



Expected Stock Market Returns and Business Investment

Most financial economists would agree that expected stock returns vary somewhat across time. Of course, this variation in expected returns explains only a small fraction of the variation in actual returns. Consequently, attempting to time the market remains a risky endeavor and many risk-averse investors favor buy-and-hold investing. Business investment projects, on the other hand, are unavoidably “lumpy” by nature and firms have strong incentives to wait for the most profitable periods to invest in irreversible, large-scale projects. Do we see any evidence that business investment keys off expected stock market returns, and, if so, what is the current outlook for business investment?

Recently, Lettau and Ludvigson (2001) showed that the deviation of consumption from aggregate wealth, which they label as the consumption-wealth ratio, is a useful indicator of expected stock returns, especially long-lasting shifts in expected returns.¹ Their measure of aggregate wealth includes both financial assets and the present value of labor income. The predictive ability of the consumption-wealth ratio is consistent with the economic theory that views consumption as a forward-looking variable. If investors foresee higher stock returns in the future, they will boost their consumption now to smooth consumption. Therefore, a high (low) level of the consumption-wealth ratio indicates high (low) expected stock returns in the future.

Like consumption decisions, business investment is also forward-looking with respect to expected returns to capital. If expected returns shift upward, new capital put in place now is expected to garner those high returns. It follows that movements in the consumption-wealth ratio should presage movements in business investment because the consumption-wealth ratio contains information about expected stock returns. Lettau and Ludvigson (2002) show that this relationship is present in the post-World War II data.² The accompanying chart demonstrates their main results. The thin dashed line is the consumption-wealth

ratio and the thick solid line is the average growth rate of fixed, private nonresidential investment in the three subsequent years. In general, a high level of the consumption-wealth ratio is associated with high rates of future investment and the coefficient of correlation between these two variables is about 0.40. The business cycle, highlighted with recession bars in the chart, appears to be a significant source of variation in expected stock market returns.

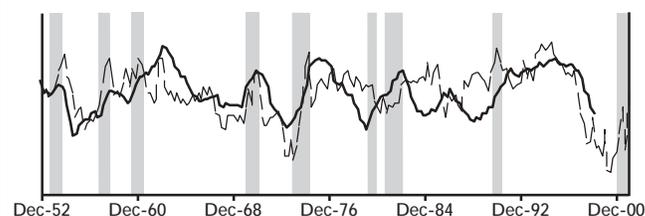
The correlation between the consumption-wealth ratio and business investment appears particularly strong in the last decade. Relatively high levels of the consumption-wealth ratio in the early 1990s preceded dramatic increases in both stock market prices and business investment in the subsequent years. Later in the 1990s, however, consumption did not rise at the same pace that financial wealth increased and the consumption-wealth ratio fell to an unusually low level. With this signal of low expected returns, investment and stock prices began to retreat in early 2000 and the economy eventually went into recession in the first quarter of 2001. At present, the consumption-wealth ratio is substantially above its recent trough, but it is still not at a level that suggests that business investment will be a strong driver of a new economic expansion.

—Hui Guo

¹Lettau, Martin and Ludvigson, Sydney. “Consumption, Aggregate Wealth, and Expected Stock Returns.” *Journal of Finance*, June 2001, 56(3), pp. 815-49.

²Lettau, Martin and Ludvigson, Sydney. “Time-Varying Risk-Premia and the Cost of Capital: An Alternative Implication of the q Theory of Investment.” *Journal of Monetary Economics*, January 2002, 49(1), pp. 31-66.

Consumption-Wealth Ratio and Forward 3-Year Moving Average of Investment Growth Rate



NOTE: The last observation of investment (thick solid line) is 1999:Q1, which is the average growth rate over the period from 1999:Q2 to 2002:Q1. The last observation of the consumption-wealth ratio (thin dashed line) is 2001:Q4.

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Conventions used in this publication:

1. Shaded areas indicate recessions, as determined by the National Bureau of Economic Research.
2. *Percent change* refers to simple percent changes. *Percent change from year ago* refers to the percent change from the same month or quarter during the previous year. *Compounded annual rate of change* shows what the growth rate would be over an entire year if the same simple percent change continued for four quarters or twelve months. The compounded annual rate of change of x between the previous quarter $t-1$ and the current quarter t is:

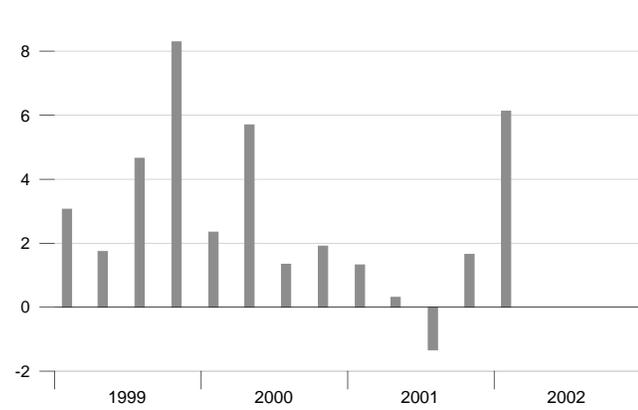
$$100 \times \left[\left(\frac{x_t}{x_{t-1}} \right)^4 - 1 \right]$$

For monthly data replace 4 with 12.

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

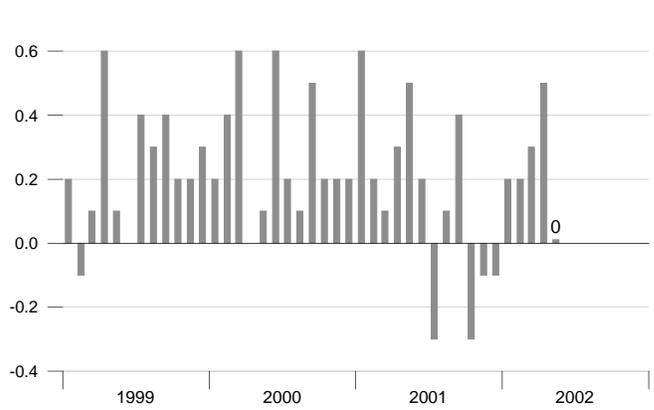
Real GDP Growth

Compounded annual rates of change
10



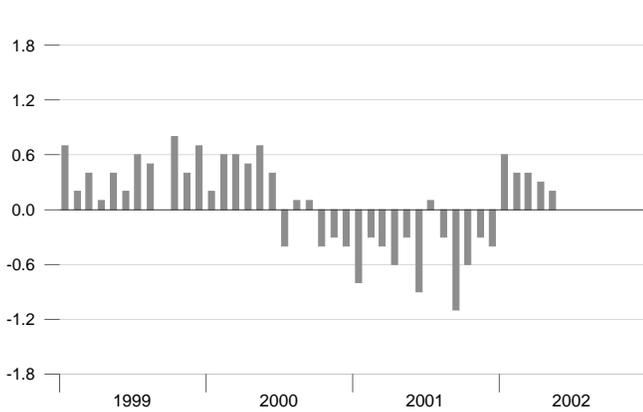
Consumer Price Index

Percent change
0.8



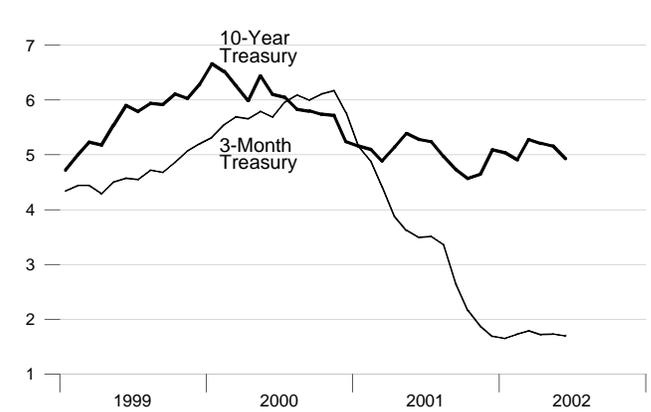
Industrial Production

Percent change
2.4



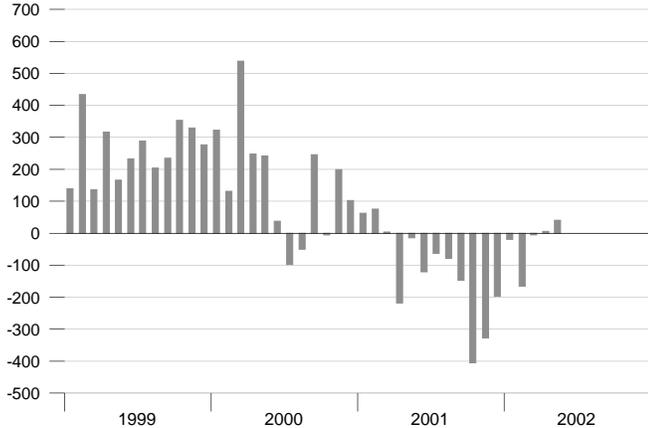
Interest Rates

Percent
8



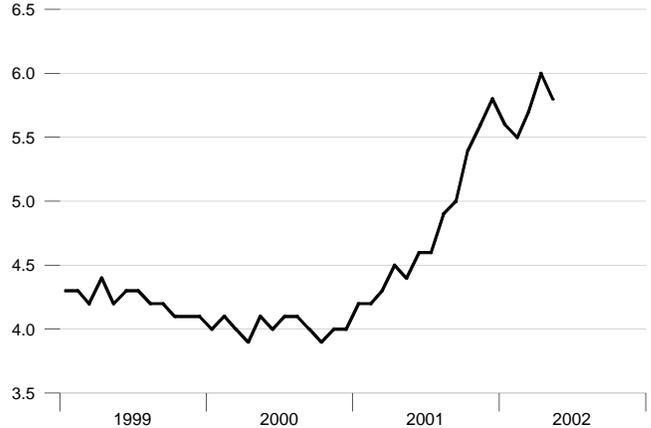
Change in Nonfarm Payrolls

Thousands
700



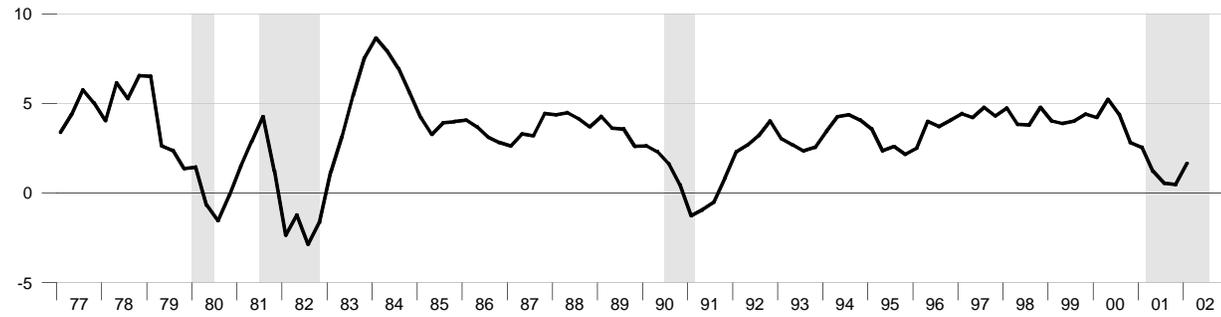
Unemployment Rate

Percent of labor force
6.5



Real Gross Domestic Product

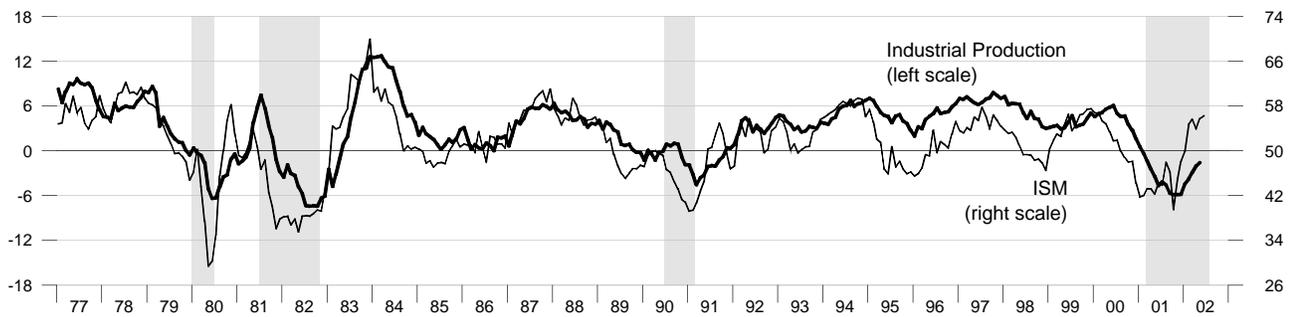
Percent change from year ago



Industrial Production and Institute for Supply Management (ISM) Indexes

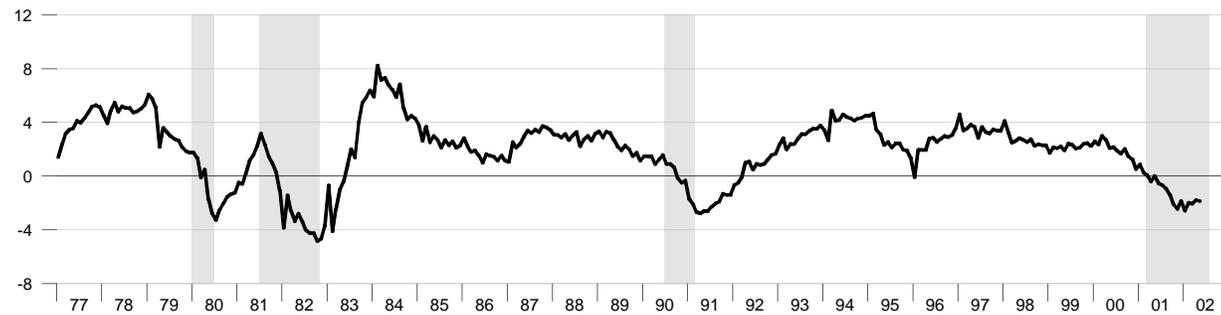
Percent change from year ago

Index



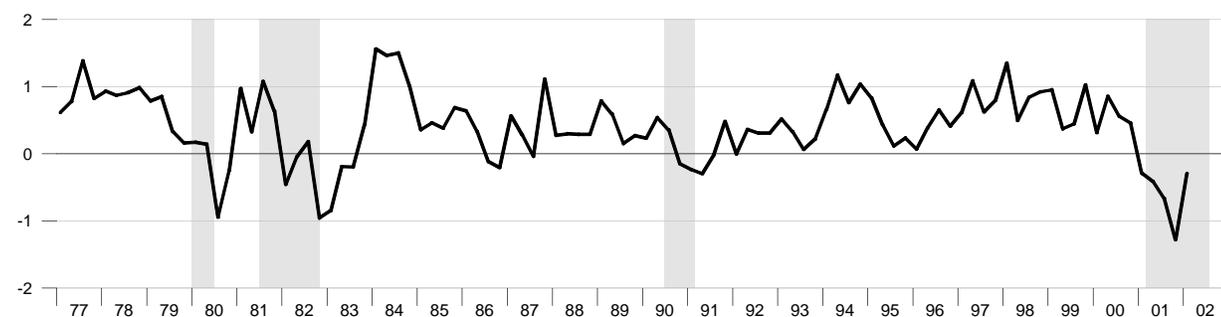
Aggregate Private Nonfarm Hours

Percent change from year ago

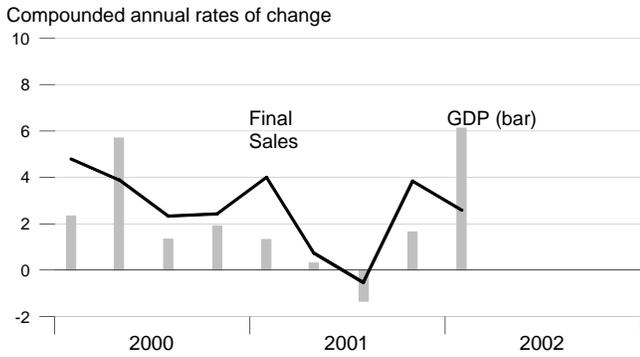


Real Change in Private Inventories

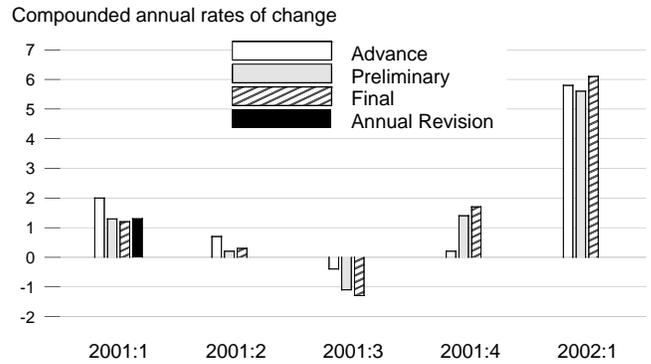
Percent of GDP



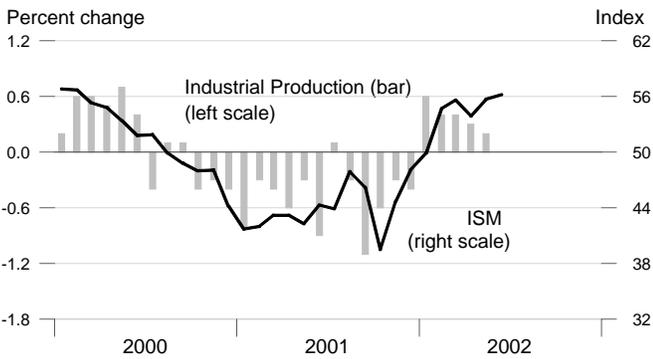
Real Final Sales and GDP



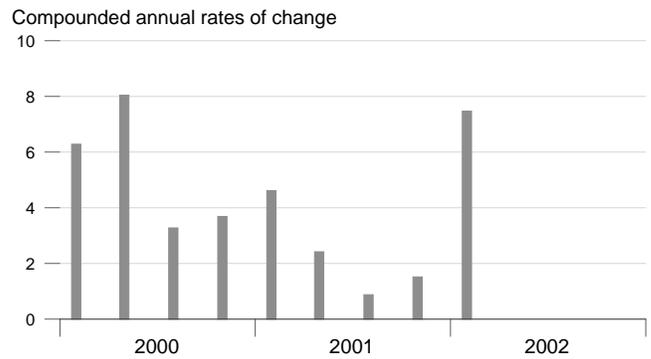
Real GDP Revisions



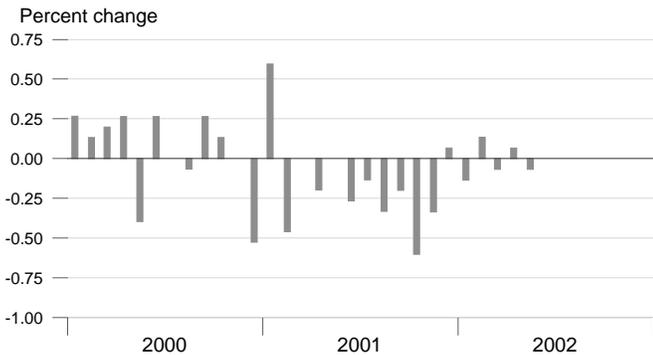
Industrial Production and ISM Index



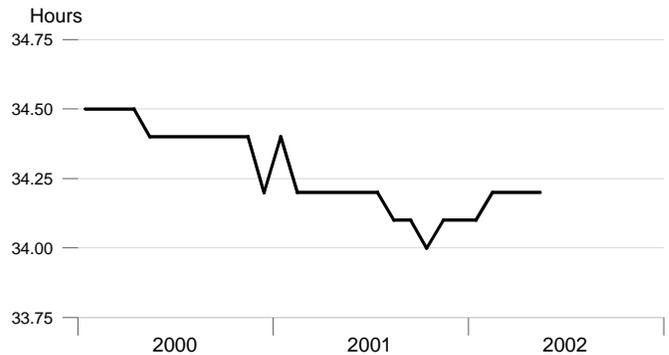
Nominal Gross Domestic Product



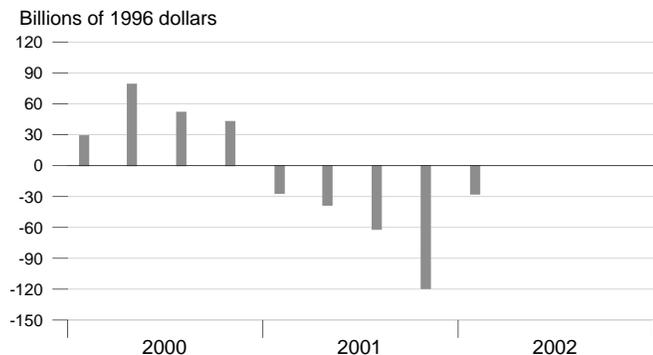
Aggregate Private Nonfarm Hours



Average Weekly Private Nonfarm Hours



Real Change in Private Inventories

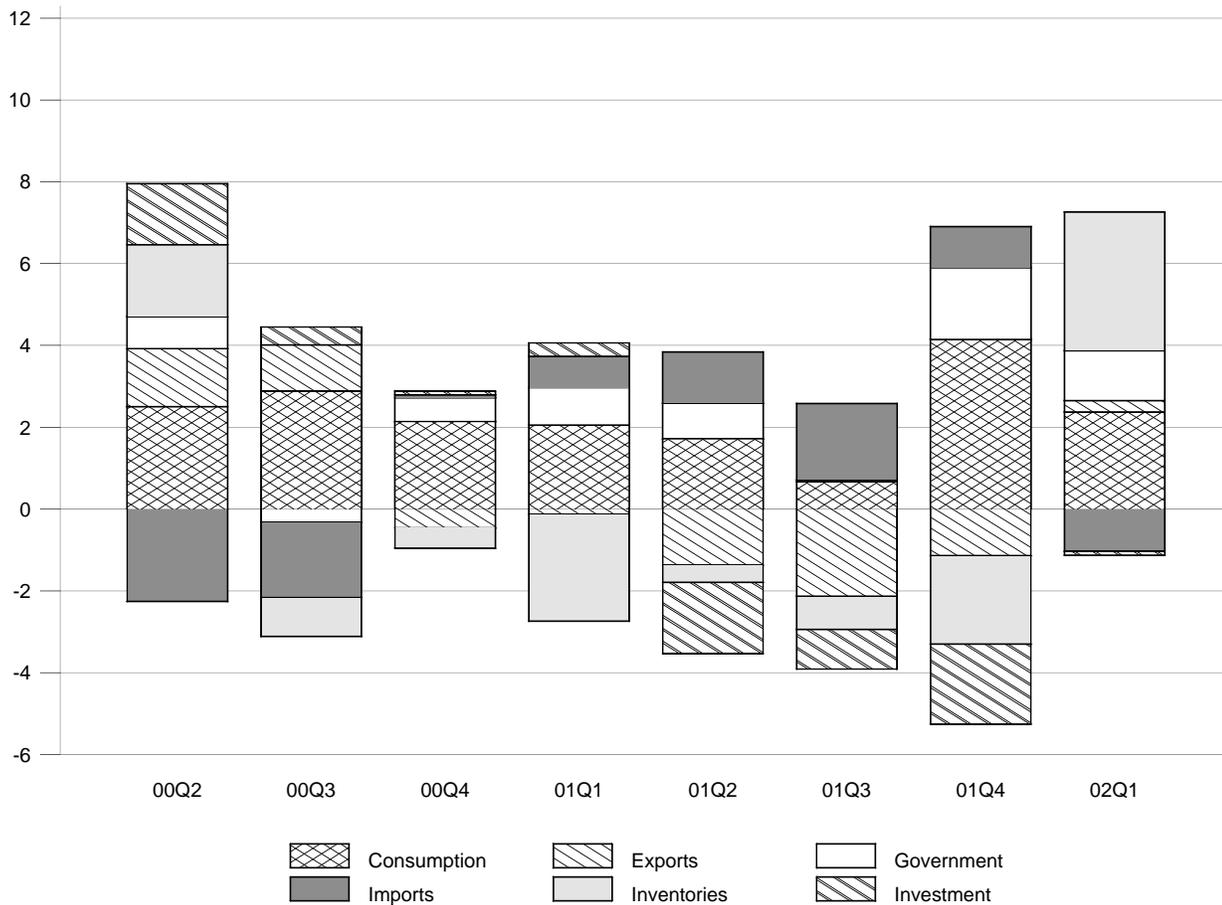


Inventory-Sales Ratio



Contribution of Components to Real GDP Growth

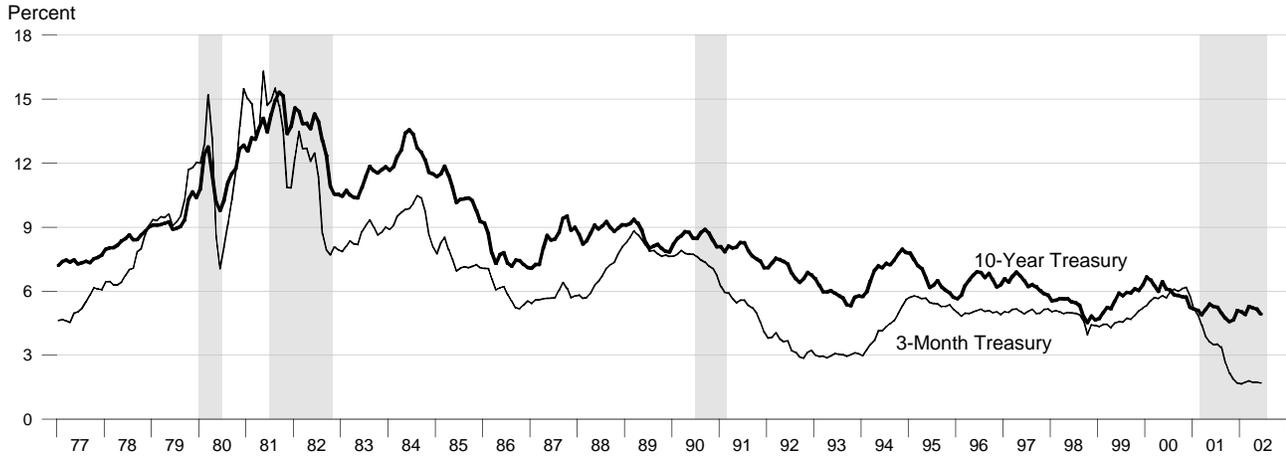
Percentage points at compounded annual rates



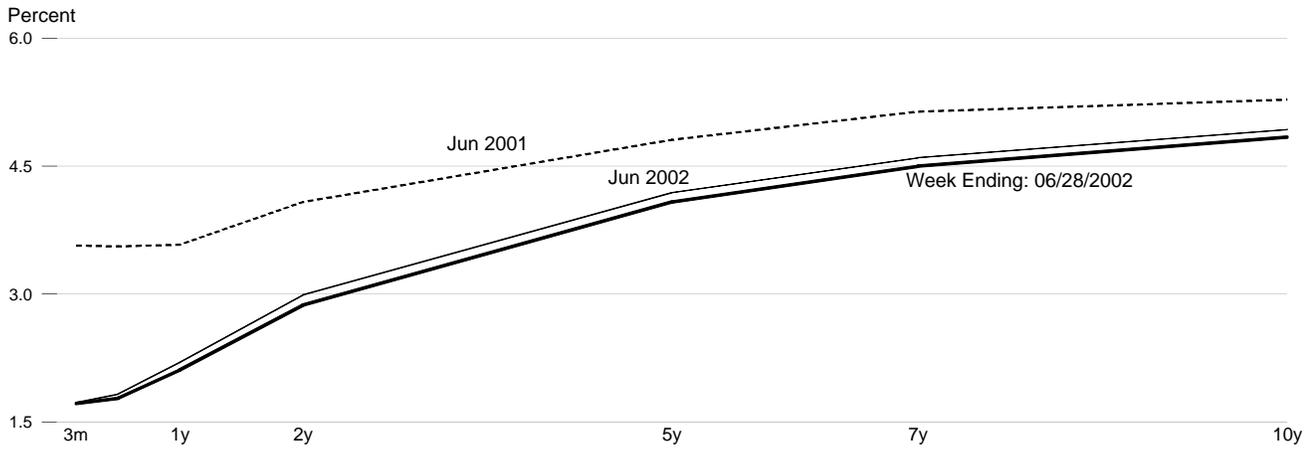
Contributions to Real GDP Growth Rate

	2000			2001				2002
	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Final Sales	3.93	2.29	2.41	3.93	0.73	-0.52	3.81	2.74
Change in Inventory	1.76	-0.95	-0.50	-2.61	-0.42	-0.81	-2.16	3.39
Consumption	2.50	2.88	2.14	2.05	1.72	0.67	4.14	2.37
Fixed Investment	1.49	0.44	0.09	0.33	-1.74	-0.97	-1.96	-0.10
Nonresidential	1.52	0.91	0.13	-0.02	-1.99	-1.08	-1.75	-0.71
Residential	-0.03	-0.47	-0.05	0.35	0.25	0.10	-0.21	0.61
Government	0.78	-0.32	0.58	0.92	0.87	0.05	1.76	1.22
Federal	0.90	-0.66	0.27	0.19	0.11	0.21	0.66	0.69
State and Local	-0.12	0.34	0.31	0.73	0.76	-0.16	1.10	0.53
Net Exports	-0.84	-0.70	-0.39	0.63	-0.12	-0.27	-0.14	-0.75
Exports	1.42	1.13	-0.46	-0.13	-1.37	-2.13	-1.14	0.28
Imports	-2.26	-1.84	0.07	0.76	1.25	1.86	1.00	-1.03
Residual	-0.47	0.22	-0.08	0.39	0.38	0.28	0.54	-0.15
Real GDP Growth	5.69	1.34	1.91	1.32	0.31	-1.33	1.65	6.13

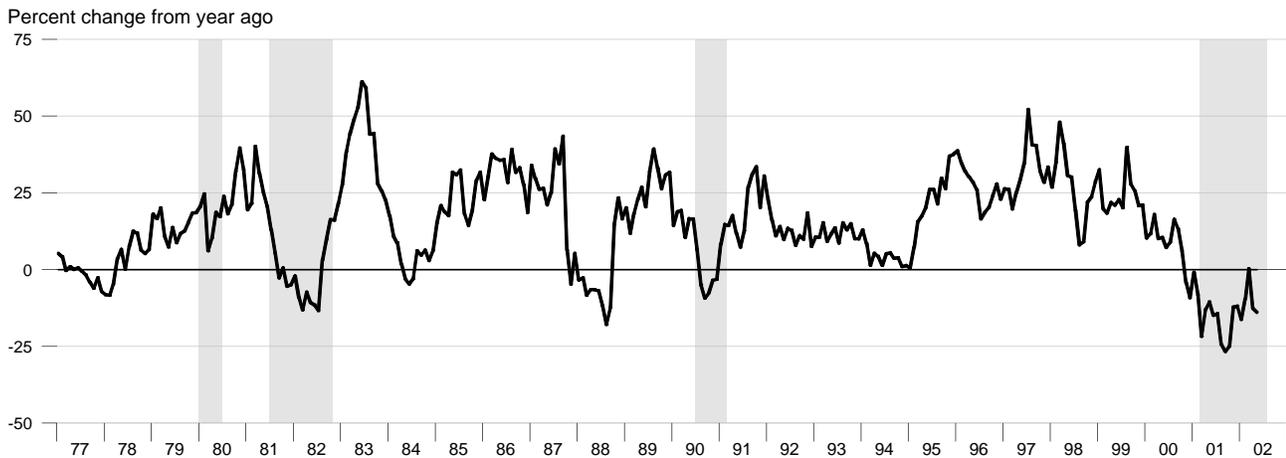
Interest Rates



Treasury Yield Curve

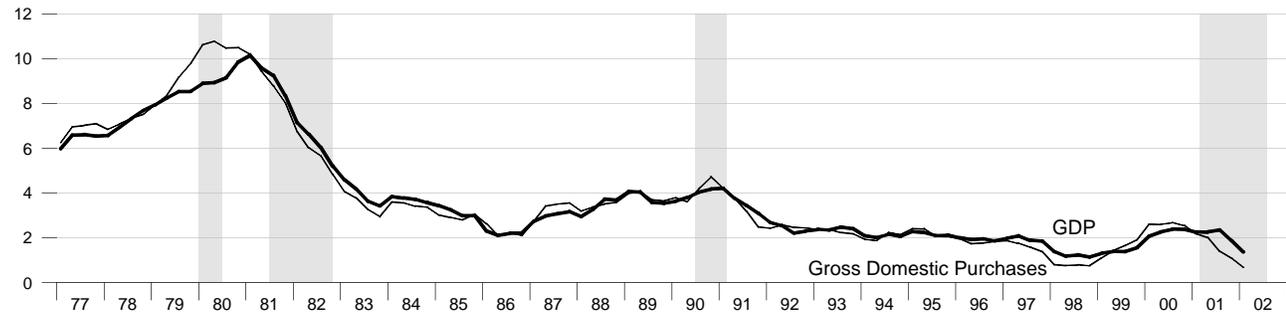


Standard and Poor's 500 Index with Reinvested Dividends



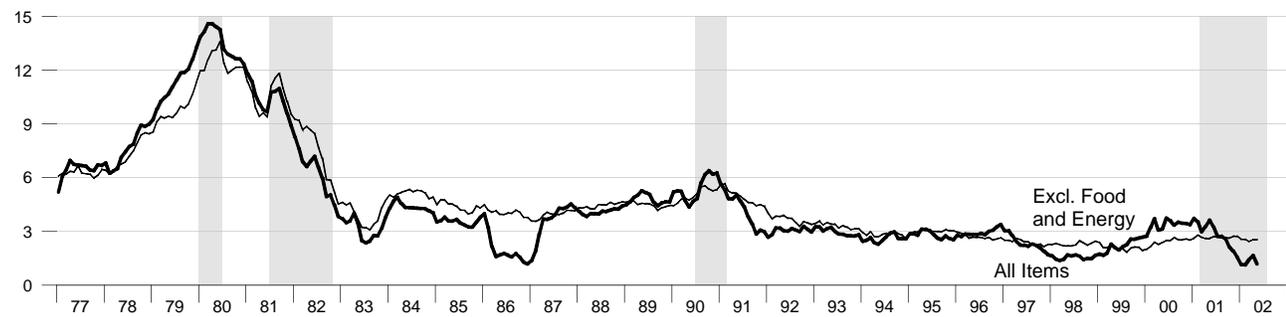
NIPA Chain Price Indexes

Percent change from year ago



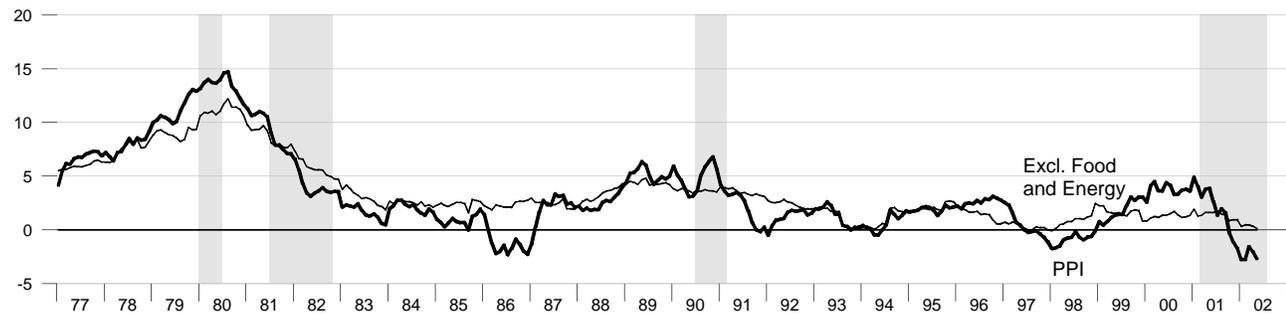
Consumer Price Index

Percent change from year ago



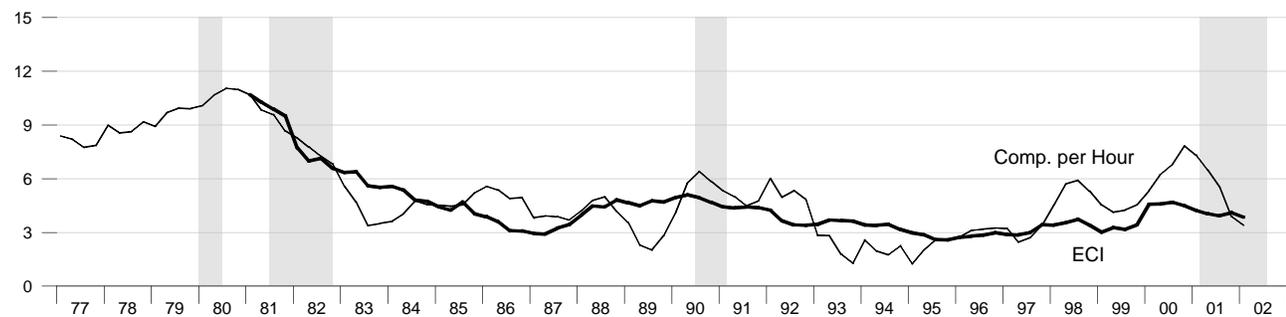
Producer Price Index, Finished Goods

Percent change from year ago

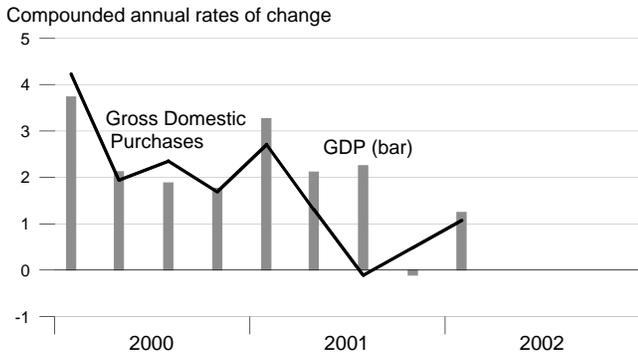


Employment Cost Index and Compensation per Hour

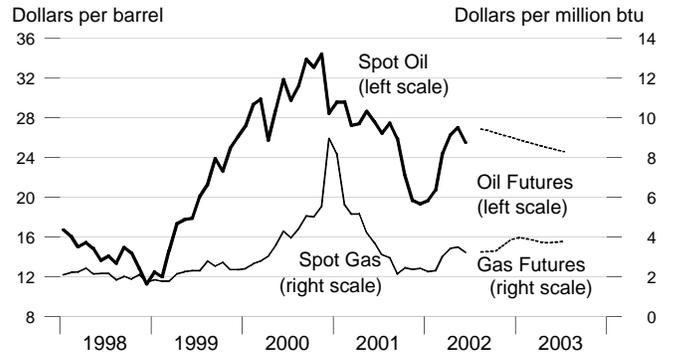
Percent change from year ago



NIPA Chain Price Indexes

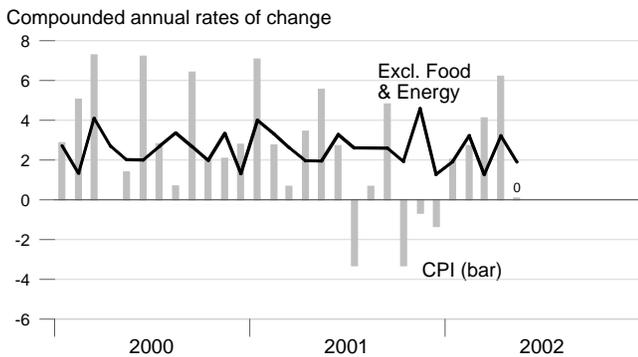


Oil & Natural Gas Prices: Spot & Futures

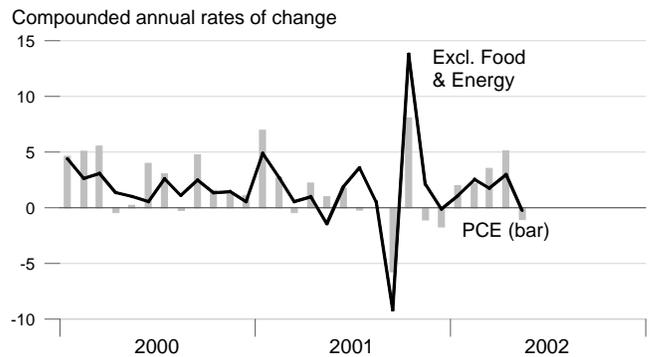


Note: Futures prices as of 06/28/2002

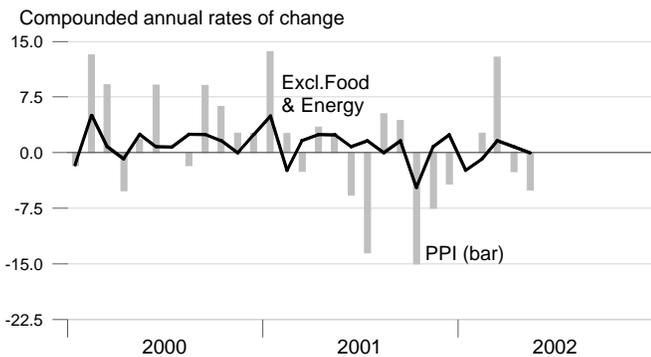
Consumer Price Index



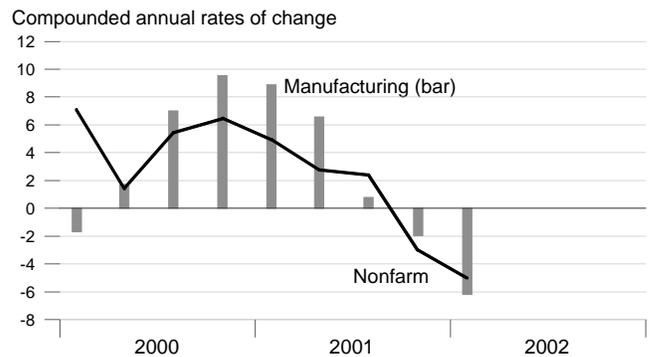
Consumption Chain Price Index



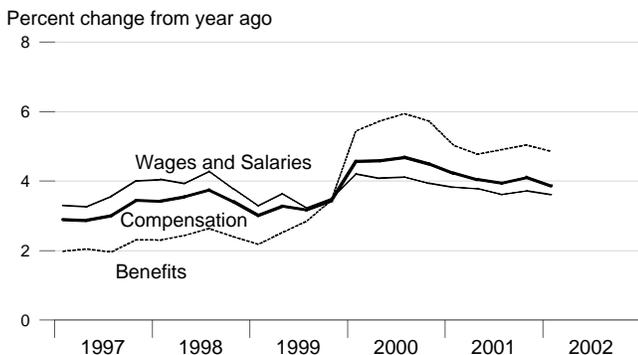
Producer Price Index, Finished Goods



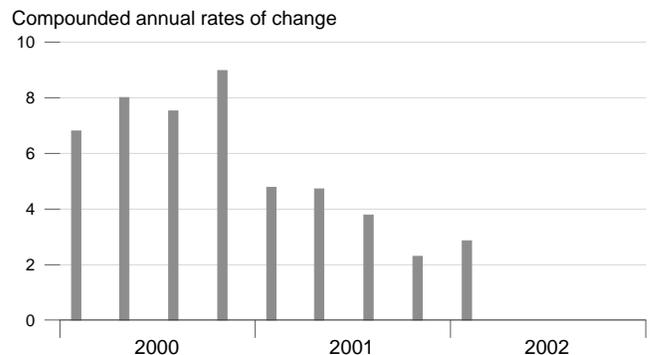
Unit Labor Cost



Employment Cost Index

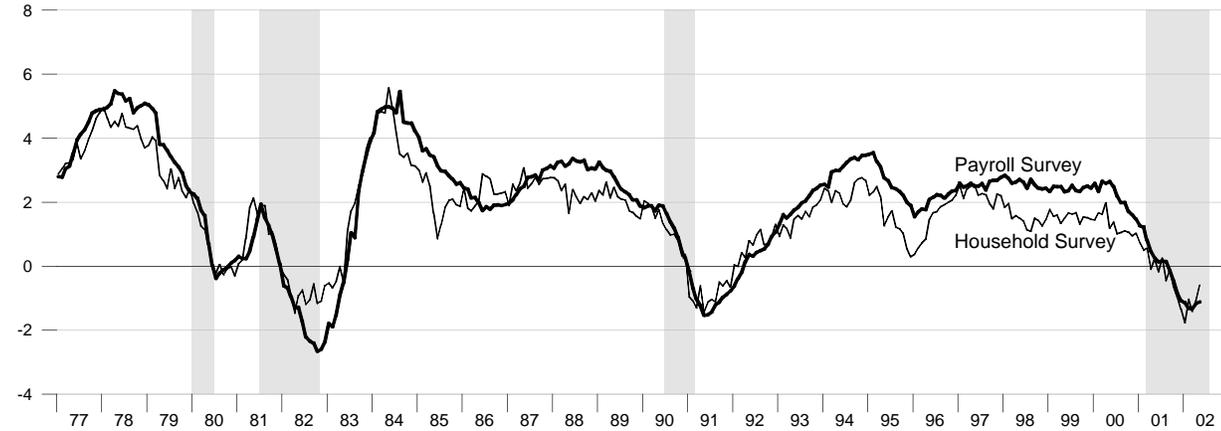


Compensation per Hour



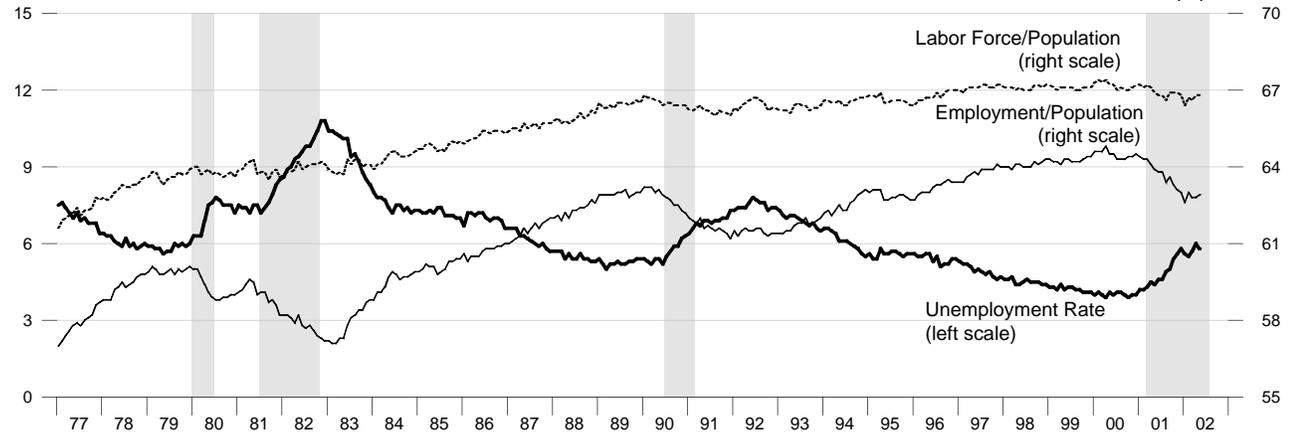
Employment

Percent change from year ago



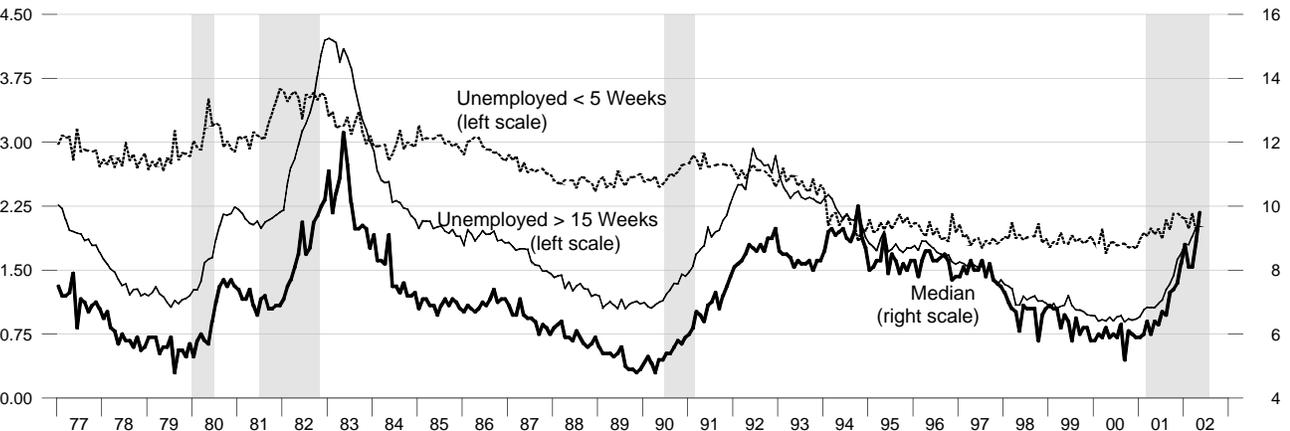
Unemployment, Labor Force Participation, and Employment Rates

Percent of labor force

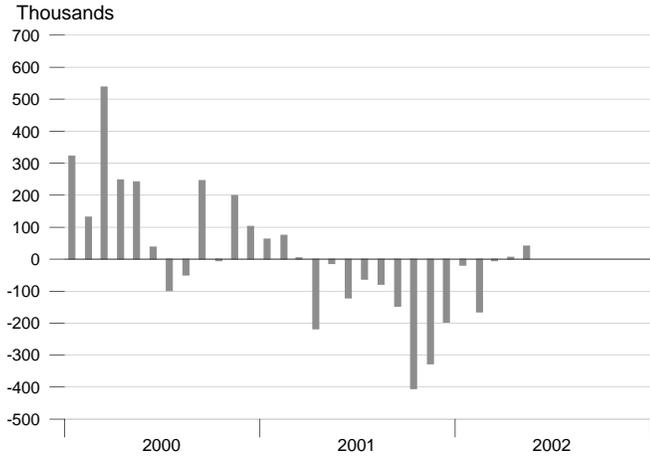


Duration of Unemployment

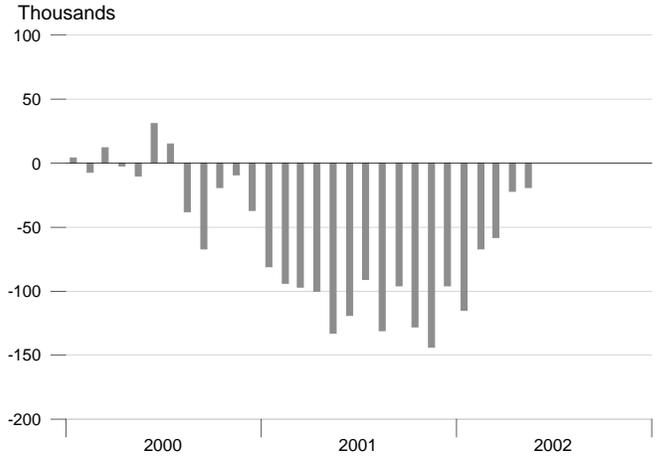
Percent of labor force



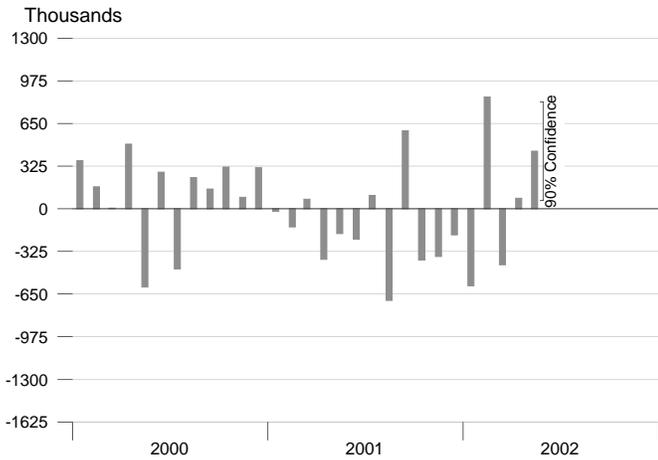
Change in Nonfarm Payrolls



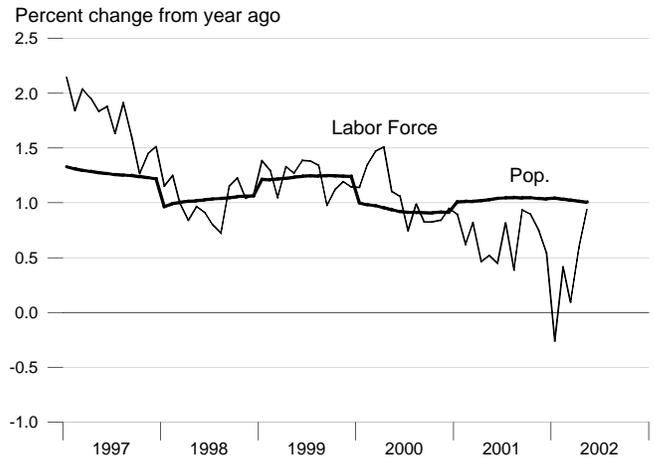
Change in Manufacturing Payrolls



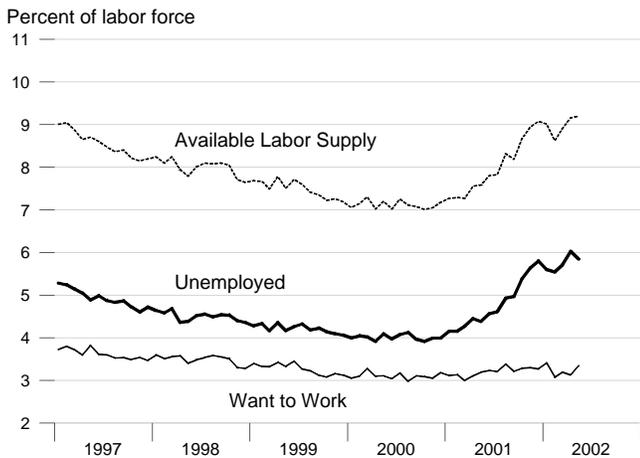
Change in Household Employment



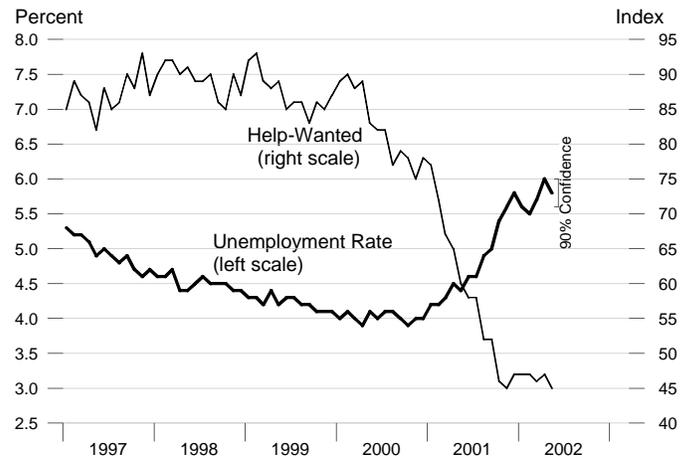
Labor Force and Population



Available Labor Supply and Components

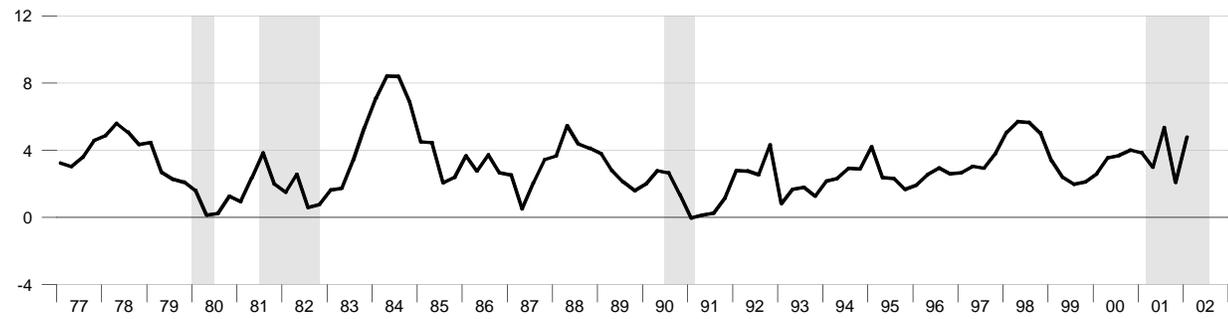


Unemployment Rate & Help-Wanted Index



Real Disposable Personal Income

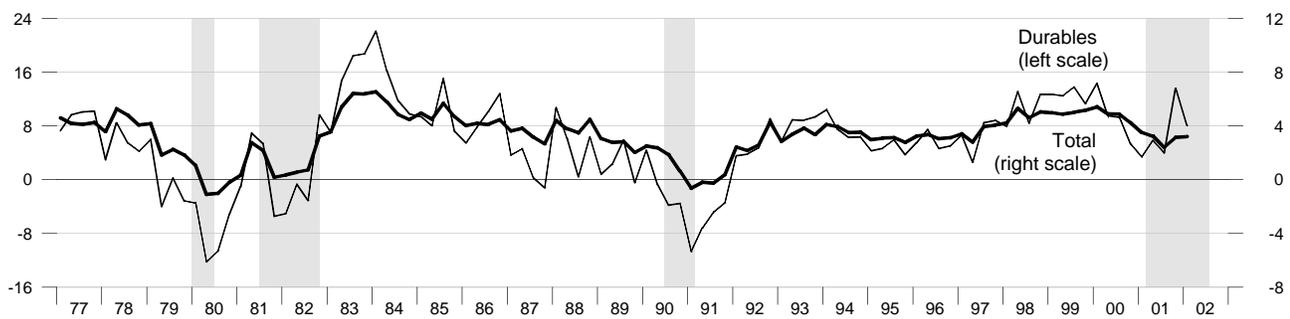
Percent change from year ago, quarterly data



Real Consumption

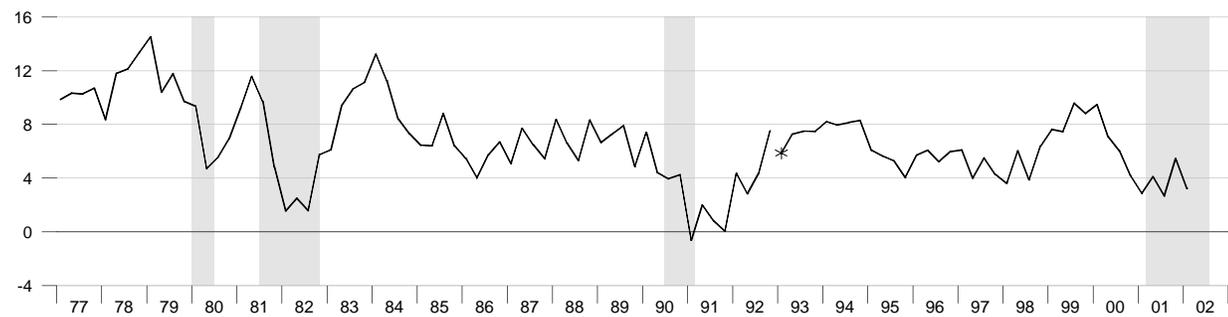
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



Retail and Food Services Sales

Percent change from year ago, quarterly average

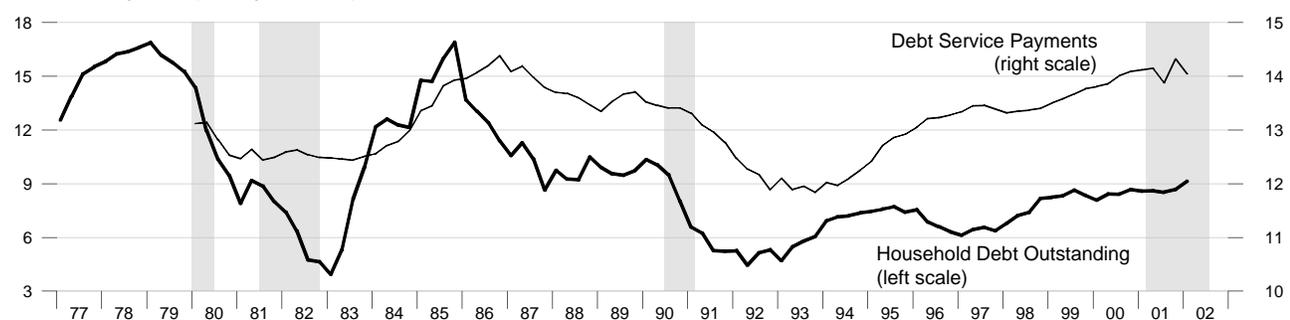


*Data before January 1992 are not strictly comparable (see End Notes).

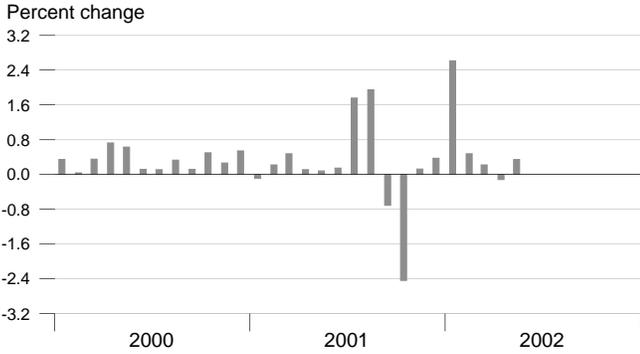
Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

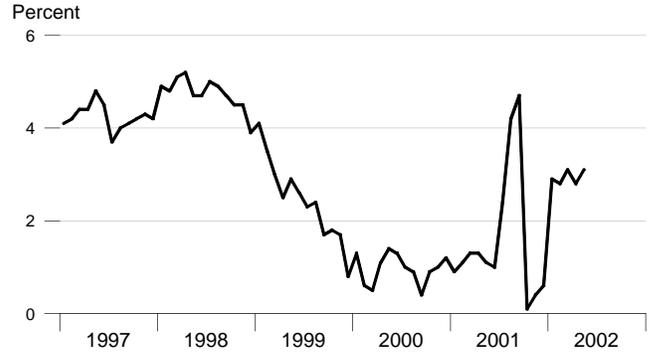
Percent of disposable personal income



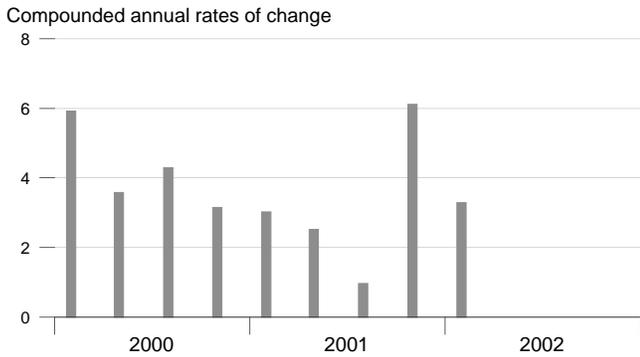
Real Disposable Personal Income



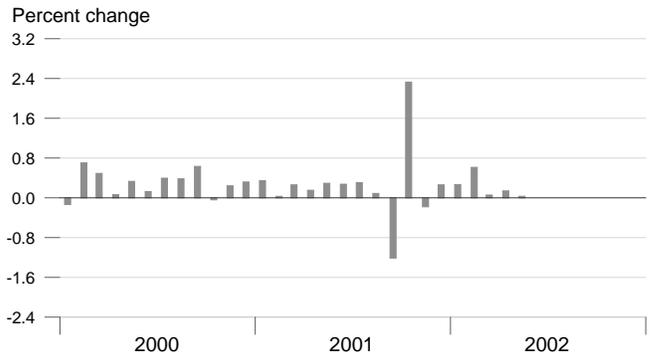
Personal Saving Rate



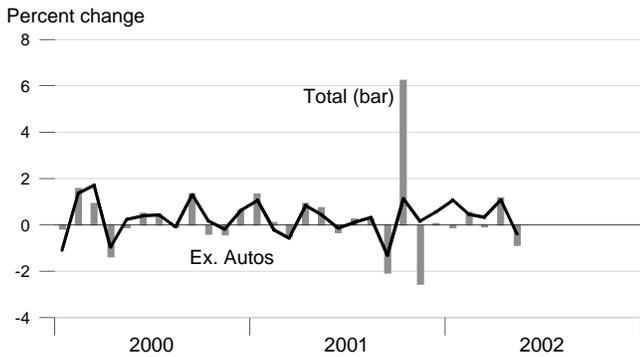
Real Consumption



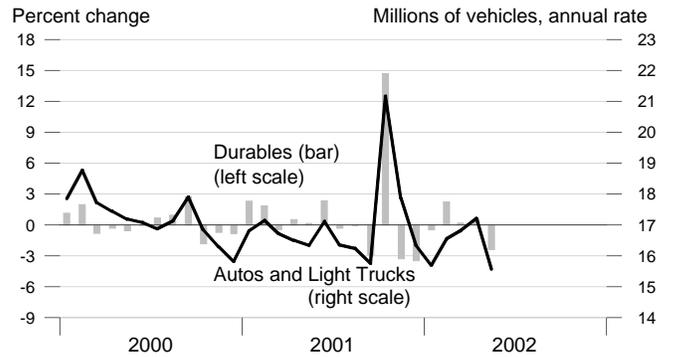
Real Consumption



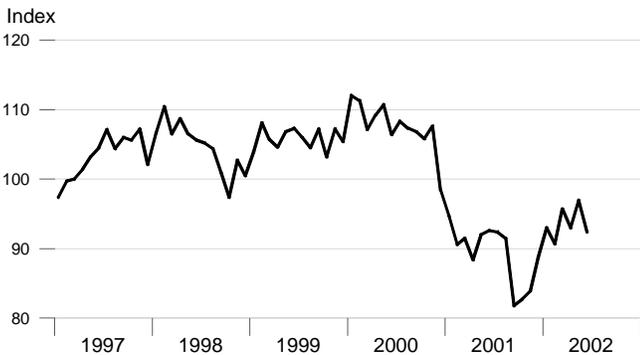
Retail & Food Services



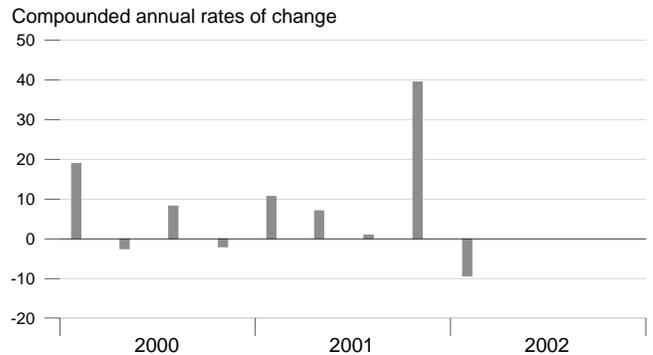
Real Durables Consumption & Vehicle Sales



Consumer Sentiment (U. of Michigan)

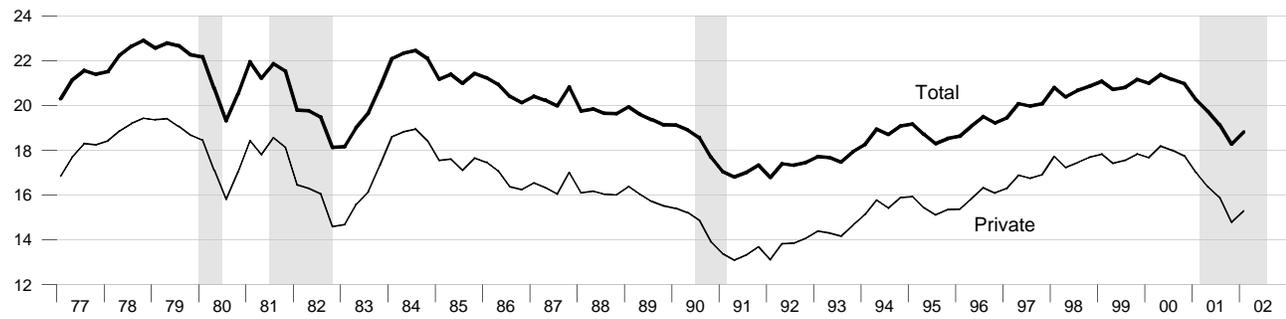


Real Durables Consumption



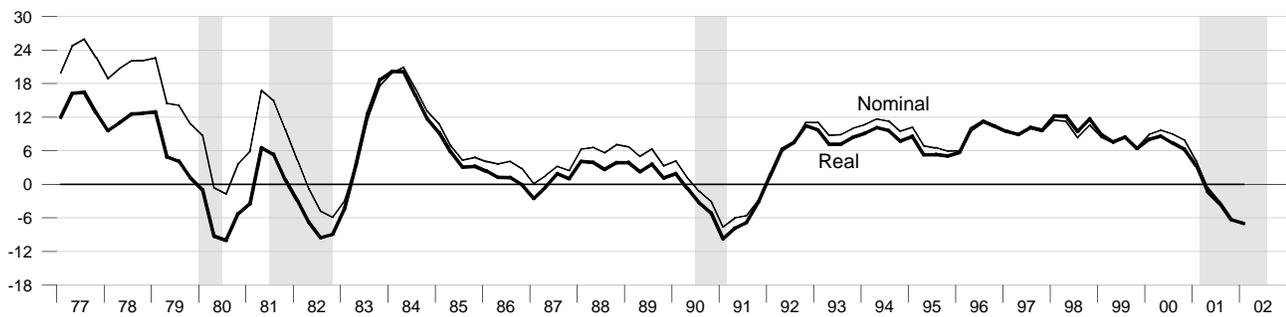
Investment

Percent of nominal GDP



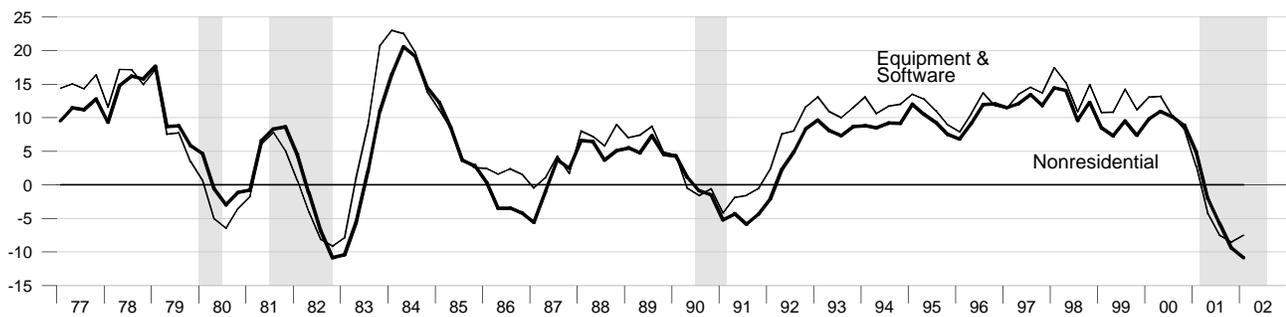
Private Fixed Investment

Percent change from year ago



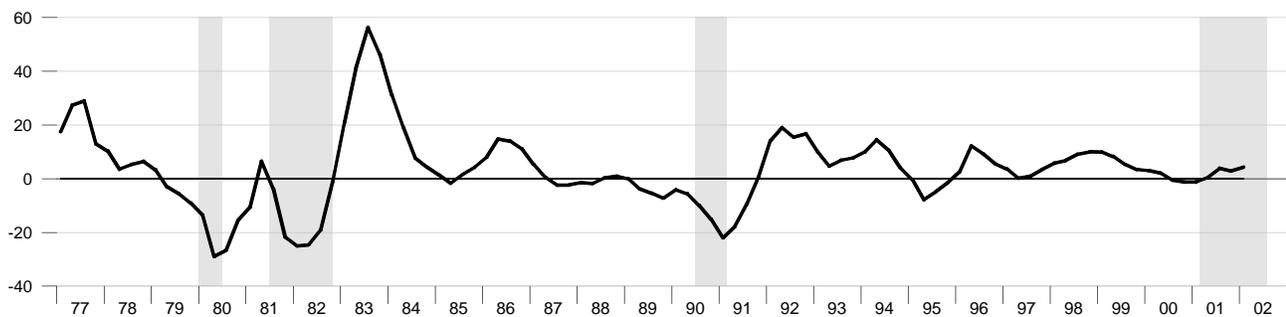
Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

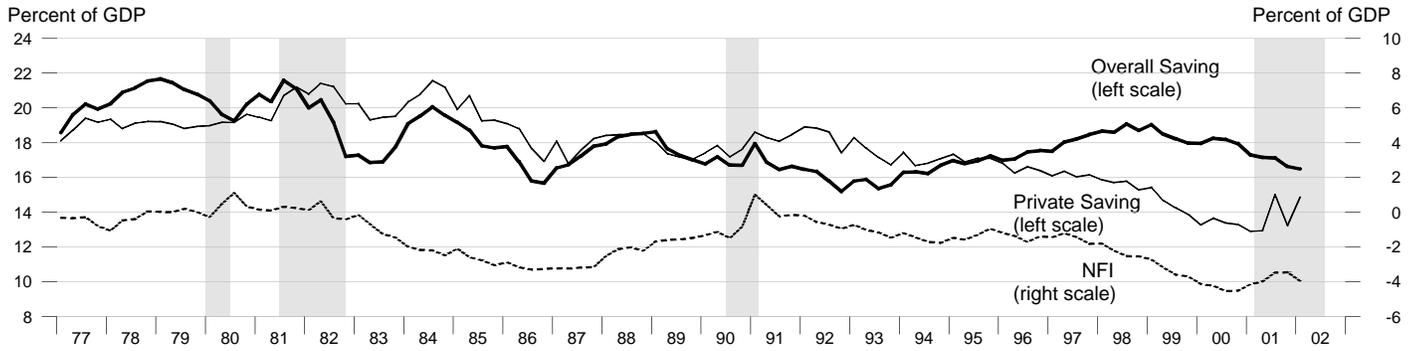


Real Residential Fixed Investment

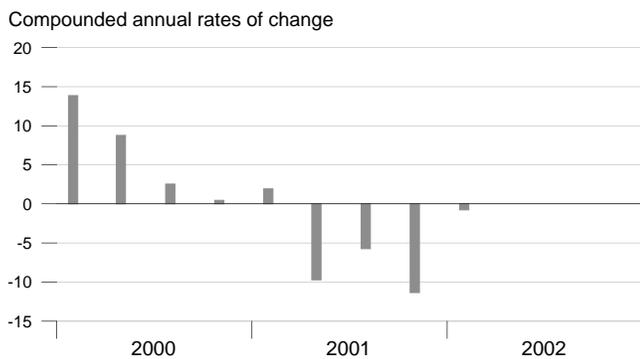
Percent change from year ago



Gross Saving Rates and Net Foreign Investment



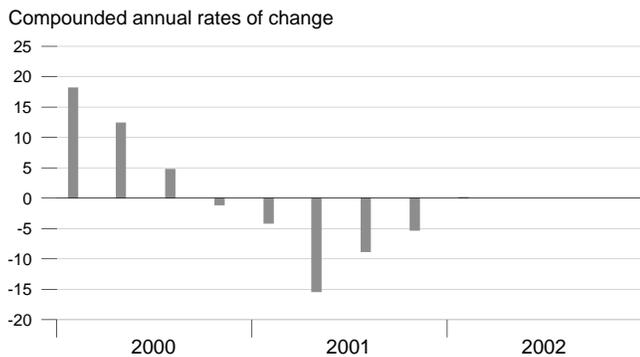
Real Private Fixed Investment



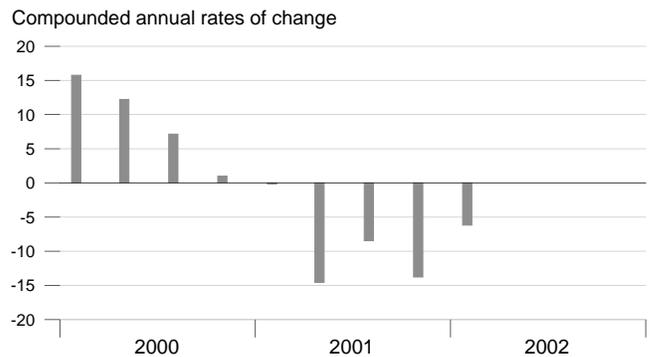
Nondefense Capital Goods Orders



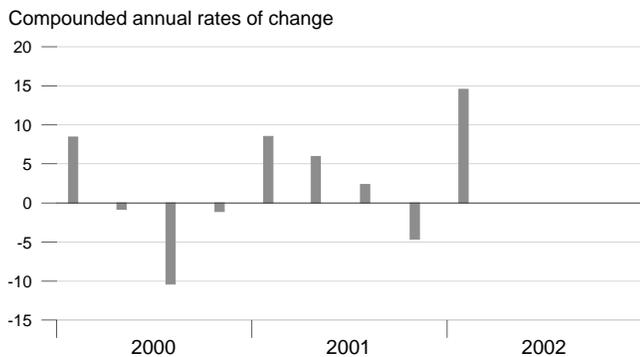
Real Equipment & Software Investment



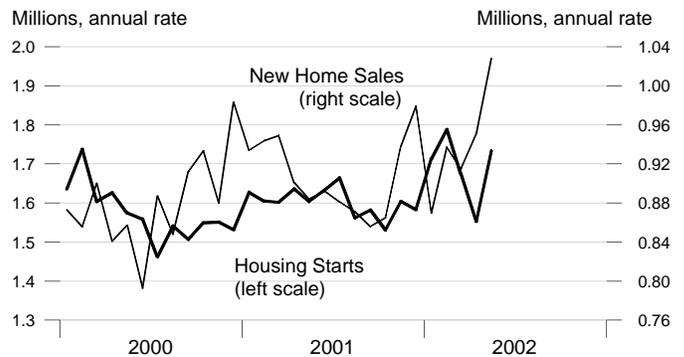
Real Nonresidential Fixed Investment



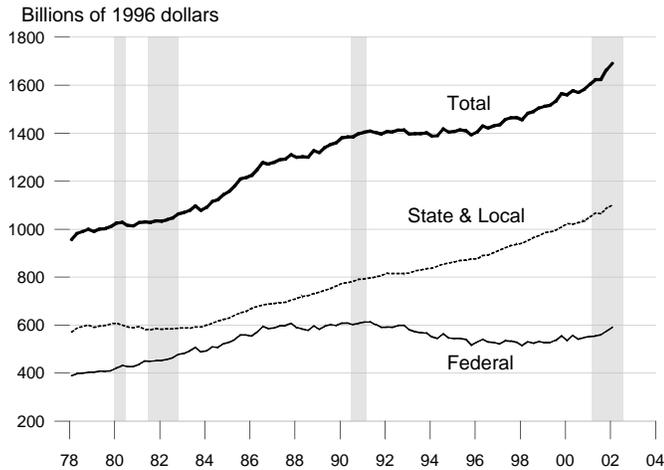
Real Residential Fixed Investment



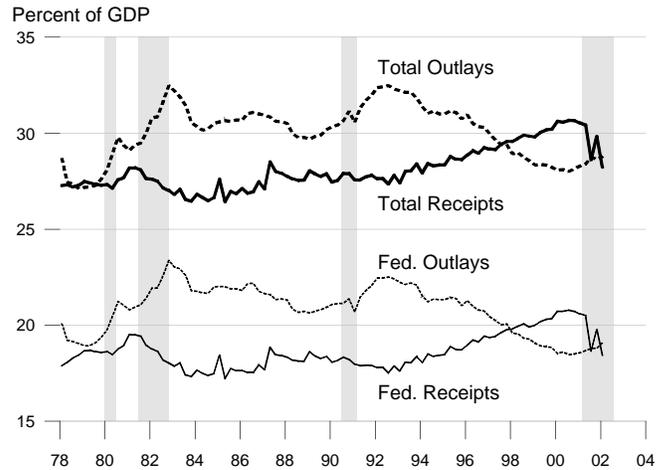
Housing Starts and New Home Sales



Govt. Consumption and Investment



Government Receipts and Outlays



Government Budgets

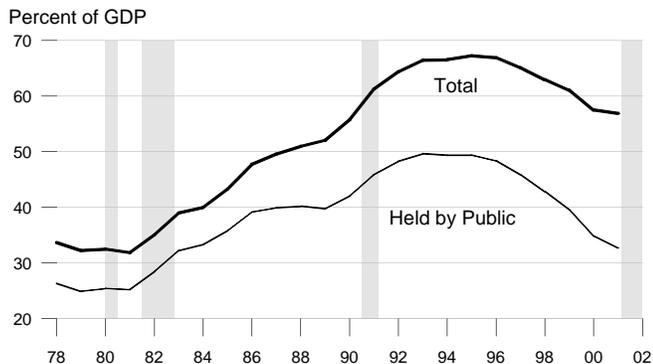
Billions of dollars

National Income Accounts Calendar Years

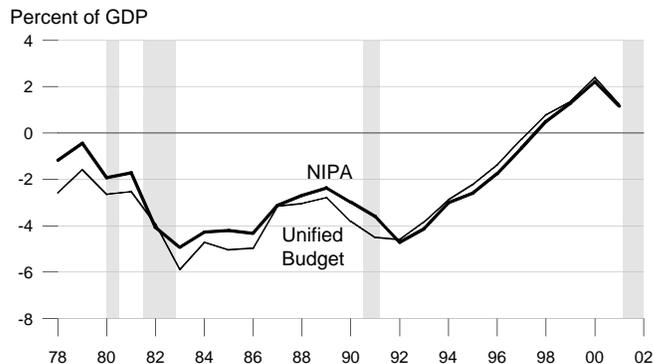
Unified Budget Fiscal Years

	State and Local			Federal			Federal		
	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Expenditures	Surplus or Deficit (-)	Receipts	Outlays	Surplus or Deficit (-)
1991	716.0	723.8	-7.8	1072.3	1287.6	-215.3	1055.0	1324.4	-269.4
1992	772.2	777.2	-5.0	1121.3	1418.9	-297.6	1091.3	1381.7	-290.4
1993	823.2	821.7	1.5	1197.3	1471.5	-274.2	1154.4	1409.5	-255.1
1994	873.8	865.2	8.6	1293.7	1506.0	-212.3	1258.6	1461.9	-203.3
1995	917.9	902.5	15.4	1383.7	1575.7	-192.0	1351.8	1515.8	-164.0
1996	960.4	939.0	21.4	1499.1	1635.9	-136.8	1453.1	1560.6	-107.5
1997	1011.3	980.3	31.0	1625.5	1678.8	-53.3	1579.3	1601.3	-22.0
1998	1074.4	1033.7	40.7	1749.7	1705.9	43.8	1721.8	1652.6	69.2
1999	1143.8	1101.7	42.1	1872.8	1753.6	119.2	1827.5	1701.9	125.5
2000	1222.6	1189.8	32.8	2046.8	1828.3	218.5	2025.2	1788.8	236.4
2001	1293.3	1275.8	17.5	2028.2	1909.2	119.0	1991.0	1863.9	127.1
1999Q2	1126.5	1090.2	36.3	1849.5	1733.0	116.5	564.4	421.3	143.1
1999Q3	1151.4	1113.1	38.3	1886.9	1754.9	132.0	448.7	418.6	30.1
1999Q4	1178.8	1133.9	44.9	1936.5	1793.4	143.1	443.6	463.9	-20.3
2000Q1	1194.4	1161.2	33.2	2003.0	1790.2	212.8	433.7	448.7	-15.0
2000Q2	1215.5	1180.8	34.7	2042.5	1833.4	209.1	656.0	444.3	211.8
2000Q3	1234.3	1199.5	34.8	2064.3	1834.4	229.9	491.7	431.3	60.4
2000Q4	1246.4	1217.8	28.6	2077.5	1855.0	222.5	462.0	464.3	-2.3
2001Q1	1273.4	1251.1	22.3	2087.4	1882.1	205.3	459.8	482.2	-22.5
2001Q2	1294.3	1273.0	21.3	2091.5	1904.7	186.8	660.3	466.5	193.7
2001Q3	1286.6	1284.7	1.9	1907.1	1920.7	-13.6	409.0	450.9	-41.9
2001Q4	1319.1	1294.3	24.8	2026.7	1929.3	97.4	466.3	503.4	-37.1
2002Q1	1318.2	1308.4	9.8	1925.7	1994.0	-68.3	412.6	509.2	-96.6

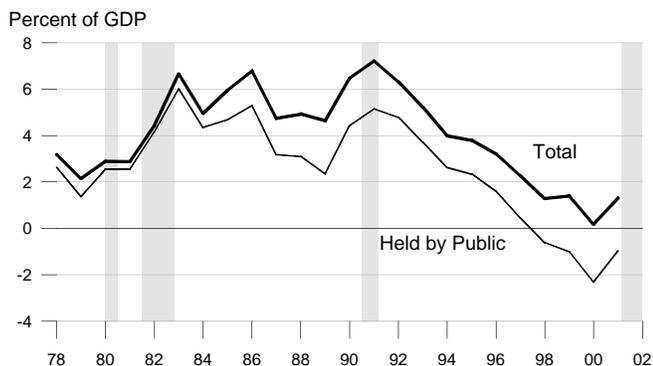
Federal Debt



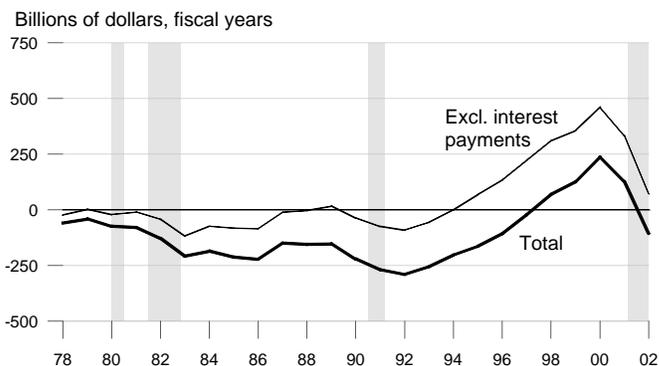
Federal Surplus (+) / Deficit (-)



Change in Federal Debt



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

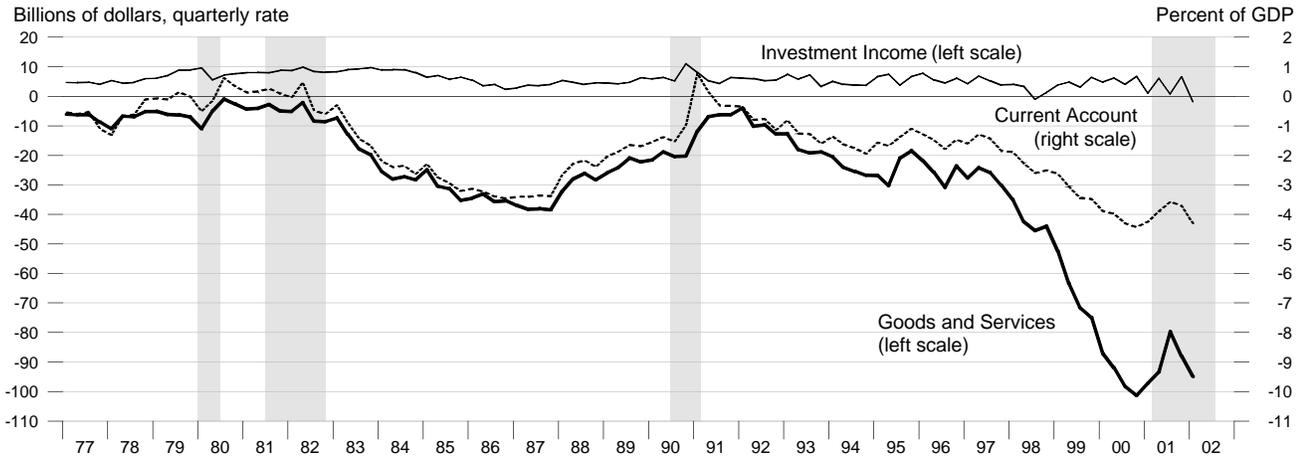


Federal Government Debt

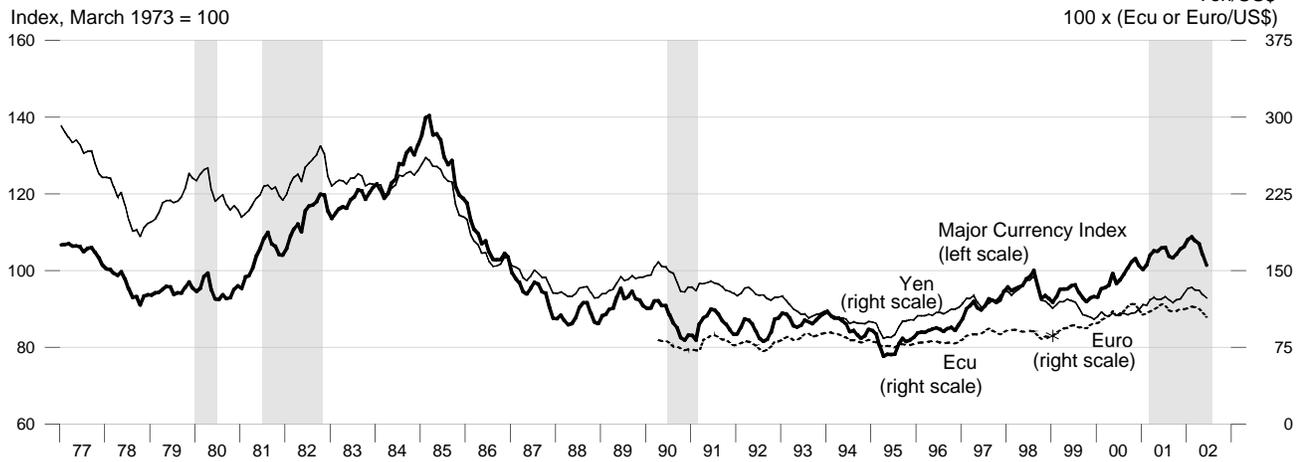
Billions of dollars, end of month or fiscal year
Excludes Agency-issued debt

		Total Public Debt	Held by Agencies and Trusts	Held by Public		Held by Private Investors	
				Total	Federal Reserve Banks	Total	Foreign and International
1999		5656.3	1989.1	3667.2	489.0	3175.4	1281.4
2000		5674.2	2235.7	3438.5	511.4	2936.2	1224.9
2001		5807.5	2468.8	3338.7	534.1	2779.7	1170.1
1999	March	5651.6	1857.1	3794.6	465.7	3327.5	1272.3
	June	5638.8	1953.6	3685.2	484.9	3199.2	1258.8
	September	5656.3	1989.1	3667.2	489.0	3175.4	1281.4
	December	5776.1	2060.6	3715.5	478.0	3233.9	1268.7
2000	March	5773.4	2085.4	3688.0	501.7	3182.8	1273.9
	June	5685.9	2190.2	3495.7	505.0	2987.4	1249.1
	September	5674.2	2235.7	3438.5	511.4	2936.2	1224.9
	December	5662.2	2248.7	3413.5	511.7	2880.4	1201.3
2001	March	5773.7	2339.4	3434.4	523.9	2892.9	1196.8
	June	5726.8	2452.6	3274.2	535.1	2722.6	1167.4
	September	5807.5	2468.8	3338.7	534.1	2779.7	1170.1
	December	5943.4	2549.7	3393.8	551.7	2819.5	1218.1
2002	March	6006.0	2562.4	3443.7	575.4	2849.5	1214.1

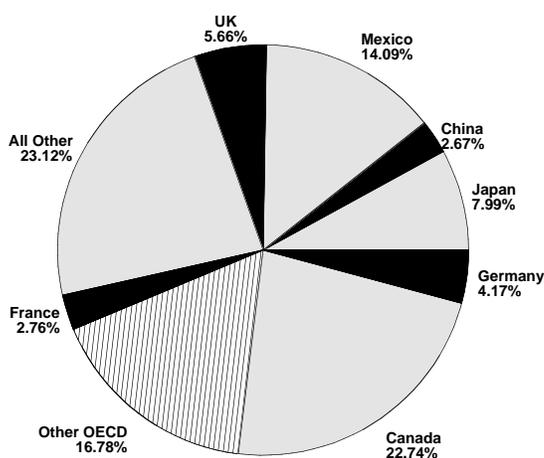
Current Account, Trade and Investment Income Balances



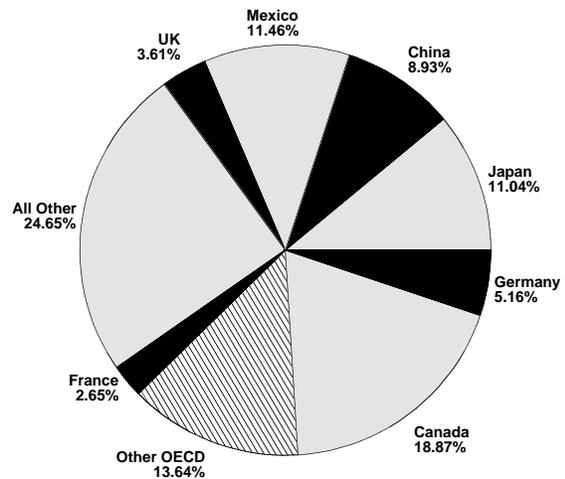
Exchange Rates



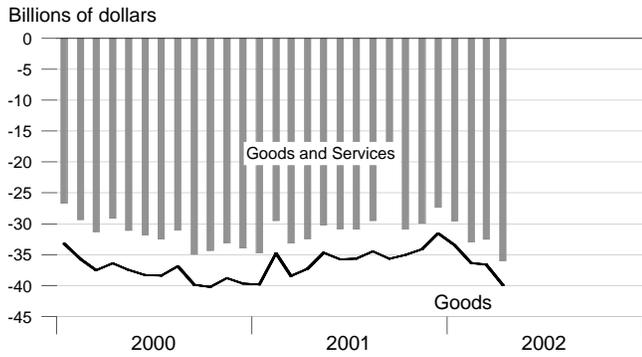
Goods Export Shares, 2001



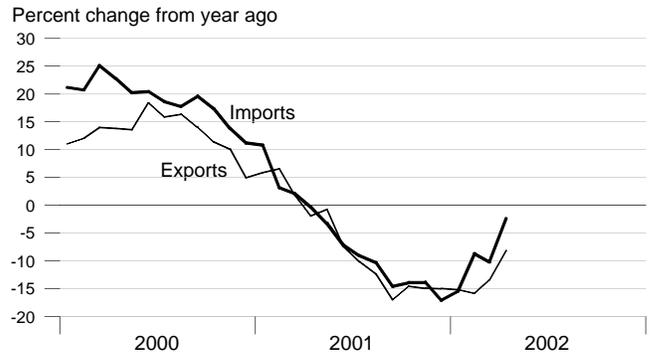
Goods Import Shares, 2001



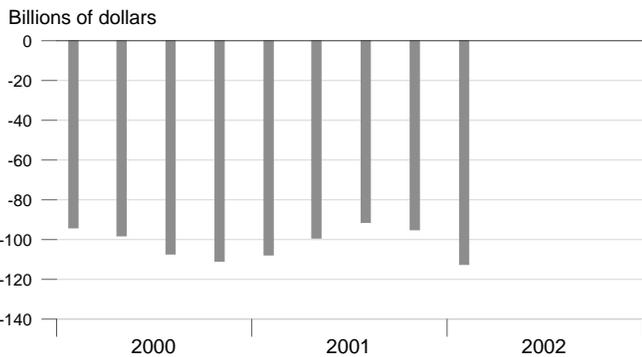
Trade Balance



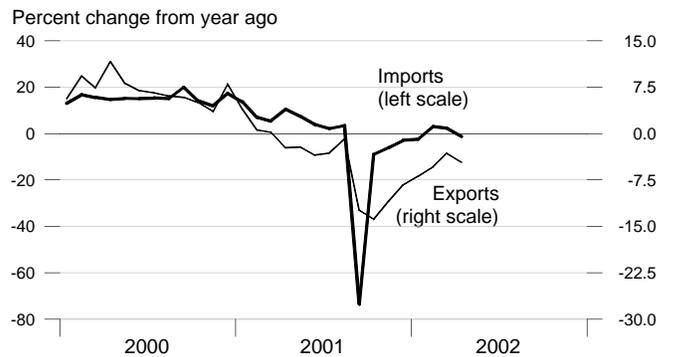
Goods Trade



Current Account Balance



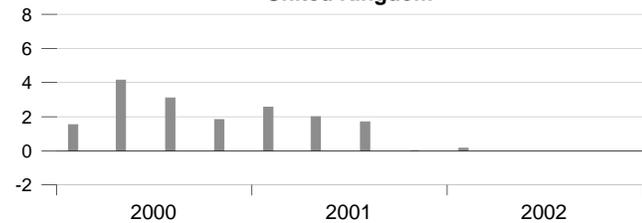
Services Trade



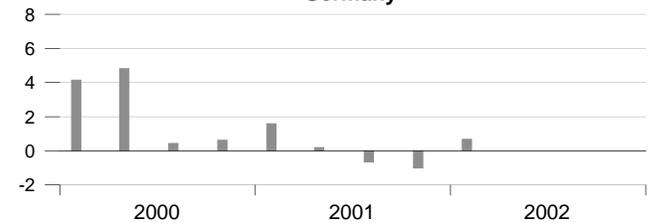
Real GDP Growth of Major Trading Partners

Compounded annual rates of change

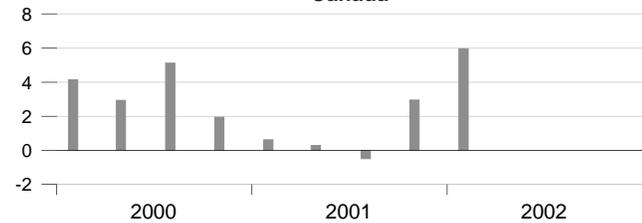
United Kingdom



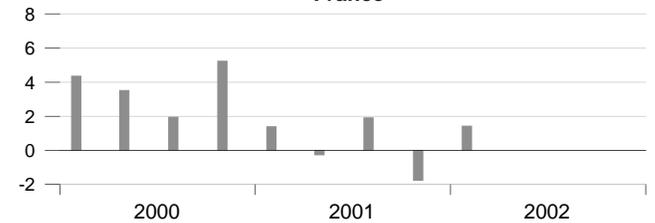
Germany



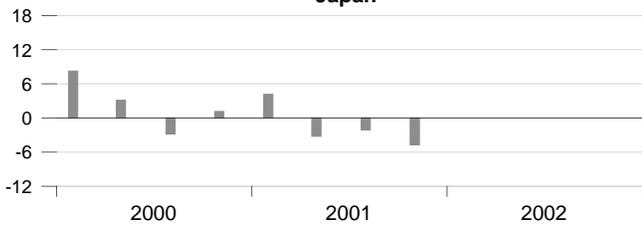
Canada



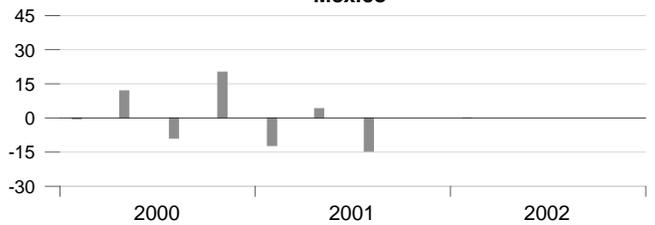
France



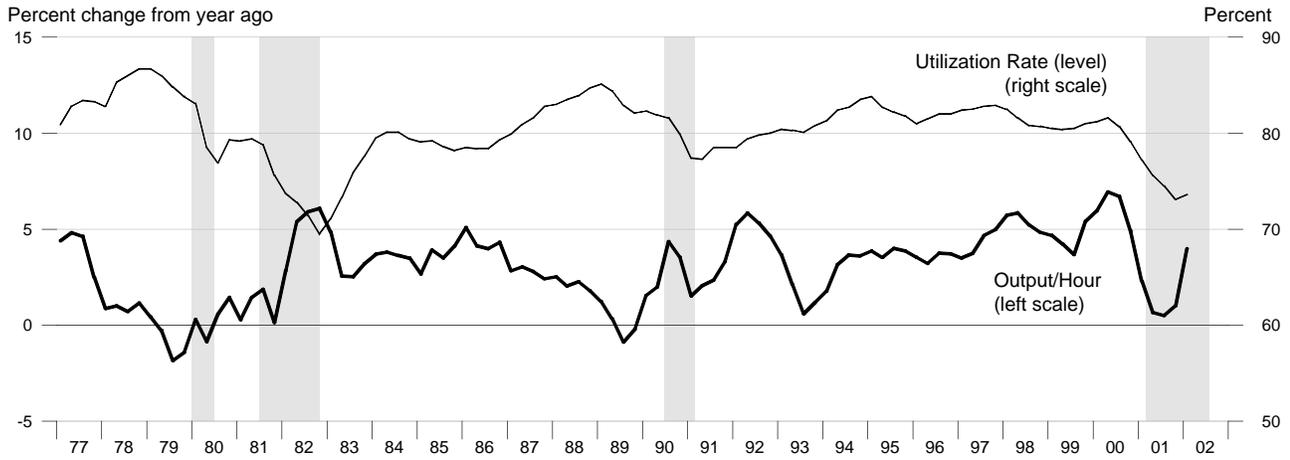
Japan



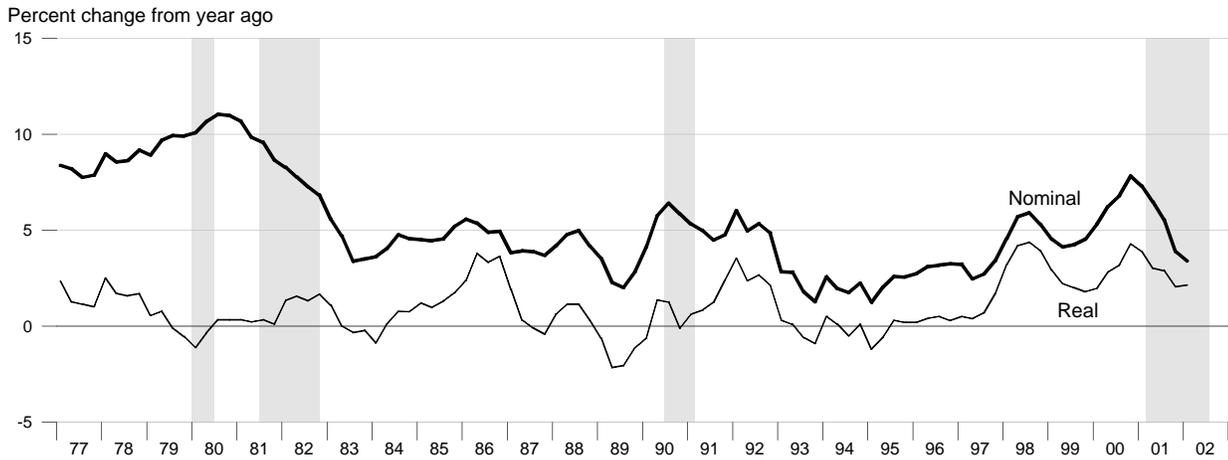
Mexico



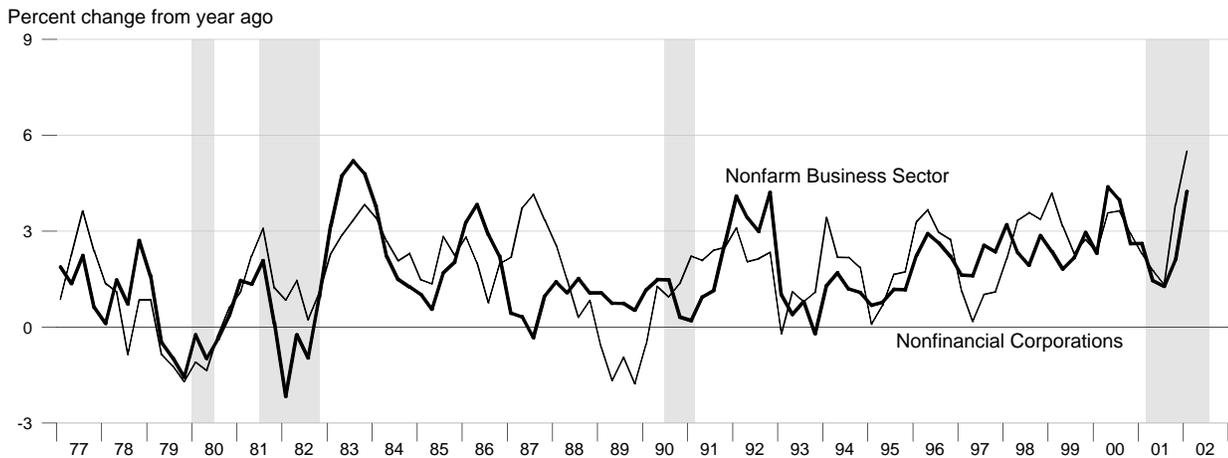
Output per Hour and Capacity Utilization, Manufacturing



Nonfarm Compensation per Hour

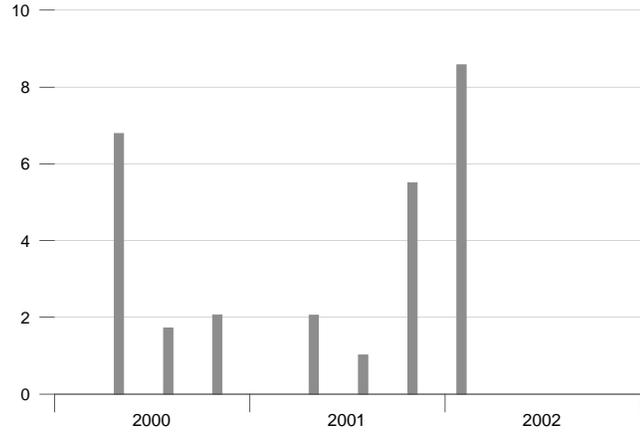


Output per Hour, Nonfarm Business and Nonfarm, Nonfinancial Corporations



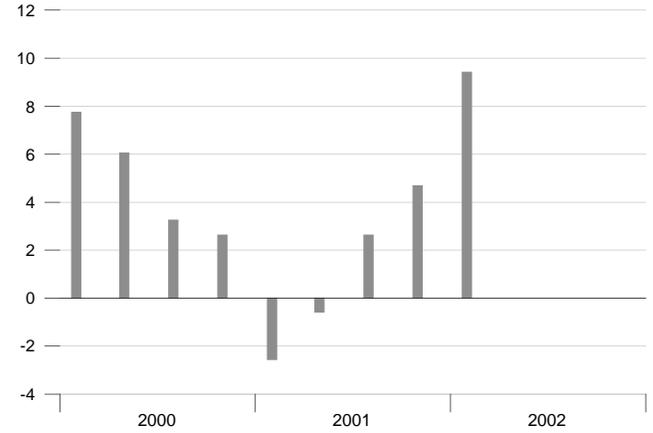
Nonfarm Output per Hour

Compounded annual rates of change



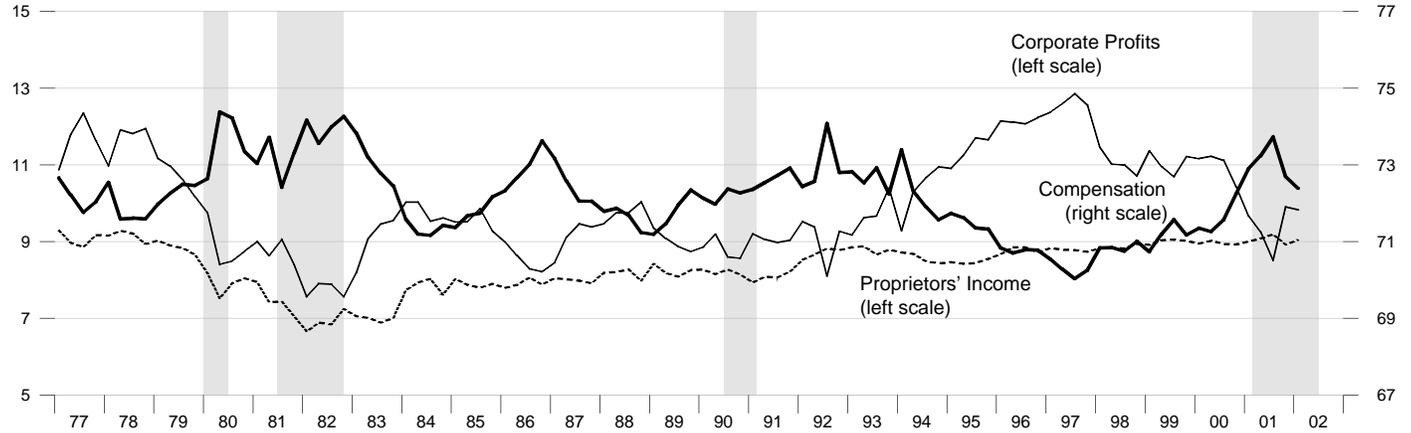
Manufacturing Output per Hour

Compounded annual rates of change



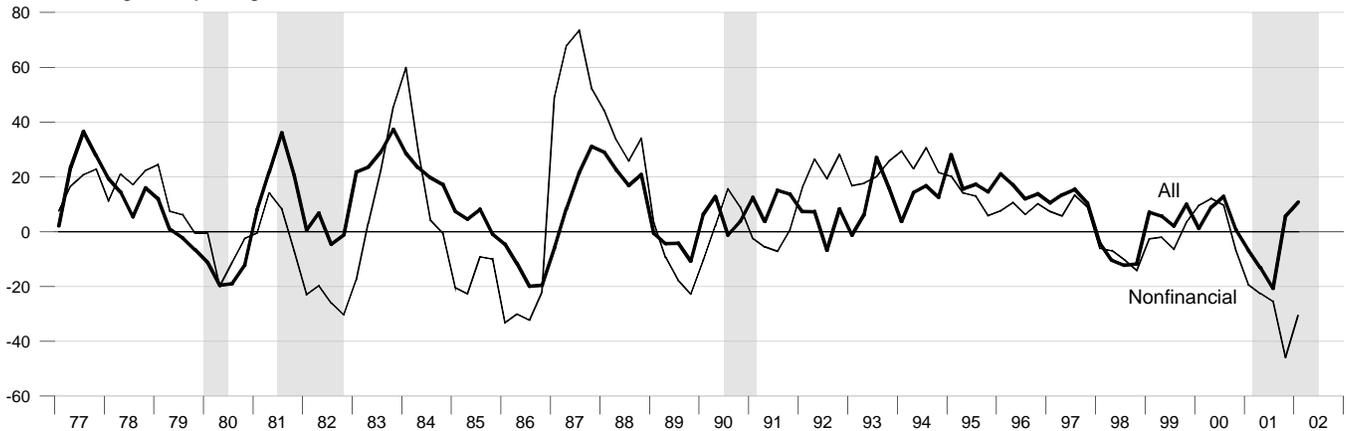
Selected Component Shares of National Income

Percent



Corporate Profits after Tax (with IVA and CCAdj)

Percent change from year ago



		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
1997		129572	2852		2.3	122671	3082		2.6	141.4			3.5
1998		131472	1900		1.5	125851	3180		2.6	145.2			2.7
1999		133503	2031		1.5	128904	3053		2.4	148.4			2.2
2000		135219	1716		1.3	131719	2814		2.2	151.3			2.0
2001		135043	-176		-0.1	131925	207		0.2	150.2			-0.8
2000	1	134995	703	2.1	1.6	130995	882	2.7	2.5	150.9	0.6	2.5	2.7
	2	135246	251	0.7	1.5	131819	824	2.5	2.6	151.3	0.3	1.1	2.3
	3	134987	-259	-0.8	1.1	131876	57	0.2	2.1	151.5	0.1	0.4	1.9
	4	135649	662	2.0	1.0	132185	309	0.9	1.6	151.6	0.1	0.4	1.1
2001	1	135804	155	0.5	0.6	132433	249	0.8	1.1	151.5	-0.1	-0.3	0.4
	2	135221	-583	-1.7	-0.0	132193	-240	-0.7	0.3	150.9	-0.4	-1.7	-0.3
	3	134839	-381	-1.1	-0.1	131943	-250	-0.8	0.1	150.0	-0.6	-2.4	-1.0
	4	134308	-532	-1.6	-1.0	131130	-813	-2.4	-0.8	148.4	-1.0	-4.1	-2.1
2002	1	133894	-414	-1.2	-1.4	130759	-371	-1.1	-1.3	148.2	-0.1	-0.5	-2.2
2000	May	134954	-595	-5.1	1.2	131887	242	2.2	2.6	151.0	-0.4	-4.6	2.1
	Jun	135235	281	2.5	1.4	131925	38	0.3	2.5	151.4	0.3	3.2	2.2
	Jul	134777	-458	-4.0	1.0	131827	-98	-0.9	2.2	151.4	0.0	0.0	1.9
	Aug	135016	239	2.1	1.0	131777	-50	-0.5	2.0	151.3	-0.1	-0.8	1.7
	Sep	135167	151	1.4	1.1	132023	246	2.3	2.0	151.7	0.3	3.2	2.0
	Oct	135485	318	2.9	1.1	132018	-5	-0.0	1.7	151.9	0.1	1.6	1.5
	Nov	135573	88	0.8	0.9	132217	199	1.8	1.6	151.9	0.0	0.0	1.3
	Dec	135888	315	2.8	1.0	132319	102	0.9	1.5	151.1	-0.5	-6.1	0.5
2001	Jan	135870	-18	-0.2	0.7	132382	63	0.6	1.3	152.0	0.6	7.4	0.9
	Feb	135734	-136	-1.2	0.5	132457	75	0.7	1.2	151.3	-0.5	-5.4	0.3
	Mar	135808	74	0.7	0.6	132461	4	0.0	0.8	151.3	0.0	0.0	0.1
	Apr	135424	-384	-3.3	-0.1	132243	-218	-2.0	0.5	151.0	-0.2	-2.4	-0.4
	May	135235	-189	-1.7	0.2	132229	-14	-0.1	0.3	151.0	0.0	0.0	0.0
	Jun	135003	-232	-2.0	-0.2	132108	-121	-1.1	0.1	150.6	-0.3	-3.1	-0.5
	Jul	135106	103	0.9	0.2	132045	-63	-0.6	0.2	150.4	-0.1	-1.6	-0.7
	Aug	134408	-698	-6.0	-0.5	131966	-79	-0.7	0.1	149.9	-0.3	-3.9	-0.9
	Sep	135004	596	5.5	-0.1	131819	-147	-1.3	-0.2	149.6	-0.2	-2.4	-1.4
	Oct	134615	-389	-3.4	-0.6	131414	-405	-3.6	-0.5	148.7	-0.6	-7.0	-2.1
	Nov	134253	-362	-3.2	-1.0	131087	-327	-2.9	-0.9	148.2	-0.3	-4.0	-2.4
	Dec	134055	-198	-1.8	-1.3	130890	-197	-1.8	-1.1	148.3	0.1	0.8	-1.9
2002	Jan	133468	-587	-5.1	-1.8	130871	-19	-0.2	-1.1	148.1	-0.1	-1.6	-2.6
	Feb	134319	851	7.9	-1.0	130706	-165	-1.5	-1.3	148.3	0.1	1.6	-2.0
	Mar	133894	-425	-3.7	-1.4	130701	-5	-0.0	-1.3	148.2	-0.1	-0.8	-2.0
	Apr	133976	82	0.7	-1.1	130707	6	0.1	-1.2	148.3	0.1	0.8	-1.8
	May	134417	441	4.0	-0.6	130748	41	0.4	-1.1	148.2	-0.1	-0.8	-1.9

		Unempl. Rate	Retail and Food Services Sales				Industrial Production				Treasury Yields	
			Billions of dollars	Percent change			Index	Percent change			3-mo Percent	10-yr Percent
		Monthly/ quarterly		Annual rate	Year ago	Monthly/ quarterly		Annual rate	Year ago			
1997		4.9	2769.532			5.0	127.944			6.9	5.06	6.35
1998		4.5	2907.356			5.0	134.504			5.1	4.78	5.26
1999		4.2	3151.004			8.4	139.447			3.7	4.64	5.64
2000		4.0	3360.754			6.7	145.732			4.5	5.82	6.03
2001		4.8	3487.693			3.8	140.392			-3.7	3.39	5.02
2000	1	4.0	835.780	2.8	11.7	9.5	144.033	1.4	5.8	4.9	5.52	6.48
	2	4.0	834.314	-0.2	-0.7	7.1	146.480	1.7	7.0	5.8	5.71	6.18
	3	4.1	843.734	1.1	4.6	6.1	146.686	0.1	0.6	4.8	6.02	5.89
	4	4.0	846.926	0.4	1.5	4.2	145.730	-0.7	-2.6	2.6	6.02	5.57
2001	1	4.2	859.776	1.5	6.2	2.9	143.457	-1.6	-6.1	-0.4	4.82	5.05
	2	4.5	868.481	1.0	4.1	4.1	141.309	-1.5	-5.9	-3.5	3.66	5.27
	3	4.8	866.398	-0.2	-1.0	2.7	139.606	-1.2	-4.7	-4.8	3.17	4.98
	4	5.6	893.038	3.1	12.9	5.4	137.197	-1.7	-6.7	-5.9	1.91	4.77
2002	1	5.6	887.519	-0.6	-2.4	3.2	138.138	0.7	2.8	-3.7	1.72	5.08
	2										1.72	5.10
2000	Jun	4.0	278.919	0.5	6.2	6.8	147.188	0.4	4.8	6.1	5.69	6.10
	Jul	4.1	280.178	0.5	5.6	6.4	146.532	-0.4	-5.2	5.0	5.96	6.05
	Aug	4.1	279.891	-0.1	-1.2	5.4	146.700	0.1	1.4	4.6	6.09	5.83
	Sep	4.0	283.665	1.3	17.4	6.4	146.826	0.1	1.0	4.7	6.00	5.80
	Oct	3.9	282.524	-0.4	-4.7	5.7	146.266	-0.4	-4.5	3.5	6.11	5.74
	Nov	4.0	281.316	-0.4	-5.0	4.0	145.789	-0.3	-3.8	2.7	6.17	5.72
	Dec	4.0	283.086	0.6	7.8	2.8	145.135	-0.4	-5.3	1.6	5.77	5.24
2001	Jan	4.2	286.878	1.3	17.3	4.4	143.934	-0.8	-9.5	0.5	5.15	5.16
	Feb	4.2	287.182	0.1	1.3	2.9	143.509	-0.3	-3.5	-0.4	4.88	5.10
	Mar	4.3	285.716	-0.5	-6.0	1.4	142.928	-0.4	-4.8	-1.3	4.42	4.89
	Apr	4.5	288.366	0.9	11.7	3.8	142.007	-0.6	-7.5	-2.5	3.87	5.14
	May	4.4	290.536	0.8	9.4	4.7	141.595	-0.3	-3.4	-3.4	3.62	5.39
	Jun	4.6	289.579	-0.3	-3.9	3.8	140.326	-0.9	-10.2	-4.7	3.49	5.28
	Jul	4.6	290.319	0.3	3.1	3.6	140.402	0.1	0.7	-4.2	3.51	5.24
	Aug	4.9	291.073	0.3	3.2	4.0	139.954	-0.3	-3.8	-4.6	3.36	4.97
	Sep	5.0	285.006	-2.1	-22.3	0.5	138.461	-1.1	-12.1	-5.7	2.64	4.73
	Oct	5.4	302.770	6.2	106.6	7.2	137.670	-0.6	-6.6	-5.9	2.16	4.57
	Nov	5.6	295.036	-2.6	-26.7	4.9	137.240	-0.3	-3.7	-5.9	1.87	4.65
	Dec	5.8	295.232	0.1	0.8	4.3	136.682	-0.4	-4.8	-5.8	1.69	5.09
2002	Jan	5.6	294.852	-0.1	-1.5	2.8	137.557	0.6	8.0	-4.4	1.65	5.04
	Feb	5.5	296.468	0.5	6.8	3.2	138.125	0.4	5.1	-3.8	1.73	4.91
	Mar	5.7	296.199	-0.1	-1.1	3.7	138.733	0.4	5.4	-2.9	1.79	5.28
	Apr	6.0	299.674	1.2	15.0	3.9	139.097	0.3	3.2	-2.0	1.72	5.21
	May	5.8	297.029	-0.9	-10.1	2.2	139.334	0.2	2.1	-1.6	1.73	5.16
	Jun										1.70	4.93

		Consumer Price Index					Consumer Price Index less Food and Energy					Producer Price Index Finished Goods			
		Percent change					Percent change					Percent change			
		Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago	Year to date	Index	Monthly/ quarterly	Annual rate	Year ago
1997		160.5			2.3		169.5			2.4		131.8			0.4
1998		163.0			1.5		173.4			2.3		130.7			-0.9
1999		166.6			2.2		177.0			2.1		133.0			1.8
2000		172.2			3.4		181.3			2.4		138.0			3.7
2001		177.1			2.8		186.1			2.7		140.7			2.0
2000	1	170.1	1.0	3.9	3.2	3.9	179.5	0.6	2.4	2.2	2.4	136.4	1.1	4.4	3.7
	2	171.5	0.8	3.3	3.3	3.6	180.7	0.6	2.6	2.4	2.5	137.4	0.7	3.0	3.9
	3	173.0	0.9	3.5	3.5	3.6	181.9	0.6	2.6	2.6	2.5	138.3	0.7	2.7	3.6
	4	174.2	0.7	3.0	3.4	3.4	183.0	0.6	2.5	2.5	2.5	139.9	1.2	4.7	3.7
2001	1	175.9	1.0	3.9	3.4	3.9	184.4	0.7	3.0	2.7	3.0	141.8	1.4	5.5	4.0
	2	177.3	0.8	3.1	3.4	3.5	185.5	0.6	2.4	2.6	2.7	142.1	0.2	0.8	3.4
	3	177.6	0.2	0.8	2.7	2.6	186.7	0.7	2.7	2.7	2.7	140.6	-1.1	-4.2	1.6
	4	177.5	-0.1	-0.3	1.9	1.9	187.9	0.7	2.7	2.7	2.7	138.4	-1.5	-5.9	-1.0
2002	1	178.1	0.3	1.4	1.2	1.4	189.0	0.6	2.3	2.5	2.3	138.5	0.0	0.1	-2.4
2000	May	171.2	0.1	1.4	3.1	3.3	180.7	0.2	2.0	2.4	2.6	137.1	0.1	1.8	3.6
	Jun	172.2	0.6	7.2	3.7	3.9	181.0	0.2	2.0	2.5	2.5	138.1	0.7	9.1	4.4
	Jul	172.6	0.2	2.8	3.6	3.8	181.4	0.2	2.7	2.5	2.5	138.1	0.0	0.0	4.1
	Aug	172.7	0.1	0.7	3.4	3.4	181.9	0.3	3.4	2.7	2.6	137.9	-0.1	-1.7	3.3
	Sep	173.6	0.5	6.4	3.5	3.7	182.3	0.2	2.7	2.5	2.6	138.9	0.7	9.1	3.3
	Oct	173.9	0.2	2.1	3.5	3.6	182.6	0.2	2.0	2.5	2.6	139.6	0.5	6.2	3.7
	Nov	174.2	0.2	2.1	3.4	3.4	183.1	0.3	3.3	2.6	2.6	139.9	0.2	2.6	3.8
	Dec	174.6	0.2	2.8	3.4	3.4	183.3	0.1	1.3	2.5	2.5	140.2	0.2	2.6	3.6
2001	Jan	175.6	0.6	7.1	3.7	7.1	183.9	0.3	4.0	2.6	4.0	141.7	1.1	13.6	4.9
	Feb	176.0	0.2	2.8	3.5	4.9	184.4	0.3	3.3	2.8	3.7	142.0	0.2	2.6	4.0
	Mar	176.1	0.1	0.7	3.0	3.5	184.8	0.2	2.6	2.7	3.3	141.7	-0.2	-2.5	3.1
	Apr	176.6	0.3	3.5	3.3	3.5	185.1	0.2	2.0	2.6	3.0	142.1	0.3	3.4	3.8
	May	177.4	0.5	5.6	3.6	3.9	185.4	0.2	2.0	2.6	2.8	142.4	0.2	2.6	3.9
	Jun	177.8	0.2	2.7	3.3	3.7	185.9	0.3	3.3	2.7	2.9	141.7	-0.5	-5.7	2.6
	Jul	177.3	-0.3	-3.3	2.7	2.7	186.3	0.2	2.6	2.7	2.8	140.0	-1.2	-13.5	1.4
	Aug	177.4	0.1	0.7	2.7	2.4	186.7	0.2	2.6	2.6	2.8	140.6	0.4	5.3	2.0
	Sep	178.1	0.4	4.8	2.6	2.7	187.1	0.2	2.6	2.6	2.8	141.1	0.4	4.4	1.6
	Oct	177.6	-0.3	-3.3	2.1	2.1	187.4	0.2	1.9	2.6	2.7	139.2	-1.3	-15.0	-0.3
	Nov	177.5	-0.1	-0.7	1.9	1.8	188.1	0.4	4.6	2.7	2.9	138.3	-0.6	-7.5	-1.1
	Dec	177.3	-0.1	-1.3	1.5	1.5	188.3	0.1	1.3	2.7	2.7	137.8	-0.4	-4.3	-1.7
2002	Jan	177.6	0.2	2.0	1.1	2.0	188.6	0.2	1.9	2.6	1.9	137.8	0.0	0.0	-2.8
	Feb	178.0	0.2	2.7	1.1	2.4	189.1	0.3	3.2	2.5	2.6	138.1	0.2	2.6	-2.7
	Mar	178.6	0.3	4.1	1.4	3.0	189.3	0.1	1.3	2.4	2.1	139.5	1.0	12.9	-1.6
	Apr	179.5	0.5	6.2	1.6	3.8	189.8	0.3	3.2	2.5	2.4	139.2	-0.2	-2.6	-2.0
	May	179.5	0.0	0.0	1.2	3.0	190.1	0.2	1.9	2.5	2.3	138.6	-0.4	-5.1	-2.7

Notes

Pages 4, 5: **Final sales** is gross domestic product (GDP) minus change in private inventories. **Advance, preliminary, and final GDP growth rates** are released during the first, second, and third months of the following quarter. Changes result from incorporation of more complete information. Real GDP is measured in 1996 dollars. The **ISM** (formerly Purchasing Managers') **index** is a weighted average of diffusion indexes for new orders, production, supplier deliveries, inventories, and employment. **Aggregate and average weekly hours** are paid hours of production and nonsupervisory employees. The **inventory-sales ratio** uses nominal (current-dollar) inventory and sales data.

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

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

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

Pages 10, 11: **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. The 90 percent confidence intervals for the unemployment rate (± 0.2 percentage points) and change in household survey employment ($\pm 376,000$) measure uncertainty due to sample size. The **available labor supply** is the sum of the unemployed and those persons not in the labor force but who want to work now. Because the household survey was changed in January 1994, data prior to this date are not strictly comparable.

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

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

Pages 16, 17: **Government consumption and investment** is current expenditures on goods and services, including capital consumption (depreciation) and gross investment, as reported in the NIPAs. The **unified federal budget surplus/deficit** differs from **NIPA basis** in four main ways: (1) NIPA excludes transactions involving existing assets; (2) NIPA outlays exclude government investment and include consumption of government capital, while unified budget outlays do

the reverse; (3) NIPA accounts exclude Puerto Rico and U.S. territories; and (4) various timing issues are handled differently. **Outlays and receipts** are from the NIPAs, except as noted. Since 1977, the federal **fiscal year** starts on October 1. Excluded agency debt was 0.6 percent of federal debt at the end of fiscal 1997. **Federal debt held by the public** includes holdings of the Federal Reserve System and excludes holdings of the social security and other federal trust funds. Federal grants in aid to state and local governments appear in both state and local receipts and federal outlays.

Pages 18, 19: The **trade balance** (shown on a balance of payments basis) is the difference between exports and imports of goods (merchandise) and services. It is nearly identical in concept to the **net exports** component of GDP, but differs slightly in accounting details. The **investment income balance** equals income received from U.S.-owned assets in other countries minus income paid on foreign-owned assets in the U.S. The investment income balance is nearly identical in concept to the difference between gross national product and gross domestic product, but differs in accounting details. The **current account balance** is the trade balance plus the balance on investment income plus net unilateral transfers to the U.S. from other countries.

Pages 20, 21: **Output per hour (Y/H)**, **unit labor cost (C/Y)**, and **compensation per hour (C/H)** are indexes which approximately obey the following relationship: $\%(Y/H) + \%(C/Y) = \%(C/H)$ with $\%()$ meaning percent changes. Unit labor cost is shown on page 9. **Real compensation per hour** uses the CPI to adjust for the effects of inflation. Nonfarm business accounted for about 76 percent of the value of GDP in 1996, while nonfinancial corporations accounted for about 54 percent. **Inventory valuation adjustments (IVA)** remove the effect of changes in the value of existing inventories from corporate profits and proprietors' income. (This change in value does not correspond to current production and therefore is not part of GDP). **Capital consumption adjustments (CCAdj)** increase profits and proprietors' income by the difference between estimates of economic depreciation and depreciation allowed by the tax code. Components of national income not shown are rental income of persons and net interest.

NOTE: Measures of retail sales (pp. 12-13), manufacturers' orders, shipments and inventories (p. 15), and the total business inventory-to-sales ratio (p. 5) are based on the North American Industry Classification System (NAICS). Before January 1992, data are on the old Standard Industrial Classification (SIC) system. For more information, see <http://www.census.gov/epcd/www/naics.html>.

Sources

Bureau of Economic Analysis (BEA), U.S. Dept. of Commerce

National income and product accounts, international trade and investment data (except by country), auto and light truck sales

Census Bureau, U.S. Dept. of Commerce

Inventory-sales ratios, retail sales, capital goods orders, housing starts, exports and imports by country

Bureau of Labor Statistics (BLS), U.S. Dept. of Labor

All employment-related data, employment cost index, consumer and producer price indexes, unit labor cost, output per hour, compensation per hour, multifactor productivity

United States Department of Treasury

Unified budget receipts, outlays, deficit, debt

Federal Reserve Board

Index of industrial production, treasury yields, exchange rates, capacity utilization, household debt

The Survey Research Center, The University of Michigan

Consumer sentiment index

The Conference Board

Help-wanted advertising index

Organization for Economic Cooperation and Development (OECD)

GDP for major trading partners (not available on FRED)