	6.3	131.278	0.7	2.8	4.6	4.98	5.60
	3	4.5	673.331	-0.1	-0.2	4.0	131.681	0.3	1.2	3.1	4.82	5.20
1996	Oct	5.3	208.113	1.0	12.2	6.4	121.157	0.1	1.0	4.9	4.99	6.53
	Nov	5.4	207.844	-0.1	-1.5	5.2	121.907	0.6	7.7	5.3	5.03	6.20
	Dec	5.3	208.651	0.4	4.8	4.9	122.320	0.3	4.1	5.6	4.91	6.30
1997	Jan	5.3	211.170	1.2	15.5	6.4	122.986	0.5	6.7	6.4	5.03	6.58
	Feb	5.3	213.945	1.3	17.0	6.2	123.895	0.7	9.2	5.9	5.01	6.42
	Mar	5.2	214.516	0.3	3.3	5.9	124.356	0.4	4.6	6.5	5.14	6.69
	Apr	5.0	211.018	-1.6	-17.9	3.6	125.113	0.6	7.6	5.8	5.16	6.89
	May	4.8	210.532	-0.2	-2.7	2.4	125.460	0.3	3.4	5.2	5.05	6.71
	Jun	5.0	212.343	0.9	10.8	4.0	126.119	0.5	6.5	5.1	4.93	6.49
	Jul	4.9	214.935	1.2	15.7	5.2	127.031	0.7	9.0	5.6	5.05	6.22
	Aug	4.9	216.391	0.7	8.4	5.9	127.819	0.6	7.7	5.7	5.14	6.30
	Sep	4.9	215.821	-0.3	-3.1	4.7	128.468	0.5	6.3	6.1	4.95	6.21
	Oct	4.8	214.861	-0.4	-5.2	3.2	129.296	0.6	8.0	6.7	4.97	6.03
	Nov	4.6	215.914	0.5	6.0	3.9	129.899	0.5	5.7	6.6	5.14	5.87
	Dec	4.7	216.867	0.4	5.4	3.9	130.325	0.3	4.0	6.5	5.16	5.81
1998	Jan	4.7	219.004	1.0	12.5	3.7	130.270	-0.0	-0.5	5.9	5.04	5.54
	Feb	4.6	220.866	0.9	10.7	3.2	130.150	-0.1	-1.1	5.0	5.09	5.57
	Mar	4.7	221.105	0.1	1.3	3.1	130.684	0.4	5.0	5.1	5.03	5.65
	Apr	4.3	222.707	0.7	9.0	5.5	131.331	0.5	6.1	5.0	4.95	5.64
	May	4.3	225.370	1.2	15.3	7.0	131.861	0.4	5.0	5.1	5.00	5.65
	Jun	4.5	225.625	0.1	1.4	6.3	130.642	-0.9	-10.5	3.6	4.98	5.50
	Jul	4.5	224.153	-0.7	-7.6	4.3	130.479	-0.1	-1.5	2.7	4.96	5.46
	Aug	4.5	224.296	0.1	0.8	3.7	132.520	1.6	20.5	3.7	4.90	5.34
	Sep	4.6	224.882	0.3	3.2	4.2	132.045	-0.4	-4.2	2.8	4.61	4.81
	Oct	4.6	227.145	1.0	12.8	5.7	132.041	-0.0	-0.0	2.1	3.96	4.53

National Economic Trends

	Consumer Price Index					Consumer Price Index less Food and Energy					Producer Price Index Finished Goods				
	Index	Percent change				Index	Percent change				Index	Percent change			
		Monthly/ quarterly	Annual rate	Year ago	Year to date		Monthly/ quarterly	Annual rate	Year ago	Year to date		Monthly/ quarterly	Annual rate	Year ago	
1993	144.6			3.0		152.4			3.3		124.7			1.2	
1994	148.3			2.6		156.7			2.8		125.5			0.6	
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	
1996	1	155.1	0.8	3.2	2.8	3.2	164.2	0.7	2.6	2.9	2.6	129.9	0.9	3.8	2.2
	2	156.5	0.9	3.7	2.9	3.5	165.2	0.6	2.5	2.7	2.5	131.1	0.9	3.7	2.5
	3	157.5	0.6	2.4	2.9	3.1	166.3	0.7	2.7	2.7	2.6	131.5	0.3	1.2	2.8
	4	158.8	0.8	3.3	3.2	3.2	167.4	0.6	2.6	2.6	2.6	132.6	0.8	3.3	3.0
1997	1	159.6	0.5	2.2	2.9	2.2	168.3	0.5	2.2	2.5	2.2	132.7	0.1	0.2	2.1
	2	160.2	0.3	1.3	2.3	1.8	169.4	0.7	2.7	2.5	2.4	131.7	-0.8	-3.0	0.4
	3	160.9	0.5	1.9	2.2	1.8	170.2	0.4	1.7	2.3	2.2	131.4	-0.2	-0.8	-0.1
	4	161.8	0.5	2.1	1.9	1.9	171.1	0.5	2.1	2.2	2.2	131.6	0.2	0.6	-0.8
1998	1	162.0	0.1	0.5	1.5	0.5	172.1	0.6	2.4	2.3	2.4	130.5	-0.8	-3.3	-1.6
	2	162.8	0.5	2.0	1.6	1.2	173.2	0.7	2.7	2.2	2.5	130.6	0.1	0.3	-0.8
	3	163.5	0.5	1.8	1.6	1.4	174.2	0.5	2.2	2.4	2.4	130.5	-0.1	-0.3	-0.7
1996	Oct	158.3	0.3	3.9	3.0	3.3	167.1	0.2	2.9	2.6	2.7	132.3	0.4	4.6	3.1
	Nov	158.8	0.3	3.9	3.2	3.3	167.4	0.2	2.2	2.6	2.7	132.5	0.2	1.8	3.0
	Dec	159.2	0.3	3.1	3.3	3.3	167.7	0.2	2.2	2.6	2.6	133.0	0.4	4.6	2.9
1997	Jan	159.4	0.1	1.5	3.0	1.5	168.0	0.2	2.2	2.5	2.2	133.0	0.0	0.0	2.5
	Feb	159.7	0.2	2.3	3.0	1.9	168.3	0.2	2.2	2.5	2.2	132.6	-0.3	-3.5	2.2
	Mar	159.8	0.1	0.8	2.7	1.5	168.6	0.2	2.2	2.4	2.2	132.4	-0.2	-1.8	1.5
	Apr	160.0	0.1	1.5	2.4	1.5	169.2	0.4	4.4	2.6	2.7	131.9	-0.4	-4.4	0.8
	May	160.1	0.1	0.8	2.2	1.4	169.4	0.1	1.4	2.5	2.5	131.7	-0.2	-1.8	0.5
	Jun	160.4	0.2	2.3	2.3	1.5	169.7	0.2	2.1	2.5	2.4	131.4	-0.2	-2.7	0.0
	Jul	160.6	0.1	1.5	2.2	1.5	170.0	0.2	2.1	2.4	2.4	131.1	-0.2	-2.7	-0.2
	Aug	160.9	0.2	2.3	2.2	1.6	170.1	0.1	0.7	2.3	2.2	131.3	0.2	1.8	-0.2
	Sep	161.3	0.2	3.0	2.2	1.8	170.4	0.2	2.1	2.2	2.2	131.8	0.4	4.7	0.0
	Oct	161.6	0.2	2.3	2.1	1.8	170.8	0.2	2.9	2.2	2.2	131.8	0.0	0.0	-0.4
	Nov	161.8	0.1	1.5	1.9	1.8	171.0	0.1	1.4	2.2	2.1	131.6	-0.2	-1.8	-0.7
	Dec	161.9	0.1	0.7	1.7	1.7	171.4	0.2	2.8	2.2	2.2	131.4	-0.2	-1.8	-1.2
1998	Jan	161.9	0.0	0.0	1.6	0.0	171.7	0.2	2.1	2.2	2.1	130.6	-0.6	-7.1	-1.8
	Feb	162.0	0.1	0.7	1.4	0.4	172.2	0.3	3.6	2.3	2.8	130.5	-0.1	-0.9	-1.6
	Mar	162.0	0.0	0.0	1.4	0.2	172.4	0.1	1.4	2.3	2.4	130.4	-0.1	-0.9	-1.5
	Apr	162.4	0.2	3.0	1.5	0.9	172.9	0.3	3.5	2.2	2.6	130.6	0.2	1.9	-1.0
	May	162.9	0.3	3.8	1.7	1.5	173.3	0.2	2.8	2.3	2.7	130.7	0.1	0.9	-0.8
	Jun	163.0	0.1	0.7	1.6	1.4	173.5	0.1	1.4	2.2	2.5	130.5	-0.2	-1.8	-0.7
	Jul	163.3	0.2	2.2	1.7	1.5	173.8	0.2	2.1	2.2	2.4	130.7	0.2	1.9	-0.3
	Aug	163.6	0.2	2.2	1.7	1.6	174.2	0.2	2.8	2.4	2.5	130.2	-0.4	-4.5	-0.8
	Sep	163.6	0.0	0.0	1.4	1.4	174.5	0.2	2.1	2.4	2.4	130.6	0.3	3.7	-0.9
	Oct	164.0	0.2	3.0	1.5	1.6	174.8	0.2	2.1	2.3	2.4	130.9	0.2	2.8	-0.7

Notes

Pages 4, 5: **Final sales** is gross domestic product (GDP) minus change in business 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. 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: The **contribution** of a component X_t to the overall GDP growth rate in quarter t is $100 \times [(1 + (X_t - X_{t-1})/GDP_{t-1})^4 - 1]$. The sign is changed for **imports**. This calculation forces components to add up to the GDP growth rate before compounding and does not exactly match *Survey of Current Business*, Table 8.2. The **residual line** is calculated using the finest level of detail in the table.

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 non-farm 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 1997 affect levels and growth rates of household survey employment, labor force and population. The unemployment rate and other ratios are 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 household survey was 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. Other changes in the survey are detailed in Bureau of Labor Statistics, *Employment and Earnings*, Appendix A.

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.

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 National Income

and Product Accounts (NIPA). 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 $\%(C)$ 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. **Multifactor productivity** estimates changes in output that do not correspond to changes in quantities of labor, capital, or intermediate inputs. **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, total factor 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)

Federal Reserve Bank of St. Louis
Post Office Box 442
St. Louis, Missouri 63166

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