

National Economic Trends



Improving Production Management

Manufacturers can be loosely categorized into two groups: those that produce to order and those that produce to stock (in anticipation of demand). In reality the distinction is blurry—some firms may do both. A firm that produces to order may keep an inventory of work-in-process that they complete to fill orders. Conceptually, a “just-in-time” producer neither holds inventory nor backlogs orders, but instead adjusts production “automatically” with demand.

Because the production process takes time, firms rely on forecasts of demand to determine production plans. The accuracy of those forecasts will determine how much undesirable variation there is in the production schedule, with firms adjusting production if they realize their forecasts are wrong.

The amount of unfilled orders or inventory relative to sales measures the possible mismatch between production and sales. A firm that produces to order will monitor the backlog of unfilled orders, while a firm that produces to stock will monitor the level of inventory. If unfilled orders rise above some desired level, or inventories fall below some desired level, production is sped up by increasing overtime, adding new shifts or even adding new capacity. If the reverse occurs, production is slowed down. If the miscalculation is large enough, this might even result in temporary layoffs.

As innovations in information technology become more comprehensively incorporated into the economy, one would expect that both the forecasting capabilities and the production management process will improve. Retailers will get better information about the market, and improved communication with suppliers should reduce unwanted inventory, improve delivery times and reduce backlogged orders. Even if not all firms adopt “just-in-time” production, we should observe an improvement in the management of production.

At the manufacturing stage, both unfilled orders and inventory as ratios to monthly shipments have fallen since the 1990-91 recession (see chart) and are now at historical lows. The ratio of manufacturing unfilled orders to monthly shipments has fallen from 2.31 in March 1991 to 1.61 in December 1997. The ratio of manufacturing inventory to monthly shipments fell from 1.75 in March 1991 to 1.35 by December 1997. This suggests that the production process is becoming more streamlined, and supports anecdotal evidence that firms are using information technology to improve production management. A lower level of unfilled orders indicates faster response of manufacturers who produce to order, and a lower level of inventory to sales indicates either better forecasts or improved inventory management. Errors in predicting demand are thought to be partly responsible for most post-war recessions. Improved production management will not only free up resources that would otherwise be tied up in inventory, but may even help reduce swings in the economy.

—Donald S. Allen



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 March 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:

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

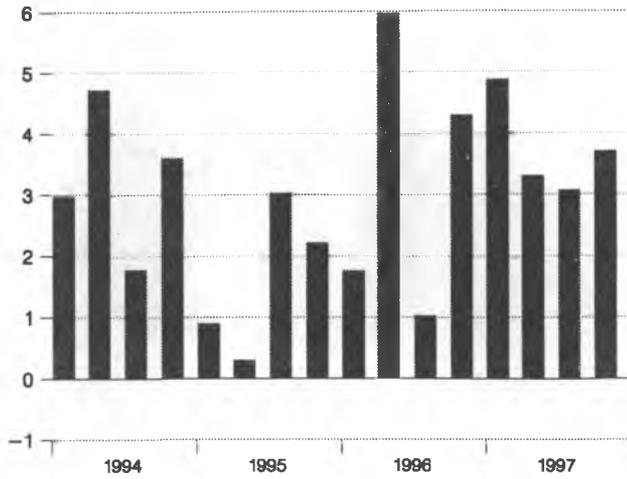
For monthly data replace 4 with 12.

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

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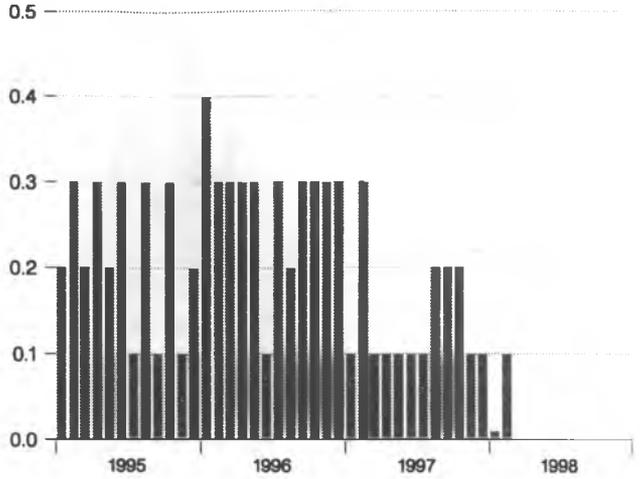
Real GDP Growth

Percent change at annual rate



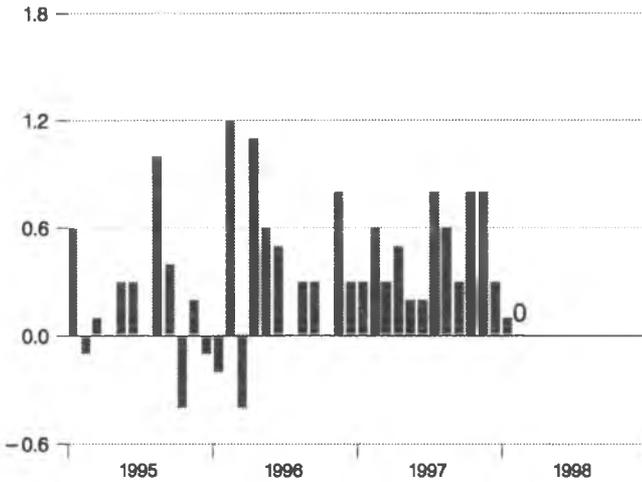
Consumer Price Index

Percent change



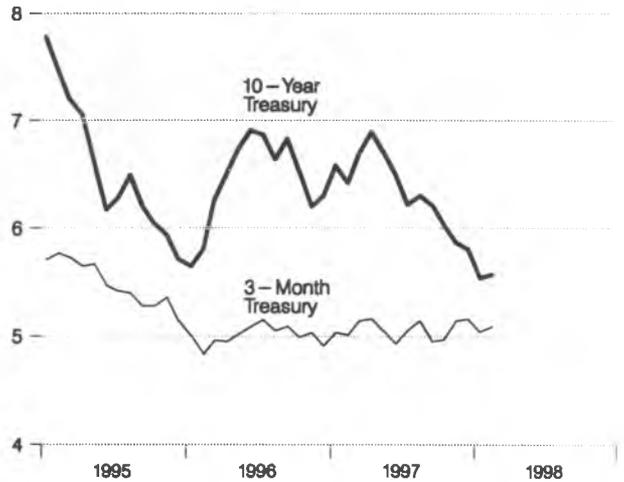
Industrial Production

Percent change



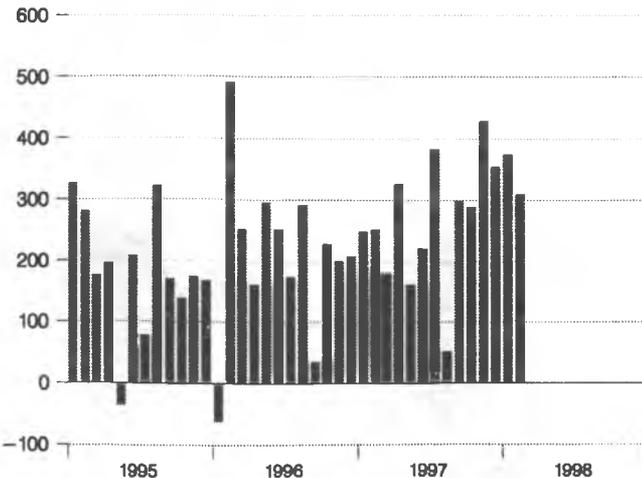
Interest Rates

Percent



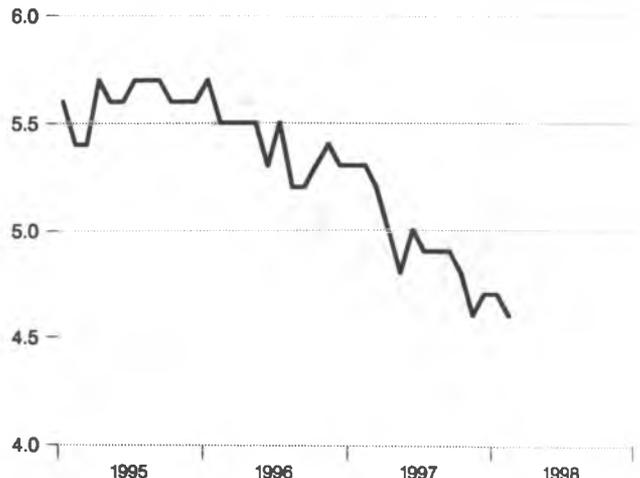
Change in Nonfarm Payrolls

Thousands



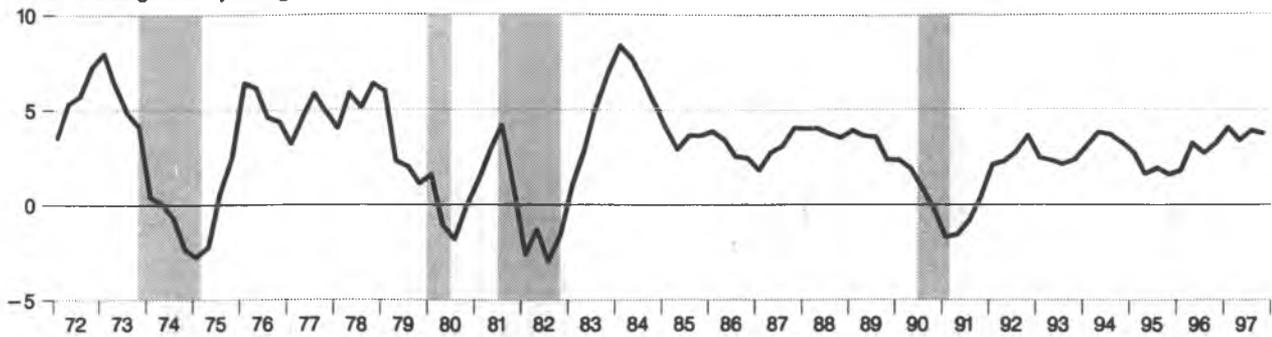
Unemployment Rate

Percent of labor force



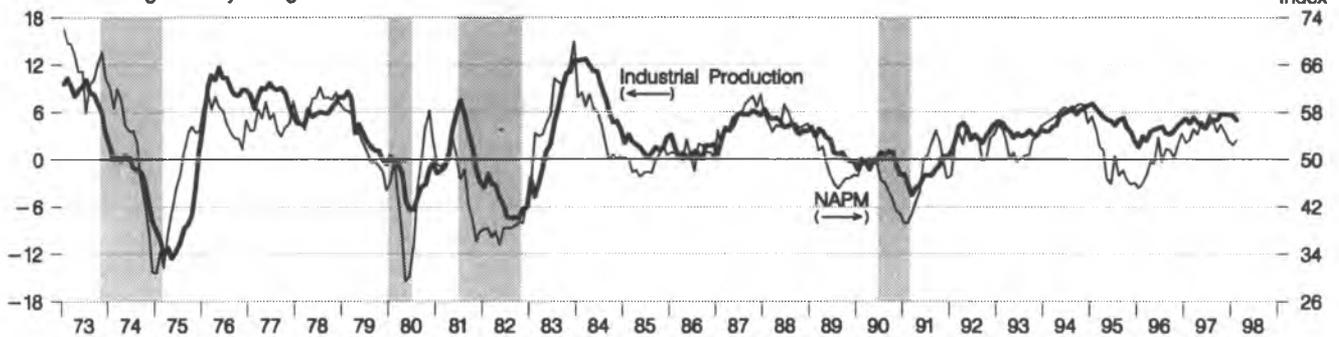
Real Gross Domestic Product

Percent change from year ago



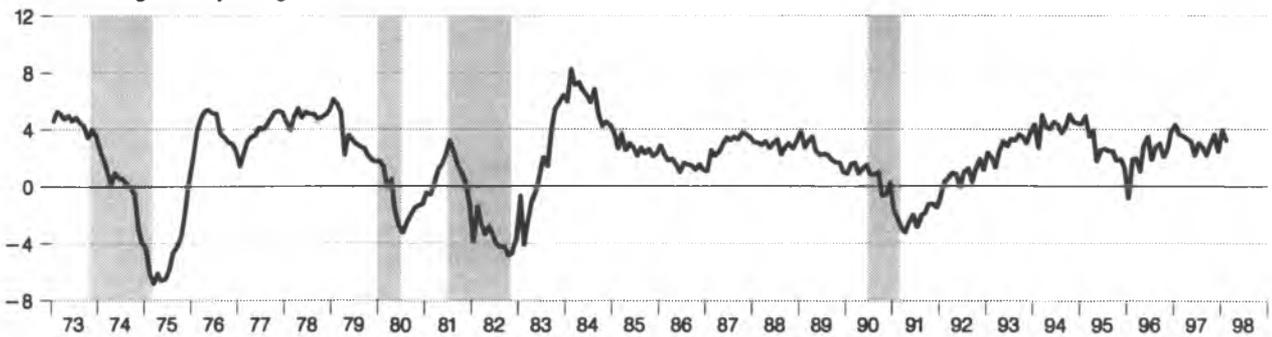
Industrial Production and Purchasing Managers' (NAPM) Indexes

Percent change from year ago



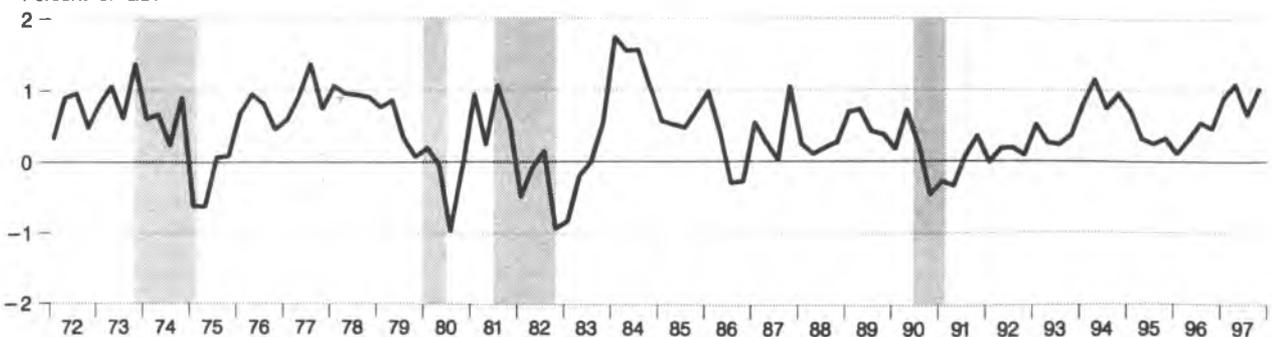
Aggregate Private Nonfarm Hours

Percent change from year ago



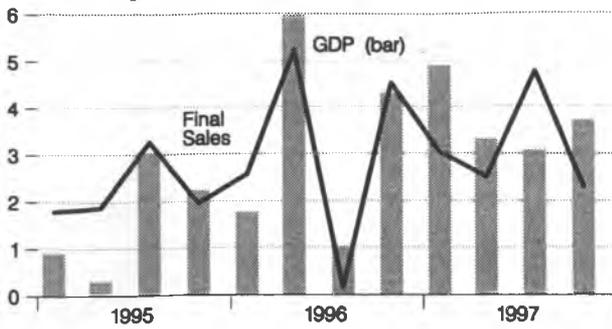
Real Change in Business Inventories

Percent of GDP



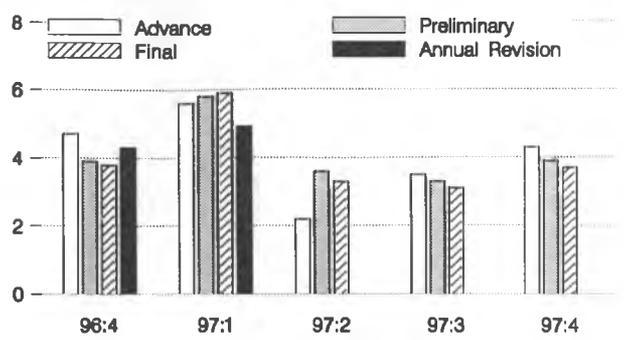
Real Final Sales and GDP

Percent change at annual rate



Real GDP Revisions

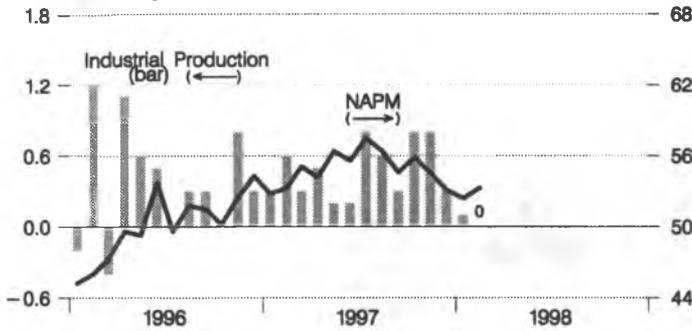
Percent change at annual rate



Industrial Production and NAPM Index

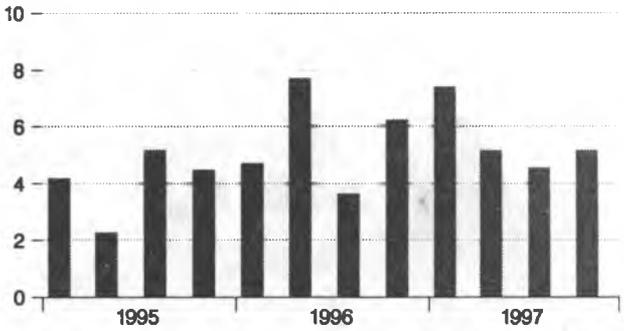
Percent change

Index



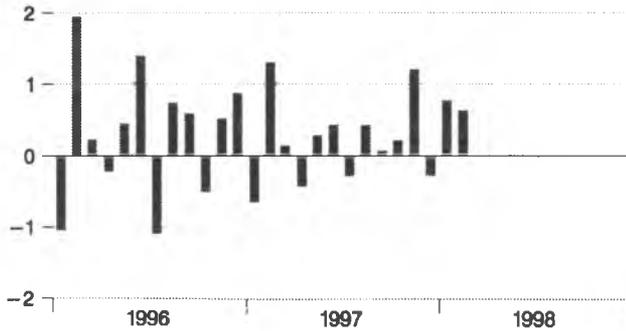
Nominal Gross Domestic Product

Percent change at annual rate



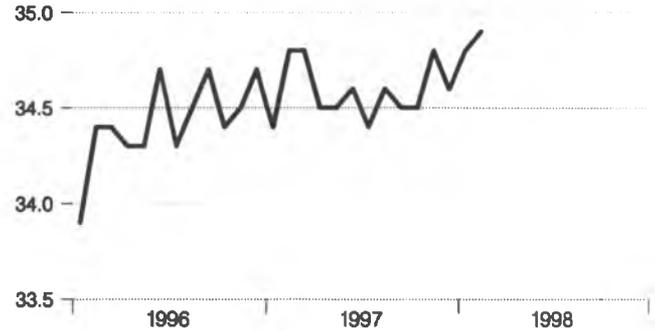
Aggregate Private Nonfarm Hours

Percent change



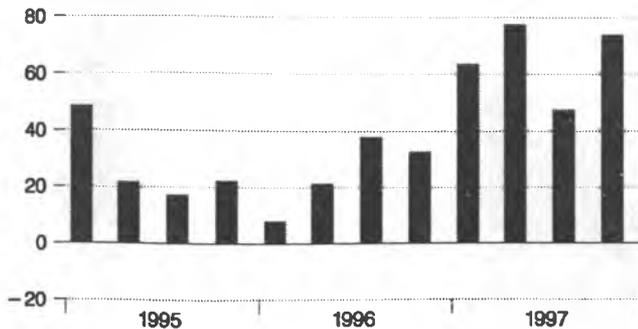
Average Weekly Private Nonfarm Hours

Hours



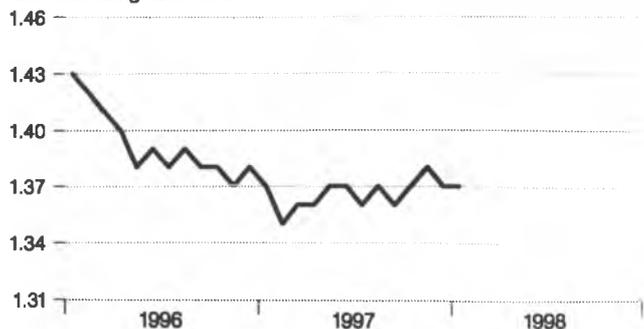
Real Change in Business Inventories

Billions of 1992 dollars



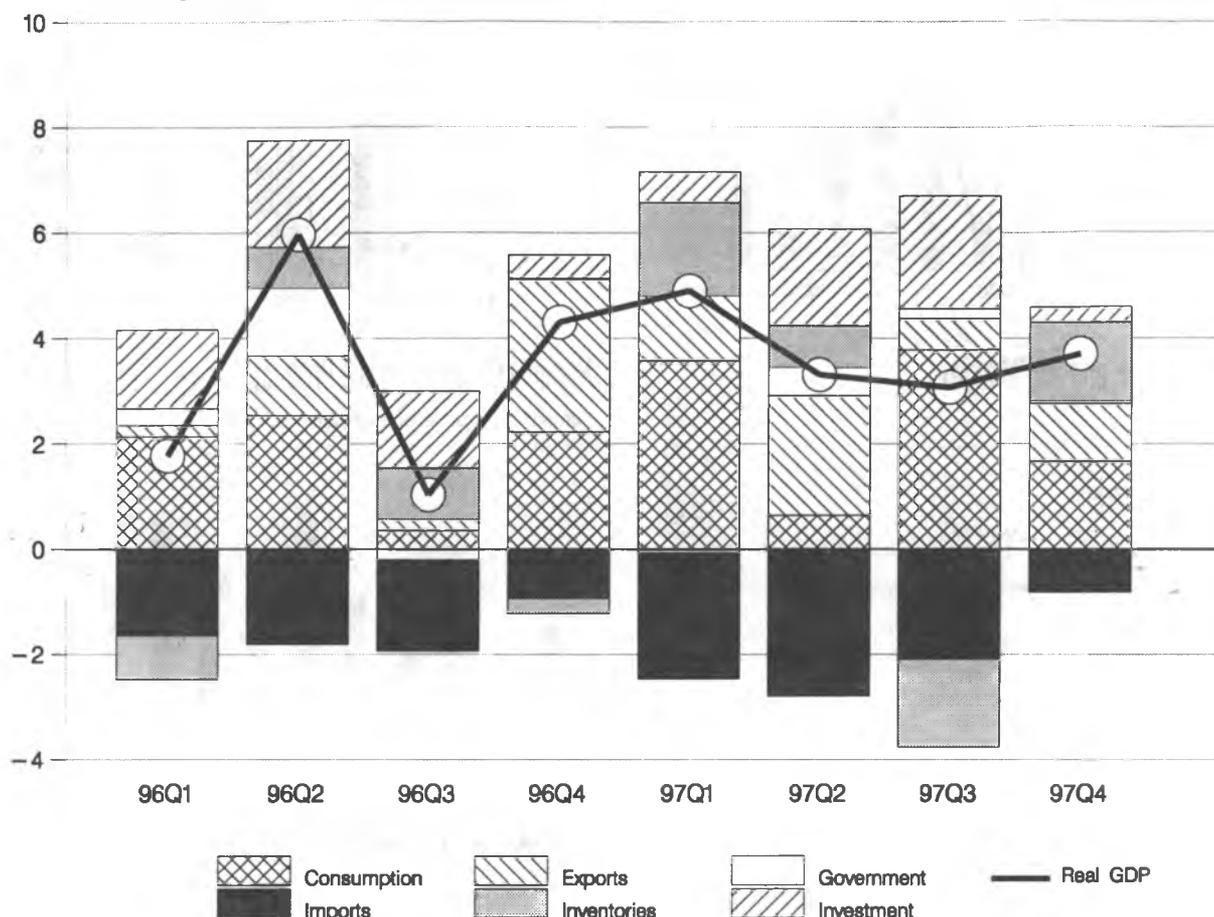
Inventory-Sales Ratio

Manufacturing and trade



Contribution of Components to Real GDP Growth

Percent change at annual rate



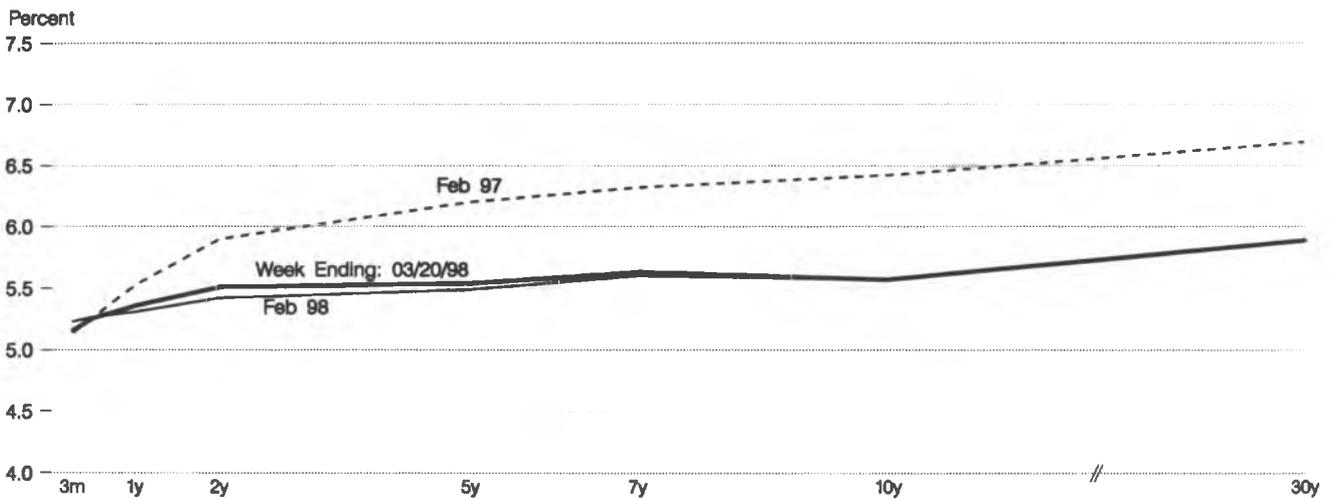
Contributions to Real GDP Growth Rate

	1996				1997			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Real GDP	1.77	5.97	1.03	4.31	4.89	3.31	3.07	3.71
Final Sales	2.56	5.22	0.16	4.49	3.02	2.48	4.69	2.28
Change in Inventory	-0.83	0.78	0.96	-0.29	1.76	0.79	-1.67	1.48
Consumption	2.13	2.53	0.35	2.22	3.56	0.64	3.78	1.67
Fixed Investment	1.49	2.02	1.46	0.45	0.59	1.84	2.13	0.29
Nonresidential	1.19	1.34	1.72	0.66	0.47	1.59	2.11	-0.10
Residential	0.31	0.66	-0.18	-0.17	0.13	0.28	0.10	0.34
Government	0.32	1.29	-0.20	0.02	-0.08	0.54	0.19	0.05
Federal	0.49	0.58	-0.29	-0.35	-0.38	0.41	-0.07	-0.15
State and Local	-0.16	0.71	0.08	0.37	0.31	0.13	0.26	0.20
Net Exports	-1.44	-0.69	-1.51	1.93	-1.18	-0.58	-1.53	0.27
Exports	0.21	1.13	0.23	2.89	1.24	2.26	0.59	1.09
Imports	-1.65	-1.81	-1.73	-0.94	-2.39	-2.80	-2.11	-0.81
Residual	0.11	-0.03	-0.08	-0.10	0.20	0.02	0.14	-0.04

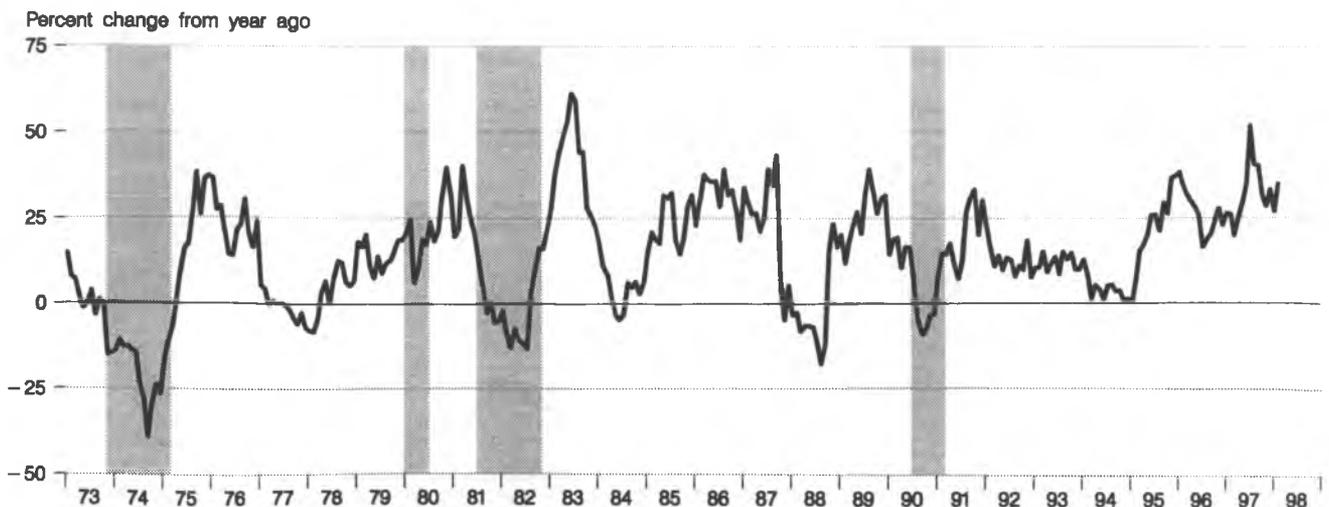
Interest Rates



Treasury Yield Curve

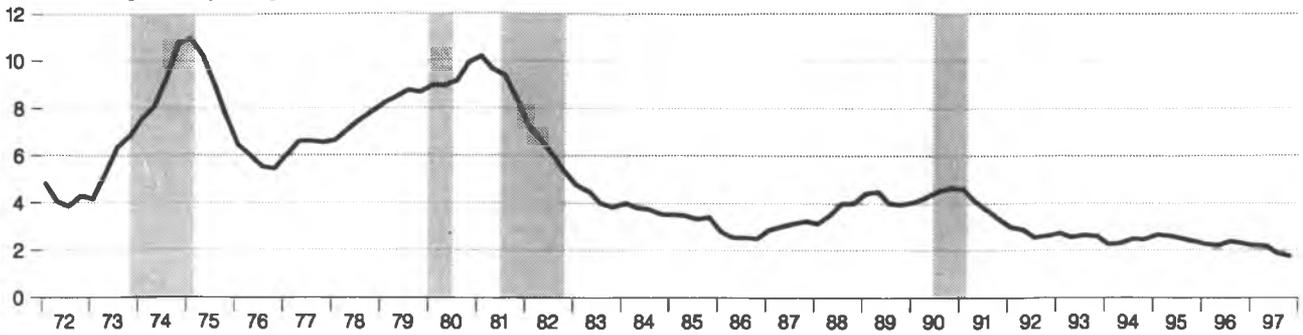


Total Return on Standard and Poor's 500



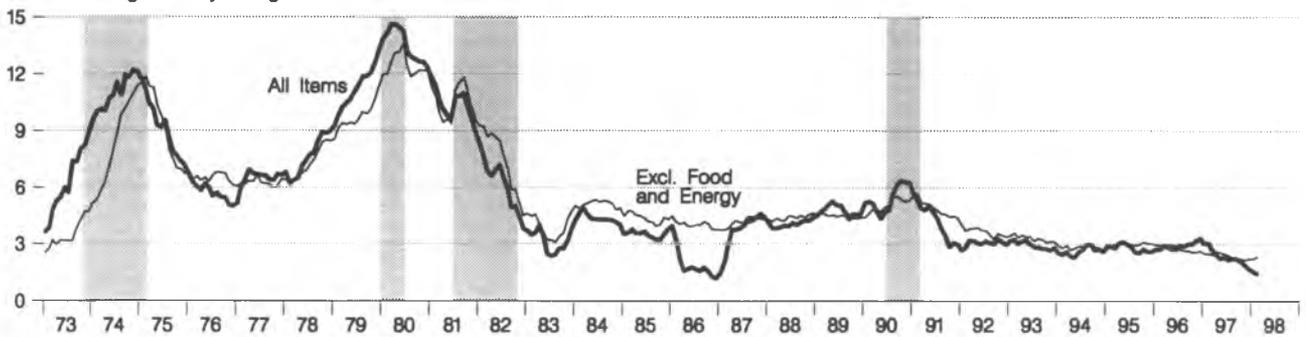
GDP Chain Price Index

Percent change from year ago



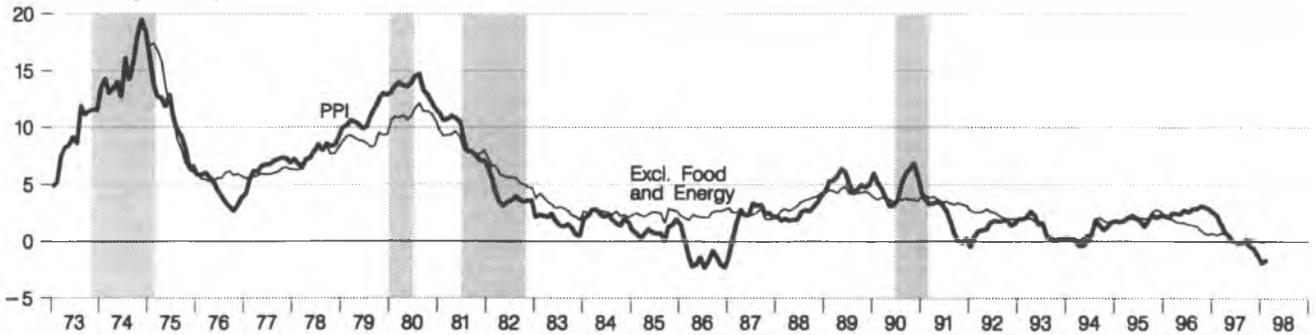
Consumer Price Index

Percent change from year ago



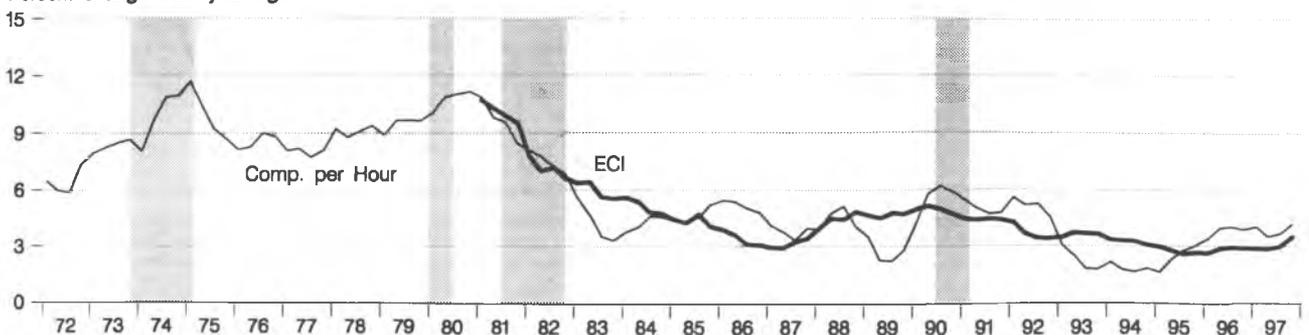
Producer Price Index, Finished Goods

Percent change from year ago



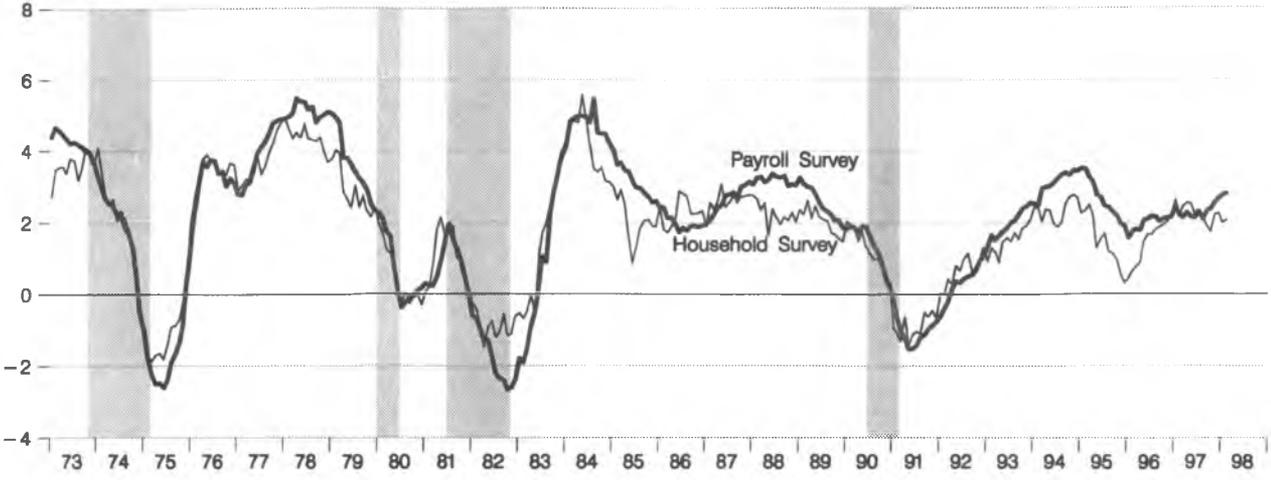
Employment Cost Index and Compensation per Hour

Percent change from year ago



Employment

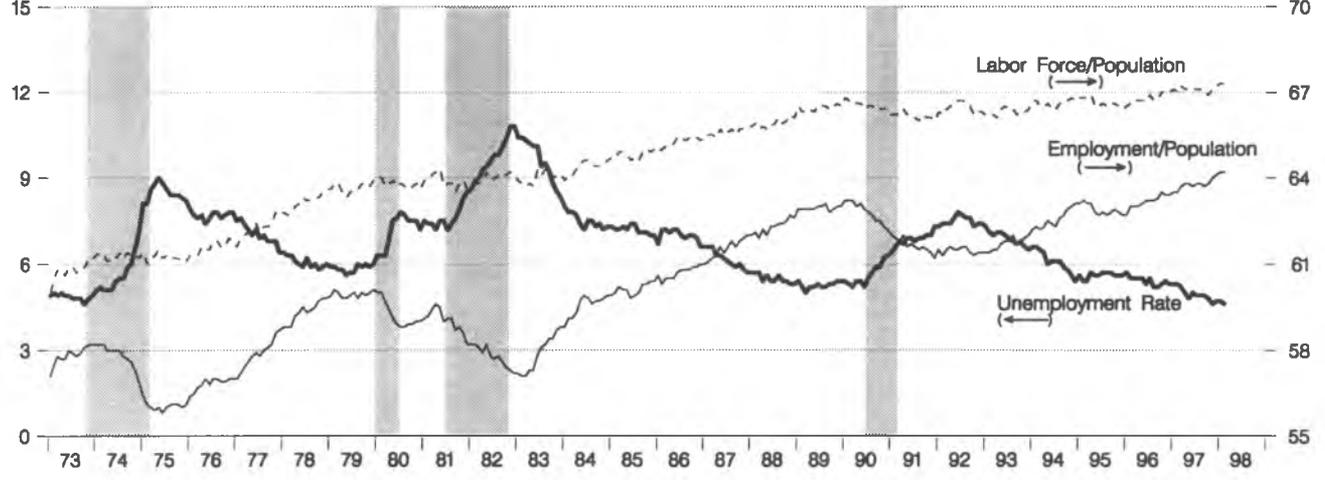
Percent change from year ago



Unemployment, Labor Force Participation and Employment Rates

Percent of labor force

Percent of population



Duration of Unemployment

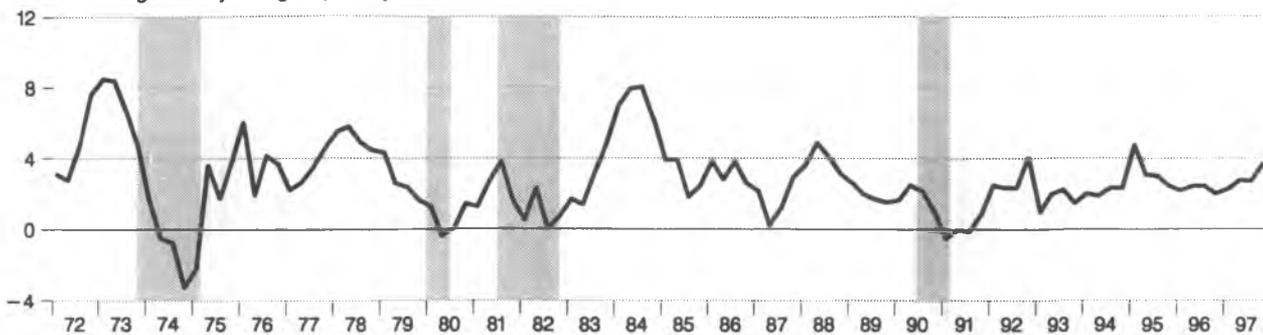
Percent of labor force

Weeks



Real Disposable Income

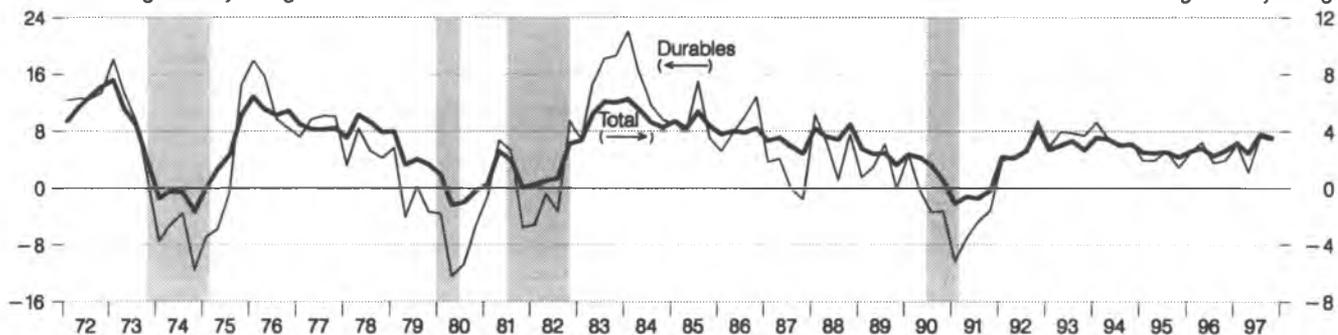
Percent change from year ago, quarterly data



Real Consumption

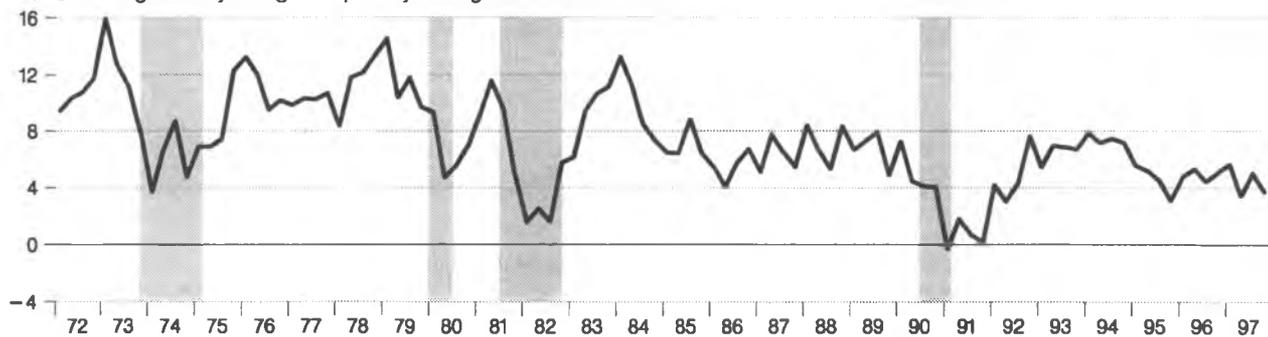
Percent change from year ago

Percent change from year ago



Retail Sales

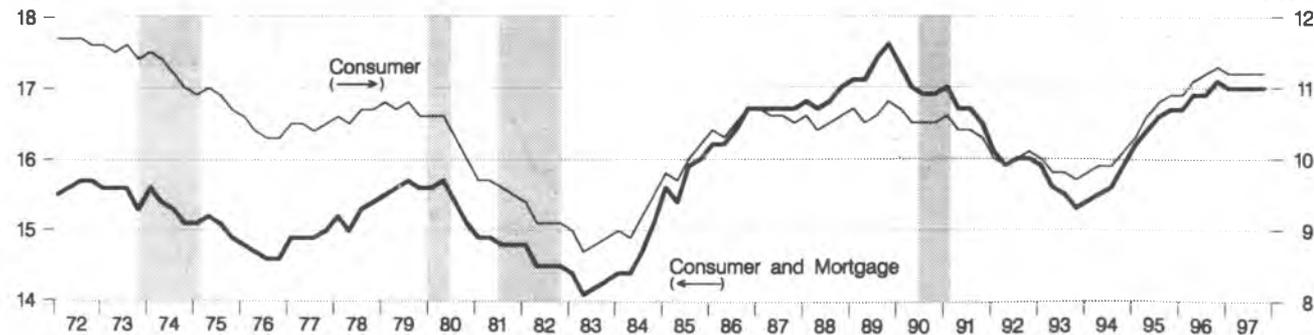
Percent change from year ago of quarterly average



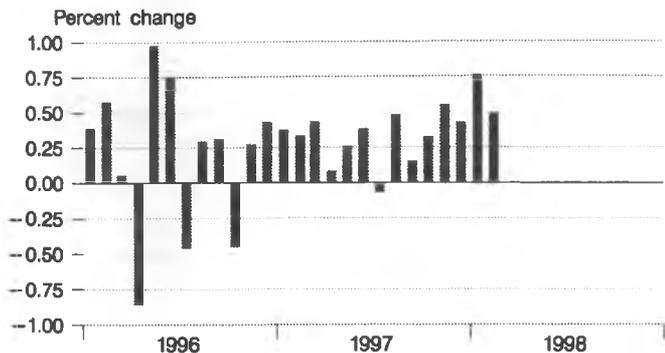
Debt Service as Percent of Disposable Income

Percent

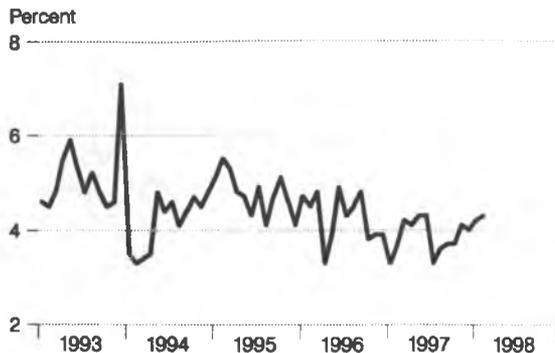
Percent



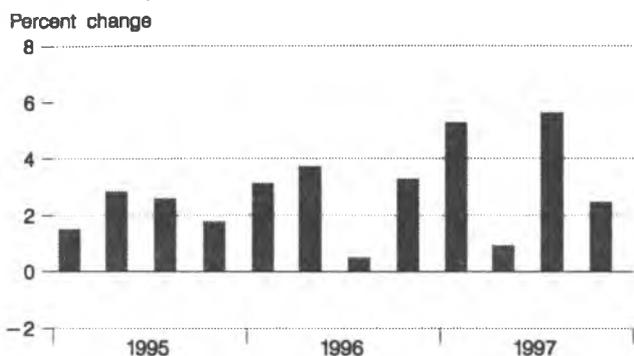
Real Disposable Income



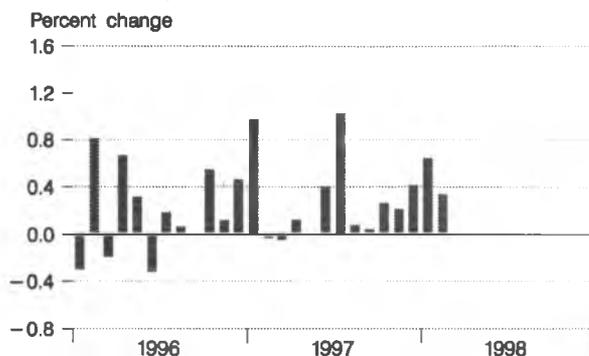
Personal Saving Rate



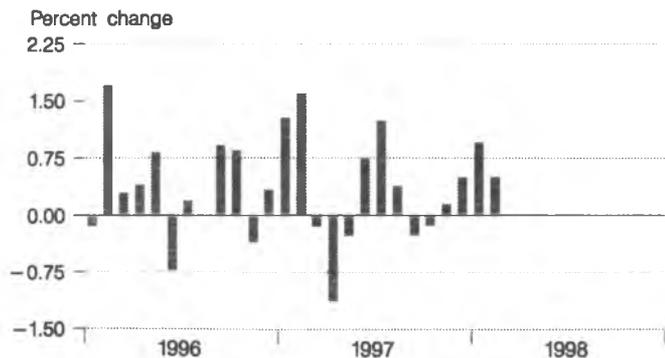
Real Consumption



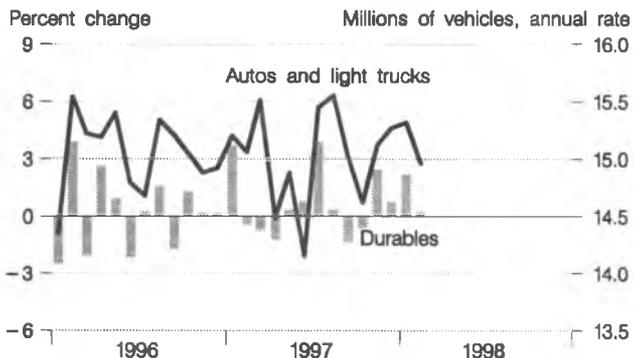
Real Consumption



Retail Sales



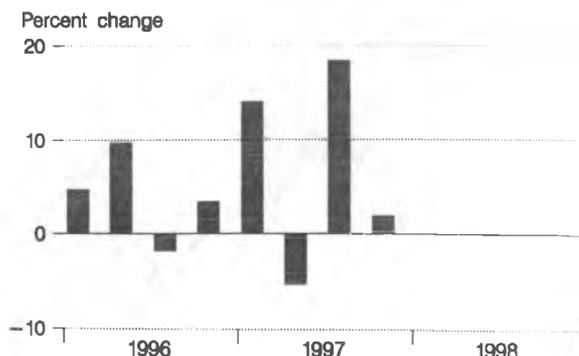
Real Durables Consumption and Vehicle Sales



Consumer Sentiment (U. of Michigan)

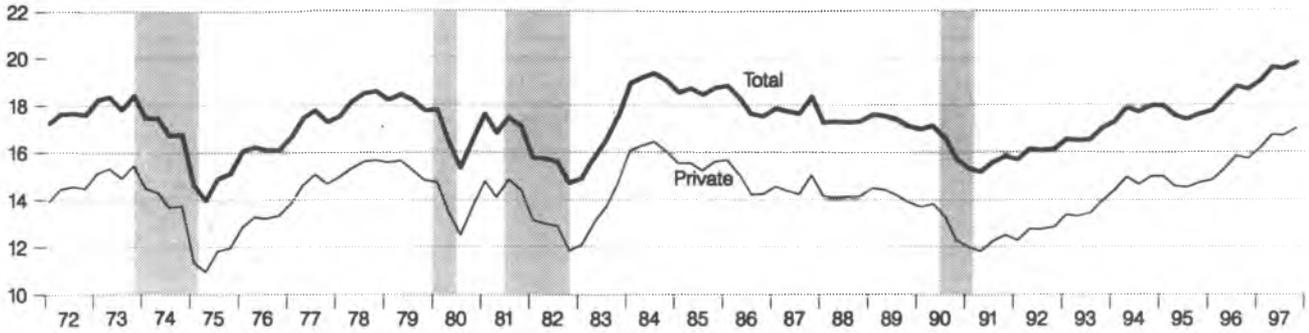


Real Durables Consumption



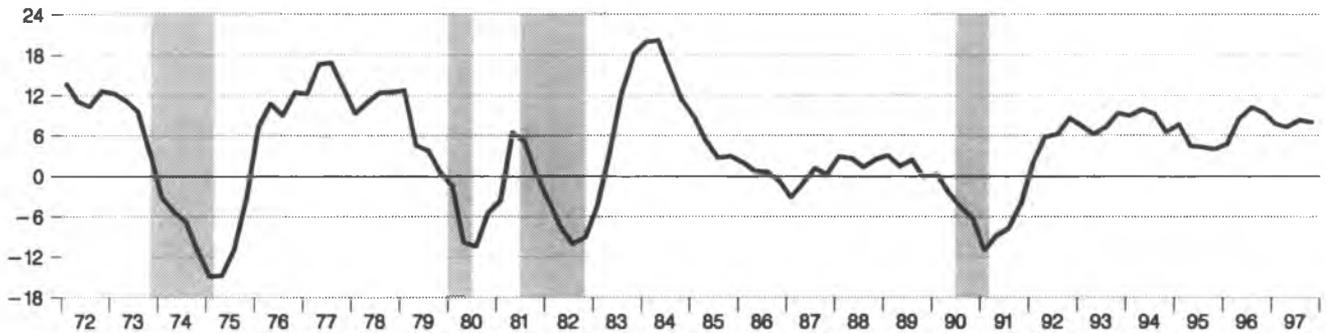
Real Investment

Percent of GDP



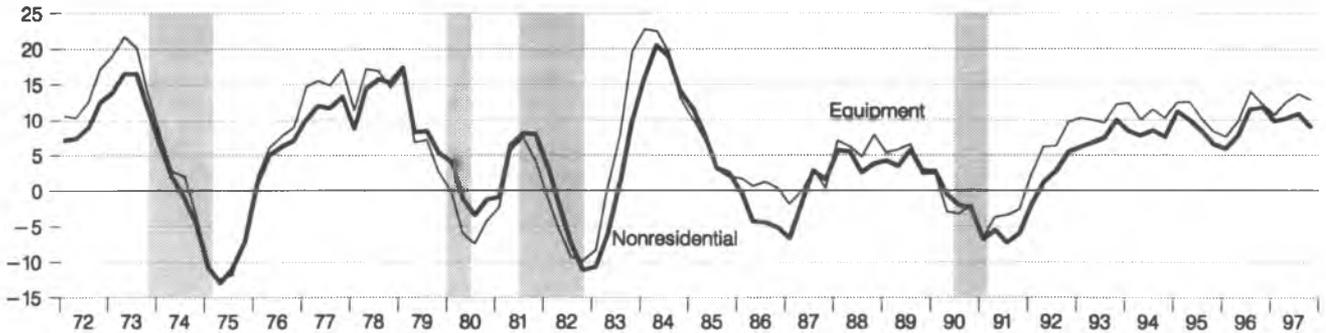
Real Private Fixed Investment

Percent change from year ago



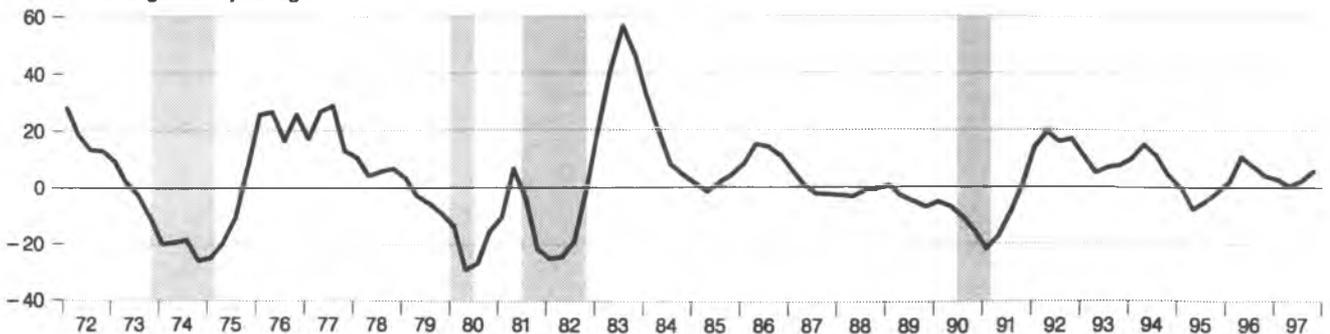
Real Nonresidential and Producers Durable Equipment Investment

Percent change from year ago

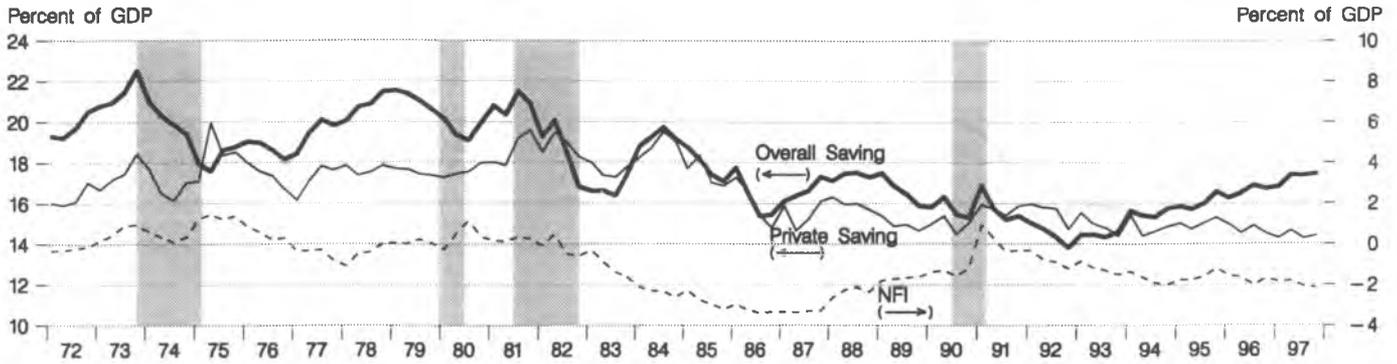


Real Residential Investment

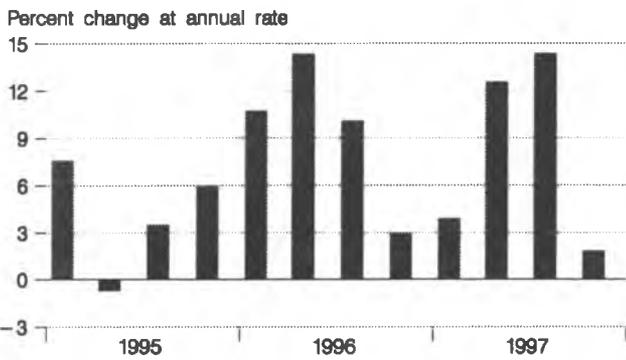
Percent change from year ago



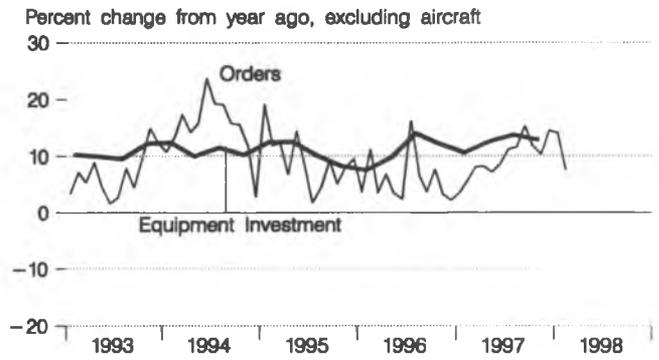
Gross Saving Rates and Net Foreign Investment



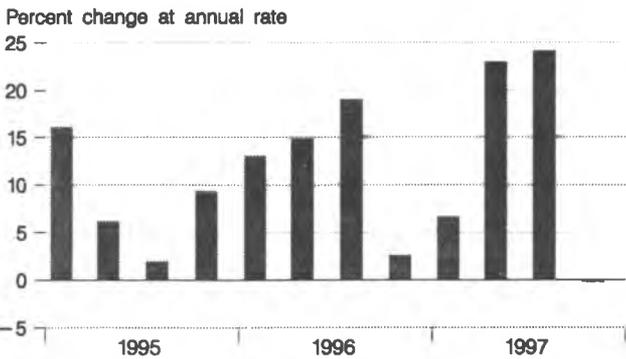
Real Private Fixed Investment



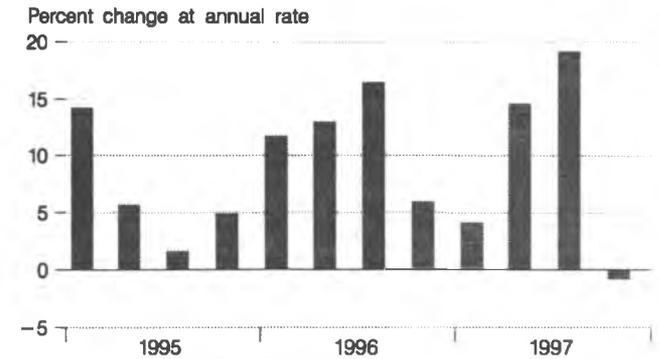
Nondefense Capital Goods Orders



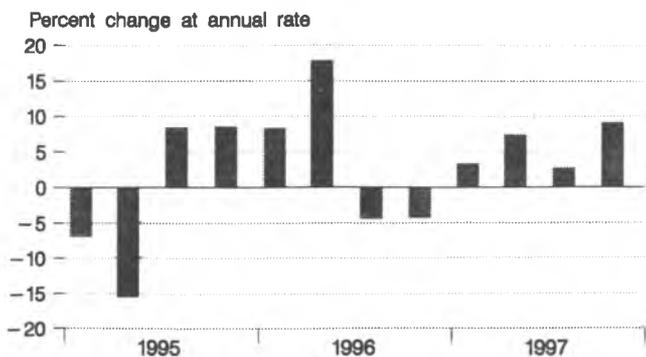
Real Equipment Investment



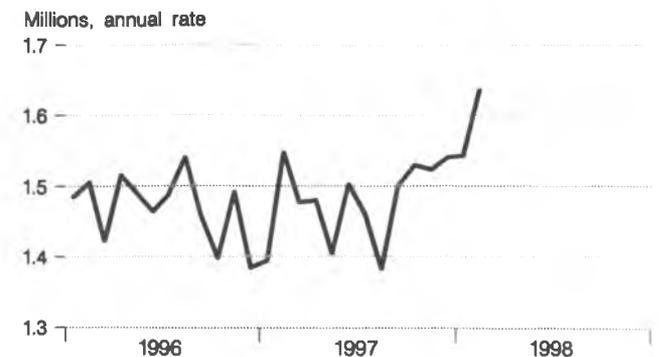
Real Nonresidential Investment



Real Residential Investment



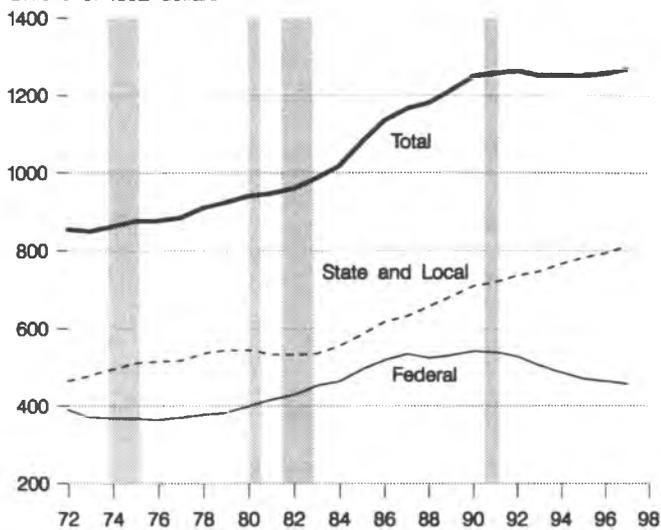
Housing Starts



National Economic Trends

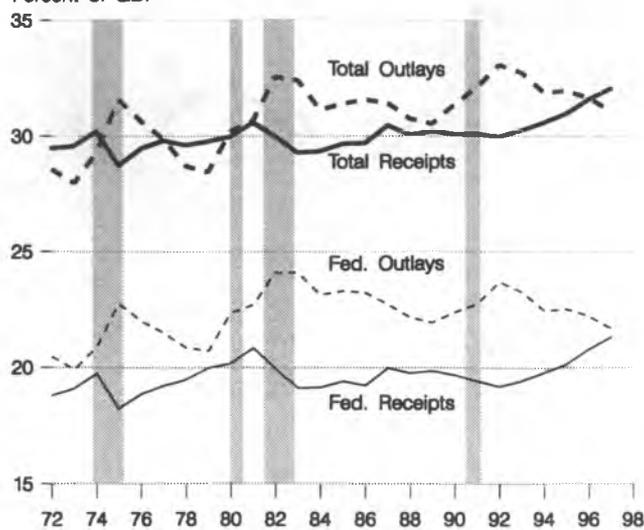
Govt. Consumption and Investment

Billions of 1992 dollars



Government Receipts and Outlays

Percent of GDP



Government Budgets

Billions of dollars

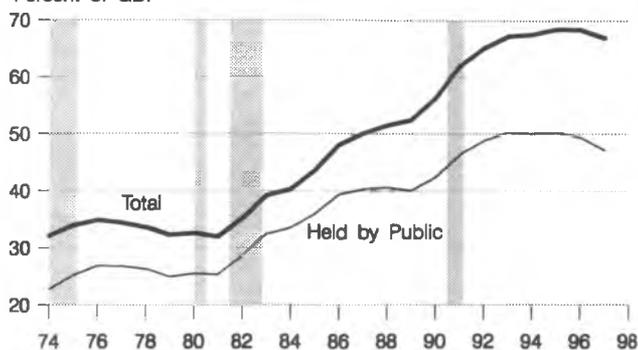
National Income Accounts Calendar Years

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	999.0	895.9	103.1	1463.2	1637.6	-174.4	1351.8	1515.7	-163.9
1996	1043.4	938.0	105.4	1587.6	1698.1	-110.5	1453.1	1560.5	-107.5
1997	1090.4	982.6	107.8	1723.4	1752.2	-28.8	1579.3	1601.2	-21.9

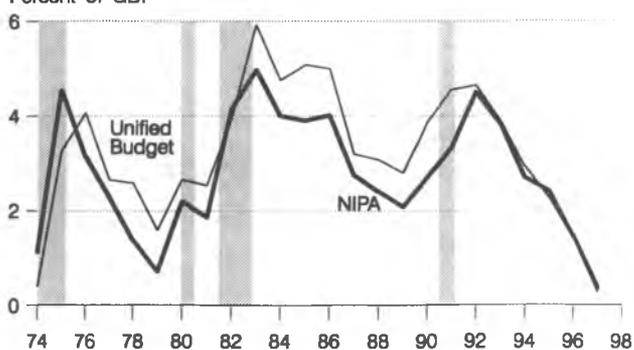
Federal Debt

Percent of GDP



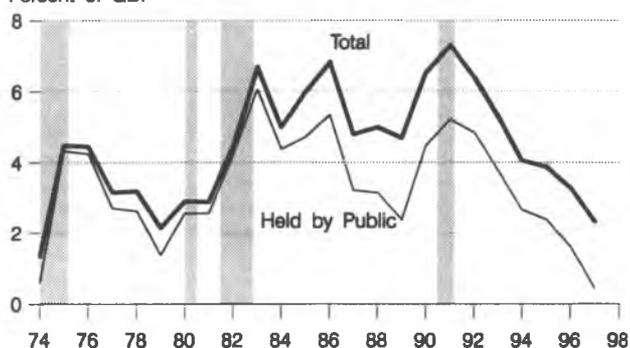
Federal Deficit

Percent of GDP



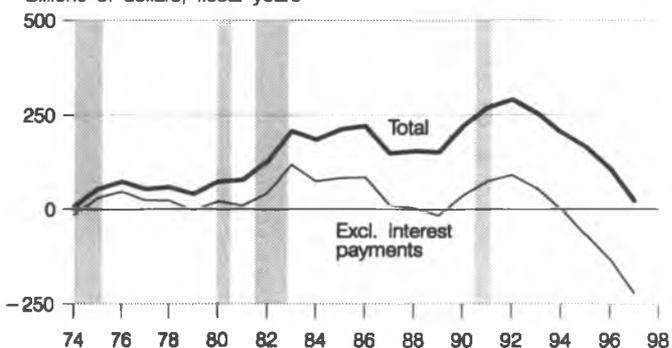
Change in Federal Debt

Percent of GDP



Federal Deficit, Unified Basis

Billions of dollars, fiscal years

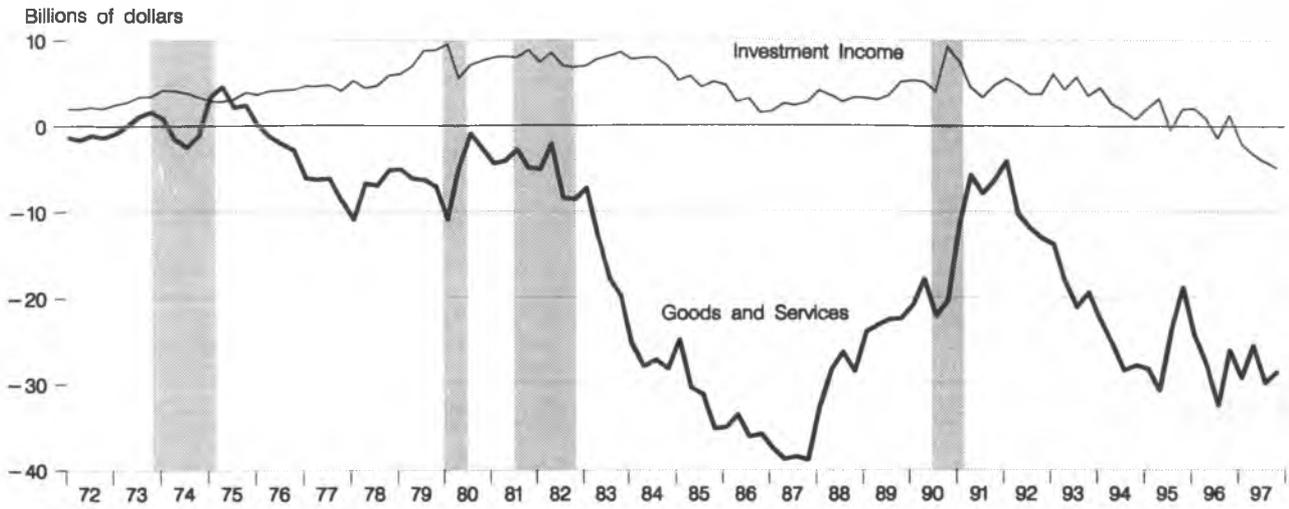


Federal Government Debt

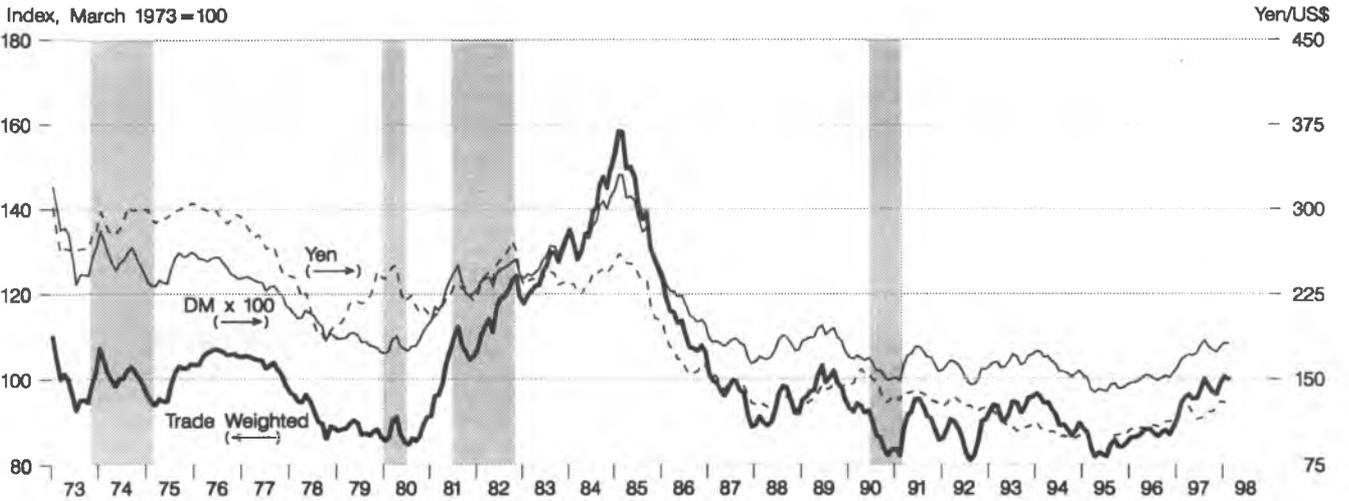
Billions of dollars, end of month or fiscal year, excluding agency-issued debt

	Total Public Debt	Held by Agencies and Trusts	Held by Public		Held by Private Investors	
			Total	Federal Reserve Banks	Total	Foreign and International
1993	4411.5	1116.7	3294.8	325.7	2983.0	591.3
1994	4692.8	1213.1	3479.7	355.2	3127.8	655.8
1995	4974.0	1320.8	3653.2	374.1	3279.5	848.4
1996	5224.8	1447.0	3777.8	390.9	3386.2	1030.9
1997	5413.1	1598.5	3814.7	436.5	3388.9	1292.4
1995						
March	4864.1	1254.7	3609.5	369.3	3239.2	729.2
June	4951.4	1316.6	3634.8	389.0	3245.0	784.2
September	4974.0	1320.8	3653.2	374.1	3279.5	848.4
December	4988.7	1304.5	3684.2	391.0	3294.9	862.2
1996						
March	5117.8	1353.8	3764.0	381.0	3382.8	931.5
June	5161.1	1422.4	3738.6	391.0	3347.3	959.8
September	5224.8	1447.0	3777.8	390.9	3386.2	1030.9
December	5323.2	1497.2	3826.0	410.9	3411.2	1131.8
1997						
March	5380.9	1506.8	3874.1	405.6	3451.7	1215.4
June	5376.2	1571.6	3804.6	426.4	3361.7	1246.9
September	5413.1	1598.5	3814.7	436.5	3388.9	1292.4
December	5502.4	NA	NA	NA	NA	NA

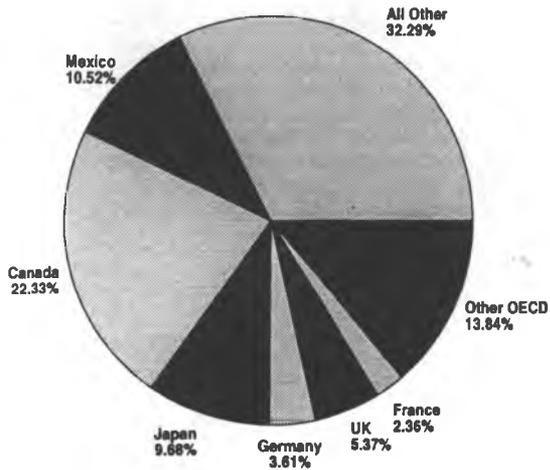
Trade and Investment Income Balances



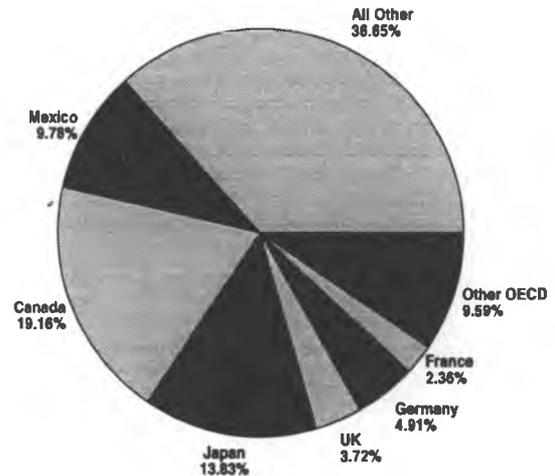
Exchange Rates



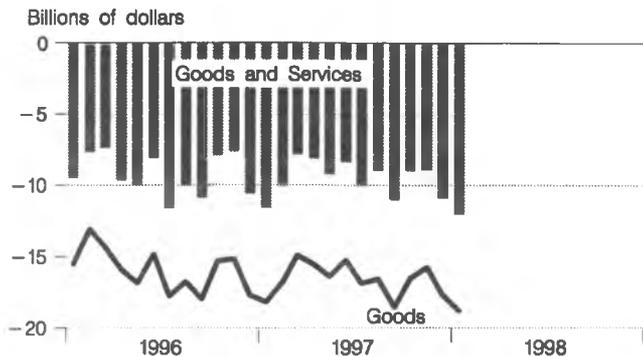
Goods Export Shares, 1997



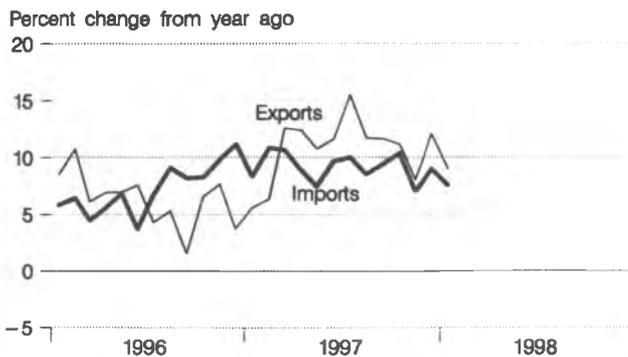
Goods Import Shares, 1997



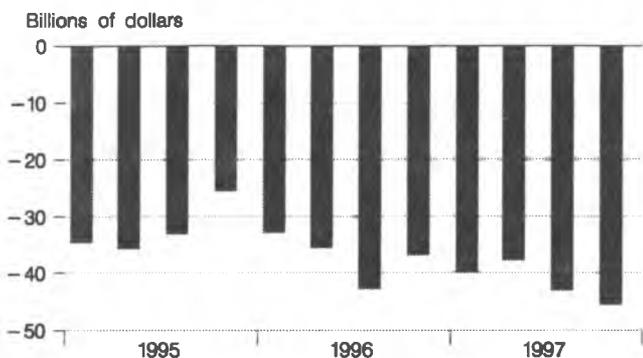
Trade Balance



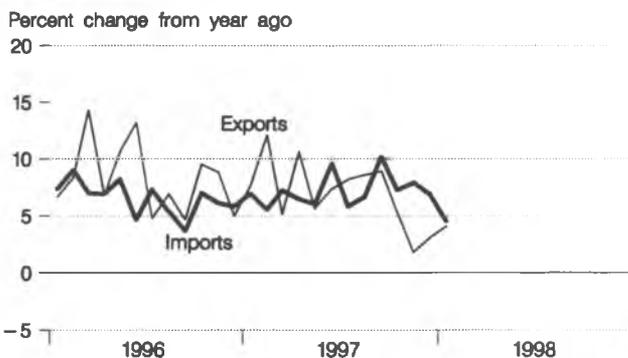
Goods Trade



Current Account Balance



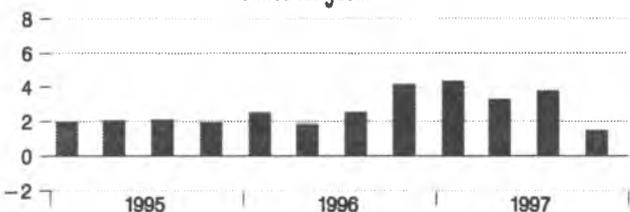
Services Trade



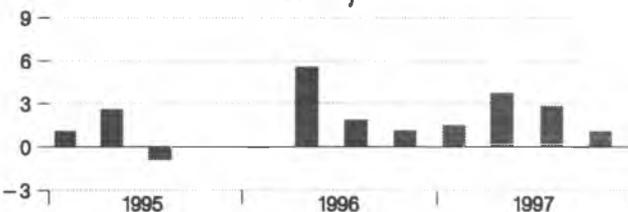
Real GDP Growth of Major Trading Partners

Percent change at annual rate

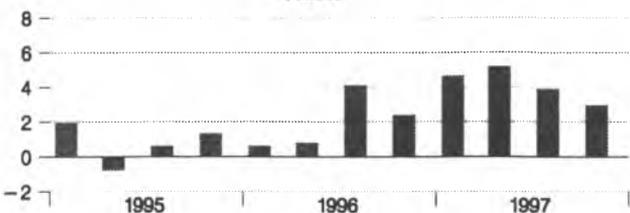
United Kingdom



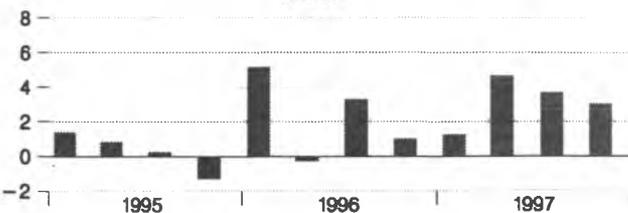
Germany



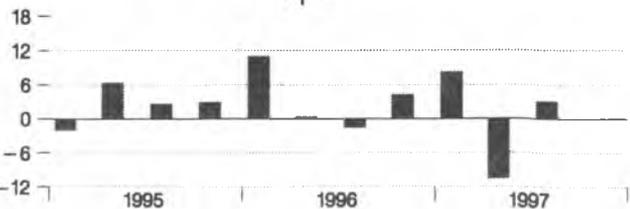
Canada



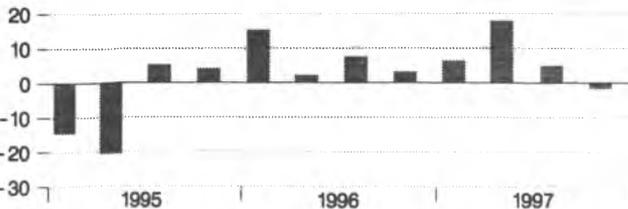
France



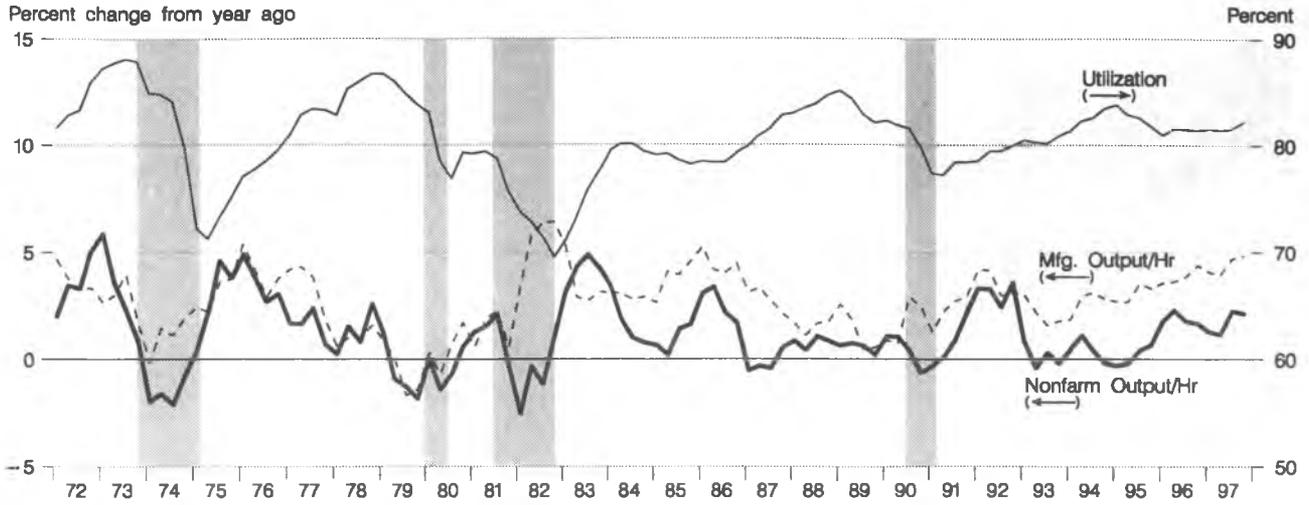
Japan



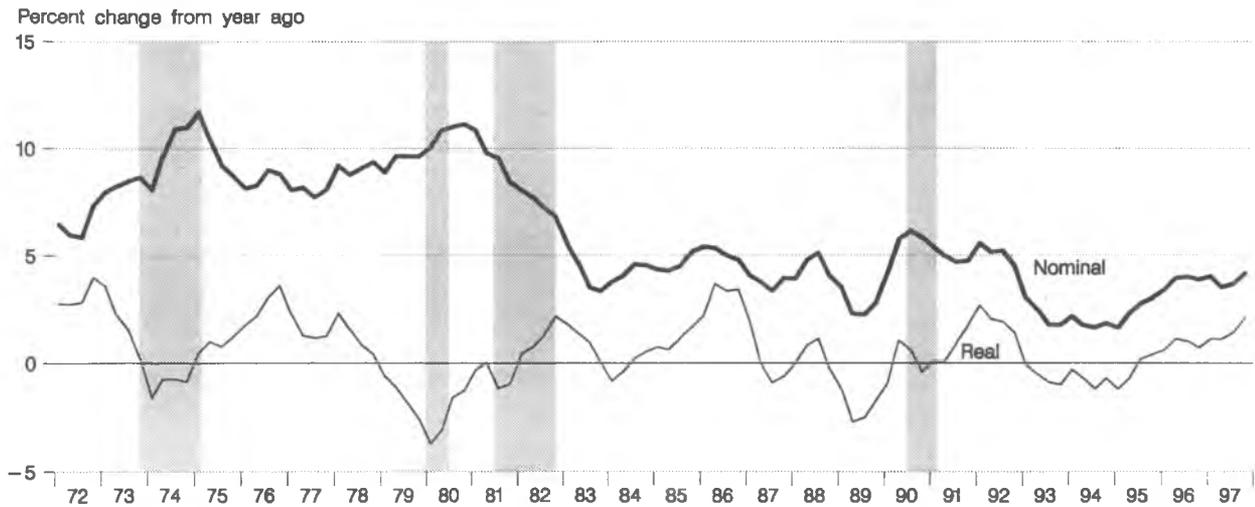
Mexico



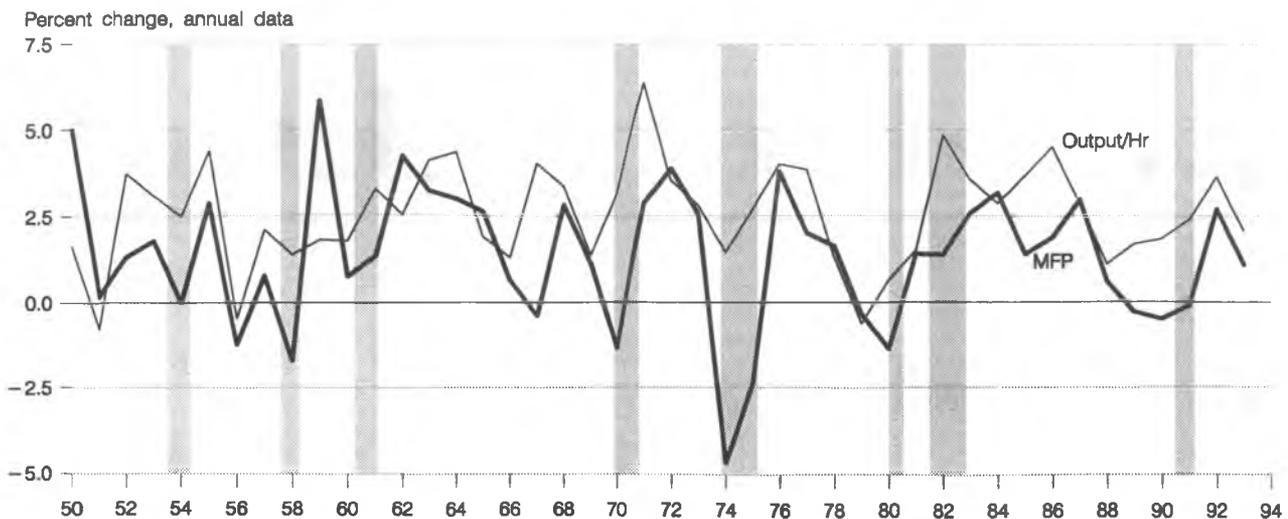
Output per Hour and Manufacturing Capacity Utilization



Nonfarm Compensation per Hour

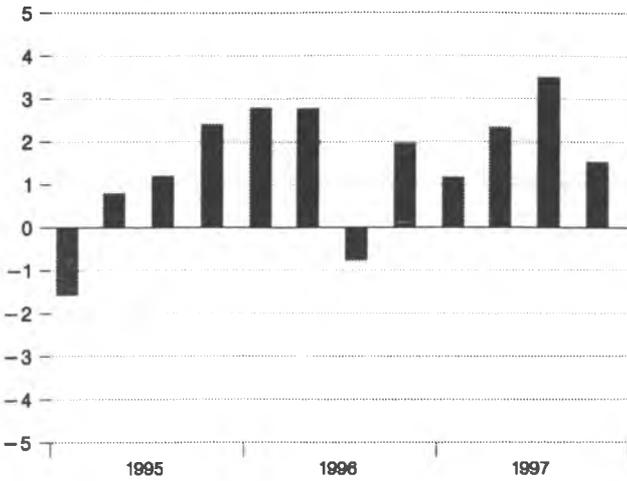


Output per Hour and Multifactor Productivity, Manufacturing



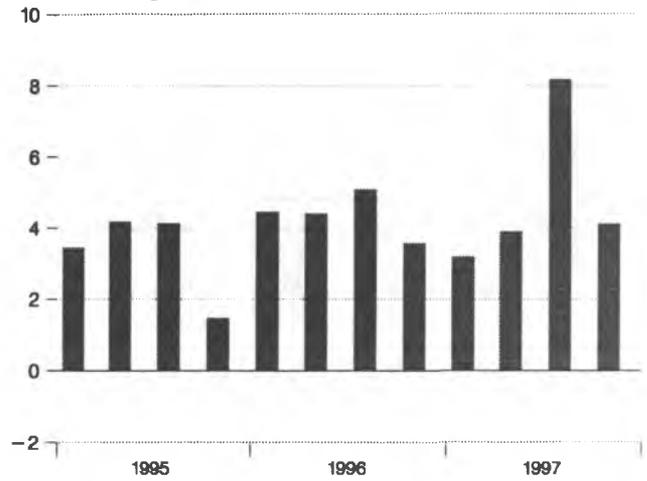
Nonfarm Output per Hour

Percent change at annual rate



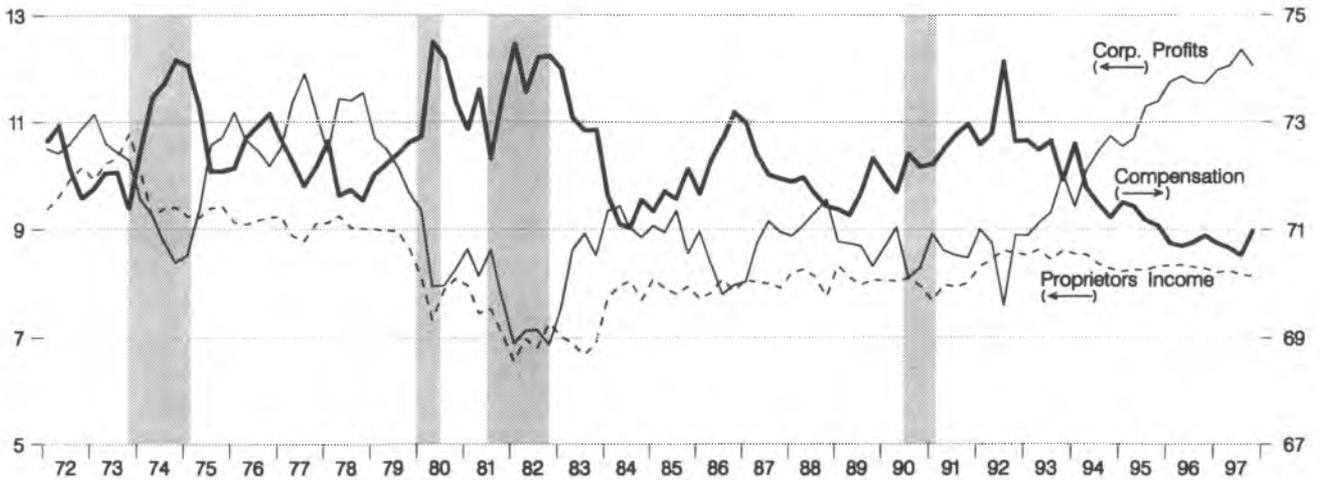
Manufacturing Output per Hour

Percent change at annual rate



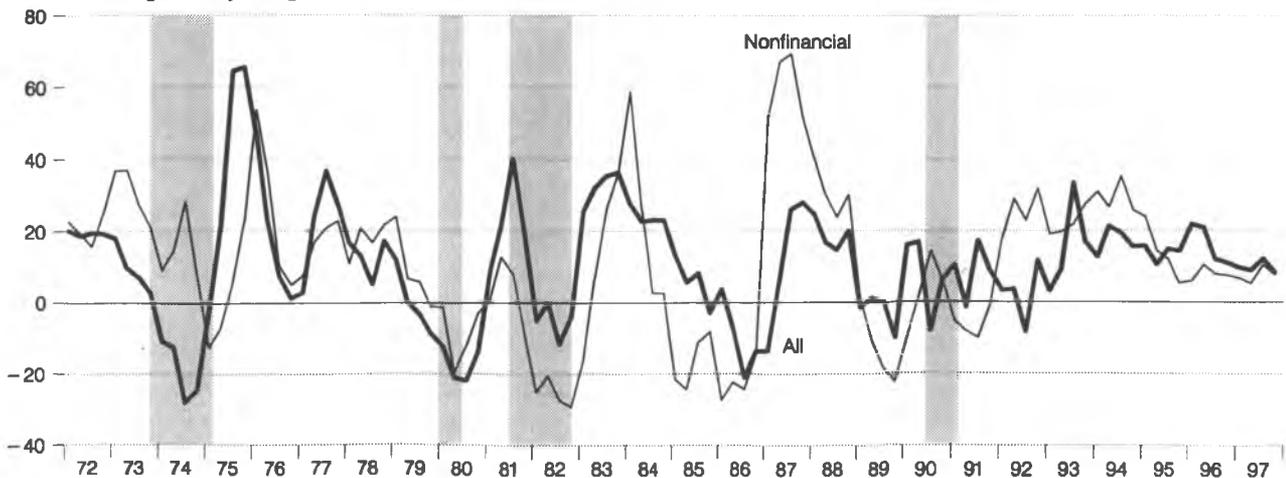
Selected Component Shares of National Income

Percent



Corporate Profits after Tax (with IVA and CCAAdj)

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		7.001		
1994	6947.0		5.9	6610.741		3.5	6551.247		2.9		22.102		
1995	7265.4		4.6	6742.062		2.0	6712.672		2.5		60.552		
1996	7636.0		5.1	6928.396		2.8	6900.980		2.8		27.341		
1997	8079.9		5.8	7188.820		3.8	7118.324		3.1		25.038		
1994	1	6794.3	5.5	5.4	6524.505	3.0	3.1	6473.029	1.2	2.8	53.061	32.301	
	2	6911.4	7.1	6.2	6600.313	4.7	3.8	6526.671	3.4	2.9	75.896	16.644	
	3	6986.5	4.4	6.3	6629.474	1.8	3.7	6580.376	3.3	3.2	49.662	15.283	
	4	7095.7	6.4	5.8	6688.609	3.6	3.3	6624.848	2.7	2.7	63.590	24.179	
1995	1	7168.9	4.2	5.5	6703.721	0.9	2.7	6654.289	1.8	2.8	48.479	53.061	
	2	7209.5	2.3	4.3	6708.841	0.3	1.6	6685.289	1.9	2.4	21.638	75.896	
	3	7301.3	5.2	4.5	6759.234	3.0	2.0	6739.306	3.3	2.4	17.023	49.662	
	4	7381.9	4.5	4.0	6796.513	2.2	1.6	6771.927	2.0	2.2	22.223	63.590	
1996	1	7467.5	4.7	4.2	6826.362	1.8	1.8	6814.966	2.6	2.4	8.039	48.479	
	2	7607.7	7.7	5.5	6926.023	6.0	3.2	6902.290	5.2	3.2	21.288	21.638	
	3	7676.0	3.6	5.1	6943.820	1.0	2.7	6905.034	0.2	2.5	37.903	17.023	
	4	7792.9	6.2	5.6	7017.379	4.3	3.2	6981.692	4.5	3.1	32.922	22.223	
1997	1	7933.6	7.4	6.2	7101.617	4.9	4.0	7034.087	3.0	3.2	63.657	8.039	
	2	8034.3	5.2	5.6	7159.627	3.3	3.4	7077.749	2.5	2.5	77.603	21.288	
	3	8124.3	4.6	5.8	7214.017	3.1	3.9	7160.333	4.7	3.7	47.539	37.903	
	4	8227.4	5.2	5.6	7280.020	3.7	3.7	7201.126	2.3	3.1	74.049	32.922	
		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		4595.273		2.4	583.598		4.0	962.119		5.1	706.513		9.0
1996		4714.061		2.6	611.107		4.7	1041.699		8.3	771.683		9.2
1997		4867.461		3.3	645.548		5.6	1123.564		7.9	848.268		9.9
1994	1	4439.436	3.8	3.6	550.661	6.4	9.2	887.795	3.2	9.0	626.191	0.4	8.4
	2	4472.224	3.0	3.5	555.796	3.8	7.0	913.178	11.9	9.9	641.209	9.9	7.8
	3	4498.218	2.3	3.0	561.741	4.3	6.0	922.712	4.2	9.3	653.153	7.7	8.5
	4	4534.129	3.2	3.1	576.563	11.0	6.3	938.467	7.0	6.6	672.890	12.6	7.6
1995	1	4551.303	1.5	2.5	572.230	-3.0	3.9	955.820	7.6	7.7	695.674	14.2	11.1
	2	4583.458	2.9	2.5	577.706	3.9	3.9	954.034	-0.7	4.5	705.353	5.7	10.0
	3	4612.912	2.6	2.5	590.755	9.3	5.2	962.315	3.5	4.3	708.231	1.6	8.4
	4	4633.463	1.8	2.2	593.701	2.0	3.0	976.315	5.9	4.0	716.800	4.9	6.5
1996	1	4669.373	3.1	2.6	600.662	4.8	5.0	1001.533	10.7	4.8	736.939	11.7	5.9
	2	4712.204	3.7	2.8	614.771	9.7	6.4	1035.683	14.4	8.6	759.734	13.0	7.7
	3	4718.196	0.5	2.3	611.864	-1.9	3.6	1060.886	10.1	10.2	789.290	16.5	11.4
	4	4756.427	3.3	2.7	617.131	3.5	3.9	1068.696	3.0	9.5	800.771	5.9	11.7
1997	1	4818.079	5.3	3.2	637.766	14.1	6.2	1079.006	3.9	7.7	808.932	4.1	9.8
	2	4829.430	0.9	2.5	628.992	-5.4	2.3	1111.393	12.6	7.3	836.993	14.6	10.2
	3	4896.187	5.6	3.8	656.140	18.4	7.2	1149.303	14.4	8.3	874.482	19.2	10.8
	4	4926.148	2.5	3.6	659.296	1.9	6.8	1154.552	1.8	8.0	872.663	-0.8	9.0

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	122.3		3.3	118.5		2.9	132.0		4.0
1995	107.763		2.5	125.6		2.8	121.9		2.9	135.0		2.2
1996	110.224		2.3	129.2		2.8	125.9		3.3	137.4		1.8
1997	112.447		2.0	133.2		3.1	130.4		3.6	140.2		2.1
1994 1	104.156	2.5	2.3	120.8	3.0	3.3	117.1	2.1	2.8	130.3	4.4	4.3
2	104.736	2.2	2.3	121.8	3.4	3.3	118.1	3.5	3.1	131.5	3.7	4.0
3	105.391	2.5	2.5	122.8	3.3	3.3	119.0	3.1	2.9	132.8	4.0	4.0
4	106.071	2.6	2.5	123.6	2.6	3.1	119.8	2.7	2.8	133.5	2.1	3.6
1995 1	106.933	3.3	2.7	124.4	2.6	3.0	120.6	2.7	3.0	133.9	1.2	2.8
2	107.485	2.1	2.6	125.2	2.6	2.8	121.5	3.0	2.9	134.6	2.1	2.4
3	108.031	2.0	2.5	126.0	2.6	2.6	122.4	3.0	2.9	135.3	2.1	1.9
4	108.603	2.1	2.4	126.9	2.9	2.7	123.2	2.6	2.8	136.0	2.1	1.9
1996 1	109.349	2.8	2.3	127.7	2.5	2.7	124.4	4.0	3.2	136.0	0.0	1.6
2	109.857	1.9	2.2	128.8	3.5	2.9	125.5	3.6	3.3	137.0	3.0	1.8
3	110.588	2.7	2.4	129.7	2.8	2.9	126.4	2.9	3.3	137.7	2.1	1.8
4	111.103	1.9	2.3	130.6	2.8	2.9	127.4	3.2	3.4	138.7	2.9	2.0
1997 1	111.775	2.4	2.2	131.4	2.5	2.9	128.5	3.5	3.3	138.7	0.0	2.0
2	112.272	1.8	2.2	132.5	3.4	2.9	129.7	3.8	3.3	139.7	2.9	2.0
3	112.673	1.4	1.9	133.6	3.4	3.0	130.9	3.8	3.6	140.4	2.0	2.0
4	113.068	1.4	1.8	135.2	4.9	3.5	132.5	5.0	4.0	141.9	4.3	2.3
	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
1993	658.183		2.9	728.409		8.9	100.1		0.1	102.3		2.3
1994	712.399		8.2	817.026		12.2	100.5		0.4	104.1		1.8
1995	791.213		11.1	890.057		8.9	100.7		0.2	106.7		2.5
1996	857.022		8.3	971.469		9.1	102.6		1.9	110.8		3.8
1997	962.710		12.3	1109.233		14.2	104.3		1.7	115.0		3.8
1994 1	676.029	-1.8	4.4	773.638	7.6	10.2	100.6	-1.2	0.5	103.8	3.1	2.2
2	704.131	17.7	6.7	808.022	19.0	11.8	100.7	0.4	1.1	103.9	0.4	1.8
3	722.105	10.6	11.7	833.229	13.1	14.2	100.4	-1.2	0.4	104.2	1.2	1.7
4	747.330	14.7	10.0	853.197	9.9	12.3	100.7	1.2	-0.2	104.9	2.7	1.8
1995 1	760.368	7.2	12.5	873.861	10.0	13.0	100.3	-1.6	-0.3	105.5	2.3	1.6
2	777.447	9.3	10.4	890.284	7.7	10.2	100.5	0.8	-0.2	106.3	3.1	2.3
3	802.435	13.5	11.1	895.368	2.3	7.5	100.8	1.2	0.4	107.1	3.0	2.8
4	824.604	11.5	10.3	900.720	2.4	5.6	101.4	2.4	0.7	108.1	3.8	3.1
1996 1	828.178	1.7	8.9	928.963	13.1	6.3	102.1	2.8	1.8	109.1	3.8	3.4
2	847.444	9.6	9.0	960.043	14.1	7.8	102.8	2.8	2.3	110.5	5.2	4.0
3	851.382	1.9	6.1	990.240	13.2	10.6	102.6	-0.8	1.8	111.4	3.3	4.0
4	901.071	25.5	9.3	1006.623	6.8	11.8	103.1	2.0	1.7	112.3	3.3	3.9
1997 1	922.652	9.9	11.4	1048.941	17.9	12.9	103.4	1.2	1.3	113.5	4.3	4.0
2	962.500	18.4	13.6	1099.106	20.5	14.5	104.0	2.3	1.2	114.4	3.2	3.5
3	973.025	4.4	14.3	1137.097	14.6	14.8	104.9	3.5	2.2	115.5	3.9	3.7
4	992.661	8.3	10.2	1151.787	5.3	14.4	105.3	1.5	2.1	117.0	5.3	4.2

National Economic Trends

		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
1993		120259	1771		1.5	110707	2116		1.9	124.5			2.9
1994		123069	2810		2.3	114145	3438		3.1	129.8			4.2
1995		124903	1834		1.5	117195	3051		2.7	133.4			2.8
1996		126708	1805		1.4	119517	2322		2.0	136.4			2.2
1997		129557	2849		2.2	122263	2746		2.3	140.6			3.1
1995	1	124897	449	1.5	2.4	116482	873	3.1	3.4	133.0	0.8	3.2	4.3
	2	124666	-232	-0.7	1.7	116937	455	1.6	2.9	132.9	-0.1	-0.4	2.7
	3	124843	177	0.6	1.3	117414	478	1.6	2.4	133.6	0.6	2.3	2.5
	4	125207	365	1.2	0.6	117949	534	1.8	2.0	134.2	0.4	1.7	1.7
1996	1	125656	449	1.4	0.6	118471	522	1.8	1.7	134.3	0.1	0.4	1.0
	2	126323	667	2.1	1.3	119248	778	2.7	2.0	136.1	1.3	5.5	2.5
	3	127067	744	2.4	1.8	119898	649	2.2	2.1	137.0	0.7	2.7	2.5
	4	127787	720	2.3	2.1	120452	555	1.9	2.1	138.1	0.8	3.1	2.9
1997	1	128697	910	2.9	2.4	121138	686	2.3	2.3	139.5	1.0	4.1	3.8
	2	129387	690	2.2	2.4	121854	715	2.4	2.2	140.1	0.4	1.7	2.9
	3	129723	336	1.0	2.1	122575	721	2.4	2.2	140.6	0.4	1.6	2.6
	4	130421	698	2.2	2.1	123487	912	3.0	2.5	142.2	1.1	4.5	3.0
1996	Feb	125771	525	5.1	0.6	118550	492	5.1	1.7	135.1	2.0	26.3	1.9
	Mar	125951	180	1.7	0.8	118804	254	2.6	1.8	135.4	0.2	2.7	2.0
	Apr	126057	106	1.0	0.9	118966	162	1.6	1.8	135.1	-0.2	-2.6	1.0
	May	126321	264	2.5	1.5	119263	297	3.0	2.1	135.7	0.4	5.5	2.9
	Jun	126591	270	2.6	1.7	119516	253	2.6	2.1	137.6	1.4	18.2	3.5
	Jul	126867	276	2.6	1.7	119691	175	1.8	2.2	136.1	-1.1	-12.3	1.9
	Aug	126995	128	1.2	1.8	119983	292	3.0	2.1	137.1	0.7	9.2	2.8
	Sep	127338	343	3.3	1.9	120019	36	0.4	2.0	137.9	0.6	7.2	3.0
	Oct	127715	377	3.6	1.9	120248	229	2.3	2.1	137.2	-0.5	-5.9	2.1
	Nov	127746	31	0.3	2.0	120450	202	2.0	2.1	137.9	0.5	6.3	2.7
	Dec	127899	153	1.4	2.2	120659	209	2.1	2.1	139.1	0.9	11.0	3.9
1997	Jan	128541	642	6.2	2.6	120909	250	2.5	2.4	138.2	-0.6	-7.5	4.3
	Feb	128515	-26	-0.2	2.2	121162	253	2.5	2.2	140.0	1.3	16.8	3.6
	Mar	129035	520	5.0	2.4	121344	182	1.8	2.1	140.2	0.1	1.7	3.5
	Apr	129275	240	2.3	2.6	121671	327	3.3	2.3	139.6	-0.4	-5.0	3.3
	May	129494	219	2.1	2.5	121834	163	1.6	2.2	140.0	0.3	3.5	3.2
	Jun	129392	-102	-0.9	2.2	122056	222	2.2	2.1	140.6	0.4	5.3	2.2
	Jul	129661	269	2.5	2.2	122440	384	3.8	2.3	140.2	-0.3	-3.4	3.0
	Aug	129747	86	0.8	2.2	122492	52	0.5	2.1	140.8	0.4	5.3	2.7
	Sep	129761	14	0.1	1.9	122792	300	3.0	2.3	140.9	0.1	0.9	2.2
	Oct	129910	149	1.4	1.7	123083	291	2.9	2.4	141.2	0.2	2.6	2.9
	Nov	130575	665	6.3	2.2	123512	429	4.3	2.5	142.9	1.2	15.4	3.6
	Dec	130777	202	1.9	2.3	123866	354	3.5	2.7	142.5	-0.3	-3.3	2.4
1998	Jan	131083	306	2.8	2.0	124241	375	3.7	2.8	143.6	0.8	9.7	3.9
	Feb	131163	80	0.7	2.1	124551	310	3.0	2.8	144.5	0.6	7.8	3.2

	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	2071.178			6.5	103.554			3.6	3.00	5.86
1994	6.1	2224.913			7.4	109.171			5.4	4.25	7.08
1995	5.6	2326.536			4.6	114.543			4.9	5.49	6.58
1996	5.4	2440.312			4.9	118.499			3.5	5.01	6.44
1997	5.0	2548.523			4.4	124.421			5.0	5.06	6.35
1995	1	573.137	0.2	0.8	5.6	113.488	1.4	5.9	6.5	5.74	7.48
	2	578.680	1.0	3.9	5.2	113.949	0.4	1.6	5.1	5.60	6.62
	3	585.146	1.1	4.5	4.5	115.216	1.1	4.5	4.9	5.37	6.32
	4	589.573	0.8	3.1	3.1	115.519	0.3	1.1	3.3	5.26	5.89
1996	1	600.484	1.9	7.6	4.8	116.105	0.5	2.0	2.3	4.93	5.91
	2	609.371	1.5	6.1	5.3	118.228	1.8	7.5	3.8	5.02	6.72
	3	611.126	0.3	1.2	4.4	119.270	0.9	3.6	3.5	5.10	6.78
	4	619.331	1.3	5.5	5.0	120.393	0.9	3.8	4.2	4.98	6.34
1997	1	634.304	2.4	10.0	5.6	121.940	1.3	5.2	5.0	5.06	6.56
	2	630.244	-0.6	-2.5	3.4	123.312	1.1	4.6	4.3	5.05	6.70
	3	641.726	1.8	7.5	5.0	125.119	1.5	6.0	4.9	5.05	6.24
	4	642.249	0.1	0.3	3.7	127.314	1.8	7.2	5.7	5.09	5.90
1996	Feb	201.085	1.7	22.5	6.1	116.725	1.2	15.9	2.9	4.83	5.81
	Mar	201.685	0.3	3.6	5.6	116.288	-0.4	-4.4	2.4	4.96	6.27
	Apr	202.496	0.4	4.9	6.0	117.530	1.1	13.6	3.5	4.95	6.51
	May	204.177	0.8	10.4	5.8	118.257	0.6	7.7	3.8	5.02	6.74
	Jun	202.698	-0.7	-8.4	4.2	118.897	0.5	6.7	4.0	5.09	6.91
	Jul	203.090	0.2	2.3	4.5	118.943	0.0	0.5	4.1	5.15	6.87
	Aug	203.087	-0.0	-0.0	3.7	119.253	0.3	3.2	3.3	5.05	6.64
	Sep	204.949	0.9	11.6	5.1	119.613	0.3	3.7	3.2	5.09	6.83
	Oct	206.693	0.9	10.7	6.1	119.650	0.0	0.4	3.7	4.99	6.53
	Nov	205.966	-0.4	-4.1	4.7	120.587	0.8	9.8	4.3	5.03	6.20
	Dec	206.672	0.3	4.2	4.4	120.943	0.3	3.6	4.7	4.91	6.30
1997	Jan	209.307	1.3	16.4	5.9	121.288	0.3	3.5	5.2	5.03	6.58
	Feb	212.655	1.6	21.0	5.8	122.064	0.6	8.0	4.6	5.01	6.42
	Mar	212.342	-0.1	-1.8	5.3	122.468	0.3	4.0	5.3	5.14	6.69
	Apr	209.934	-1.1	-12.8	3.7	123.073	0.5	6.1	4.7	5.16	6.89
	May	209.370	-0.3	-3.2	2.5	123.316	0.2	2.4	4.3	5.05	6.71
	Jun	210.940	0.7	9.4	4.1	123.546	0.2	2.3	3.9	4.93	6.49
	Jul	213.549	1.2	15.9	5.1	124.527	0.8	10.0	4.7	5.05	6.22
	Aug	214.372	0.4	4.7	5.6	125.246	0.6	7.2	5.0	5.14	6.30
	Sep	213.805	-0.3	-3.1	4.3	125.585	0.3	3.3	5.0	4.95	6.21
	Oct	213.517	-0.1	-1.6	3.3	126.550	0.8	9.6	5.8	4.97	6.03
	Nov	213.834	0.1	1.8	3.8	127.528	0.8	9.7	5.8	5.14	5.87
	Dec	214.898	0.5	6.1	4.0	127.864	0.3	3.2	5.7	5.16	5.81
1998	Jan	216.955	1.0	12.1	3.7	128.047	0.1	1.7	5.6	5.04	5.54
	Feb	218.051	0.5	6.2	2.5	128.103	0.0	0.5	4.9	5.09	5.57

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	
1995	1	150.9	0.6	2.6	2.8	2.6	159.6	0.8	3.2	2.9	3.2	127.1	0.9	3.6	1.7
	2	152.2	0.8	3.4	3.0	3.0	160.9	0.8	3.4	3.0	3.3	127.9	0.6	2.5	2.1
	3	153.0	0.5	2.1	2.6	2.7	162.0	0.7	2.8	3.0	3.1	128.0	0.1	0.2	1.6
	4	153.9	0.6	2.5	2.6	2.6	163.2	0.7	2.9	3.1	3.1	128.7	0.6	2.4	2.2
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	0.7	-0.7
1996	Feb	155.0	0.2	2.4	2.7	3.6	164.2	0.2	2.2	2.9	3.0	129.7	0.0	0.0	2.0
	Mar	155.6	0.4	4.7	2.9	4.0	164.6	0.2	3.0	2.9	3.0	130.4	0.5	6.7	2.4
	Apr	156.2	0.4	4.7	2.9	4.1	164.9	0.2	2.2	2.7	2.8	130.9	0.4	4.7	2.4
	May	156.6	0.3	3.1	2.9	3.9	165.2	0.2	2.2	2.7	2.7	131.1	0.2	1.8	2.4
	Jun	156.8	0.1	1.5	2.8	3.5	165.6	0.2	2.9	2.7	2.7	131.4	0.2	2.8	2.7
	Jul	157.2	0.3	3.1	2.9	3.5	166.0	0.2	2.9	2.7	2.7	131.3	-0.1	-0.9	2.6
	Aug	157.4	0.1	1.5	2.9	3.2	166.3	0.2	2.2	2.7	2.7	131.5	0.2	1.8	2.9
	Sep	157.8	0.3	3.1	3.0	3.2	166.7	0.2	2.9	2.6	2.7	131.8	0.2	2.8	2.9
	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	131.7	-0.1	-0.9	-0.6
	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	-2.7	-1.2
1998	Jan	161.9	0.0	0.0	1.6	0.0	171.7	0.2	2.1	2.2	2.1	130.5	-0.7	-7.9	-1.9
	Feb	162.0	0.1	0.7	1.4	0.4	172.2	0.3	3.6	2.3	2.8	130.4	-0.1	-0.9	-1.7

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. The **total return on the Standard and Poor's 500** is dividends as a percent of the value of the index plus the percent change in the index.

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 12, 13: **Debt service** is an estimate of scheduled interest and principal payments on outstanding debt. 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 $\%$ 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, consumer debt service

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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