



## Castles in the Sky?

Over the past 10 years (1991:Q4 through 2001:Q4), the average price of single-family homes has increased by 15 percent relative to the average bundle of goods and services (as measured by the index of personal consumption expenditure less food and energy—the core PCE). Although homeowners enjoy an increase in wealth as their dwellings appreciate, their opportunity costs of shelter increase as well. The imputed rent of a house is approximately the product of the market value of the house and the interest rate. Hence, the percentage increase in the value of the house roughly equals the percentage increase in the price of shelter. The question is whether house price inflation really makes households better off.

Let us start out with a homeowner who receives a constant stream of labor income per period—his wage. For simplicity, let us break down total consumption into shelter and all other consumption goods. The household's situation is depicted in the figure below, where the solid line represents his budget constraint given his current wealth as defined by the value of his home and the present value of the future wage income. Suppose that the household's most preferred combination of shelter and other consumption is point Q.

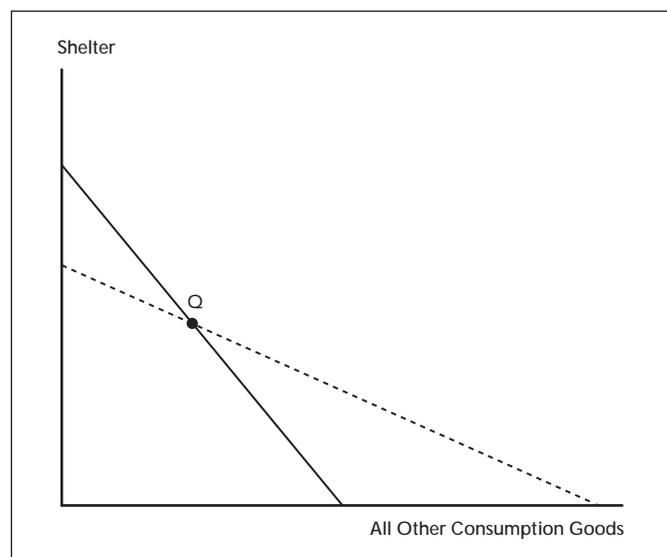
Now assume that the price index of houses increases relative to the price index of all other consumption goods. With the household's income and the dollar price of all other consumption goods constant, his wealth increases; but so does the price of shelter relative to all other consumption goods. If the household keeps living in the same house, he keeps consuming the same combination of shelter and all other consumption goods. Hence, in consumption terms, the increase in wealth does not make him better off.

Clearly, point Q is not optimal anymore. Because the price of shelter has increased (relative to all other consumption goods), the household faces a new budget constraint—the dashed line in the figure below. Along

the new budget line, the most preferred combination lies to the southeast of point Q—otherwise the household would have chosen one of the points northwest of point Q in the first place. The new most preferred combination consists of less shelter (that is, a smaller house) and more consumption of all other goods.

In summary, if the household does not substitute other consumption for shelter—possibly because of high transactions costs in the housing market—the household is no better off than before. On the other hand, if the household responds to the change in the relative price of shelter, he is unambiguously better off. Finally, it should be mentioned that there is a plethora of other (positive or negative) wealth effects ensuing from house price inflation. For instance, an appreciation of the home expands the household's borrowing capacity because he is able to provide more collateral and can thus borrow more and at a lower rate. On the other hand, home price inflation increases the property tax bill. These secondary effects are not captured by the figure below.

—Frank A. Schmid



# Table of Contents

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Page	
3	Economy at a glance
4	Output and growth
7	Interest rates
8	Inflation and prices
10	Labor markets
12	Consumer spending
14	Investment spending
16	Government revenues, spending, and debt
18	International trade
20	Productivity and profits
22	Quick reference tables
27	Notes and sources

## ***Conventions used in this publication:***

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

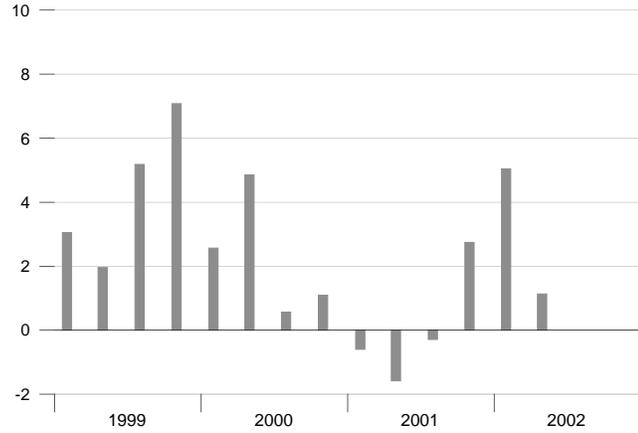
$$100 \times \left[ \left( \frac{x_t}{x_{t-1}} \right)^4 - 1 \right]$$

For monthly data replace 4 with 12.

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

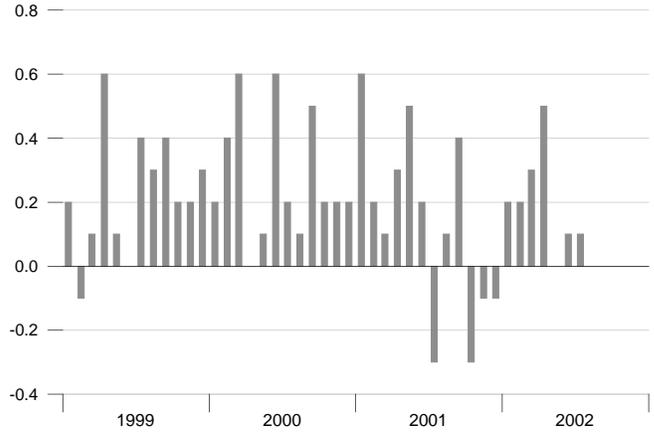
### Real GDP Growth

Compounded annual rates of change



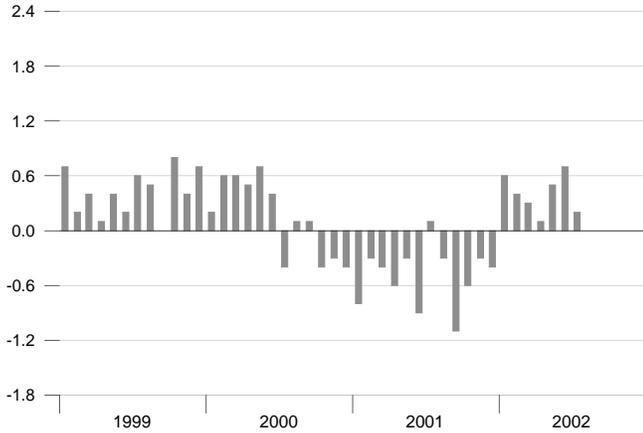
### Consumer Price Index

Percent change



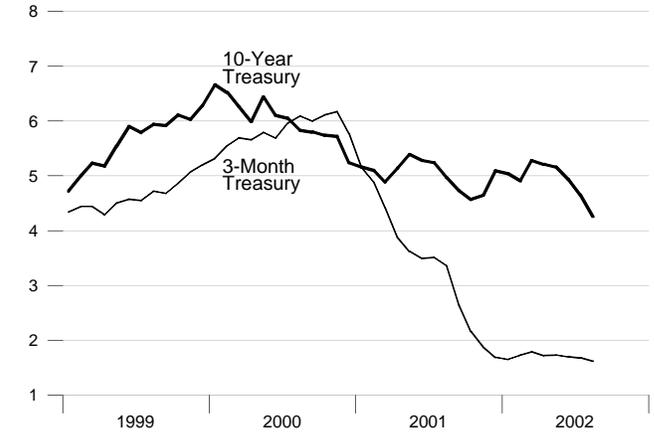
### Industrial Production

Percent change



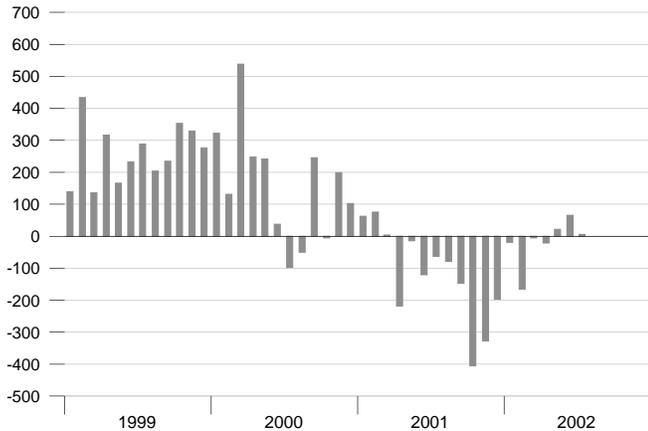
### Interest Rates

Percent



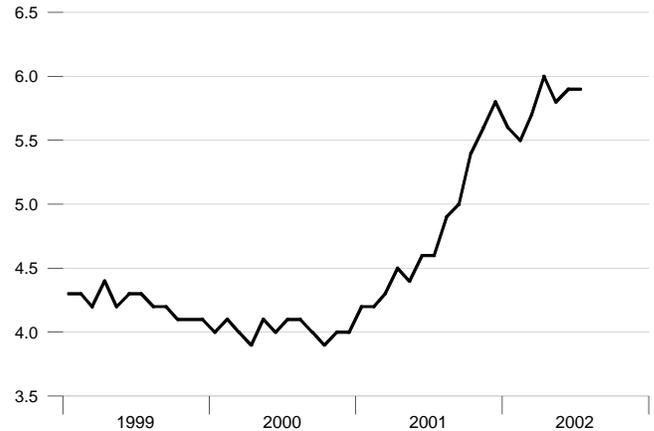
### Change in Nonfarm Payrolls

Thousands



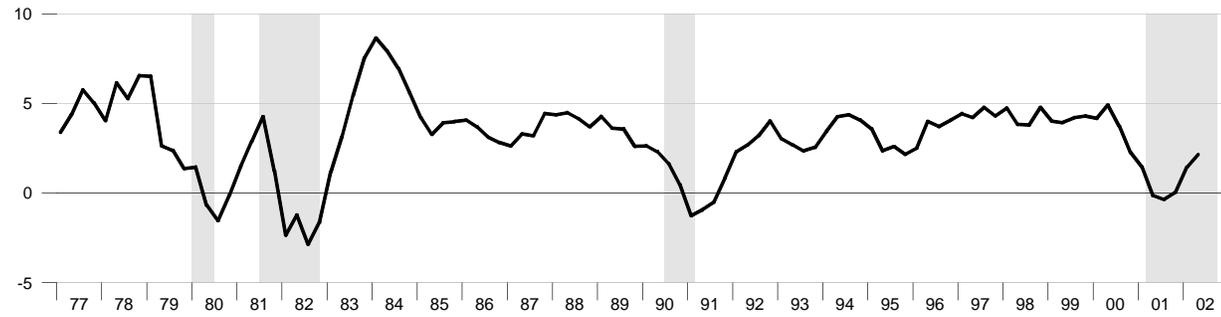
### Unemployment Rate

Percent of labor force



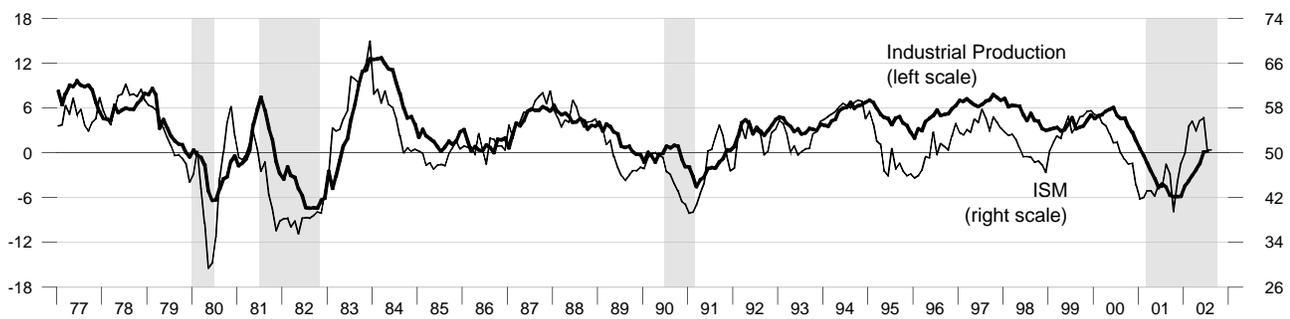
### Real Gross Domestic Product

Percent change from year ago



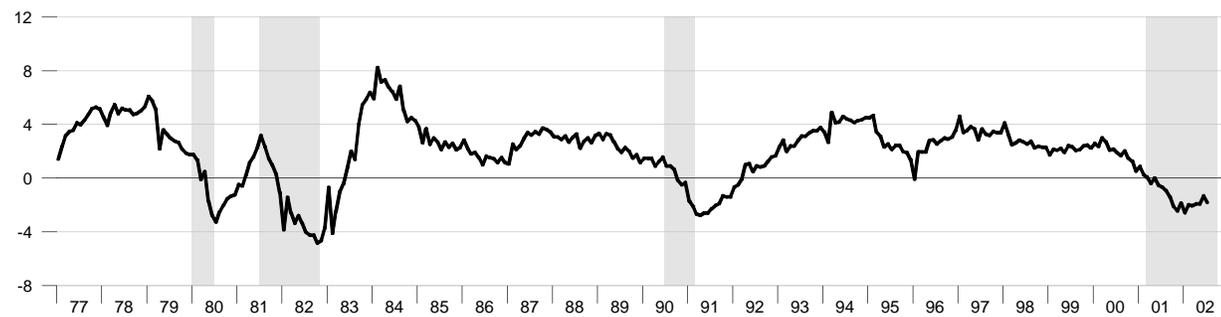
### Industrial Production and Institute for Supply Management (ISM) Indexes

Percent change from year ago



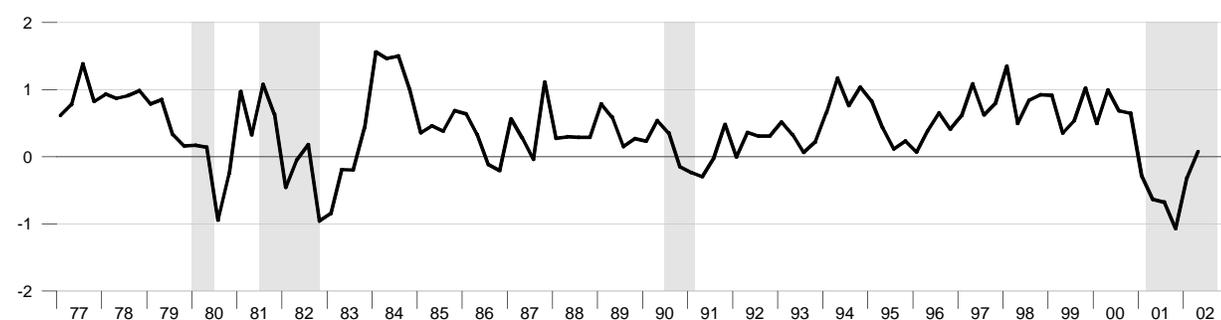
### Aggregate Private Nonfarm Hours

Percent change from year ago

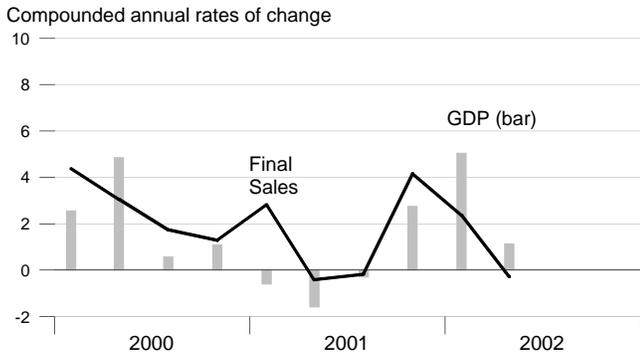


### Real Change in Private Inventories

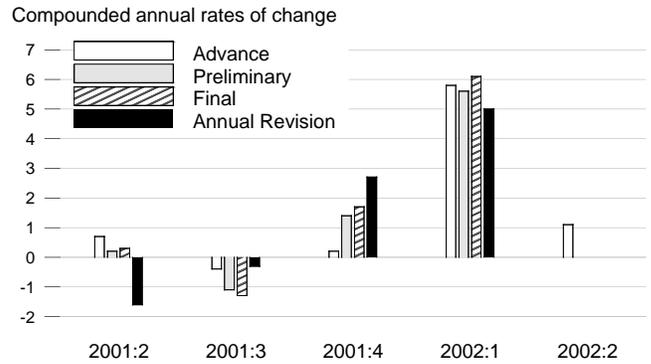
Percent of GDP



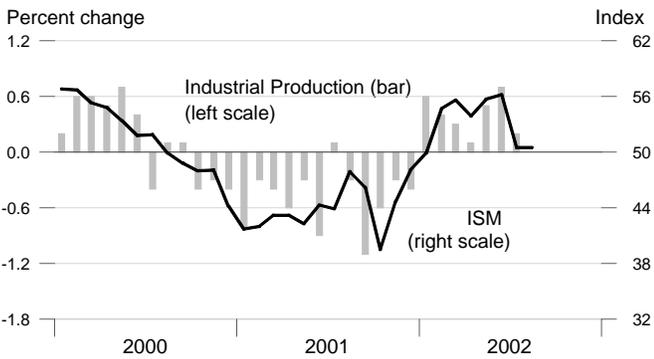
### Real Final Sales and GDP



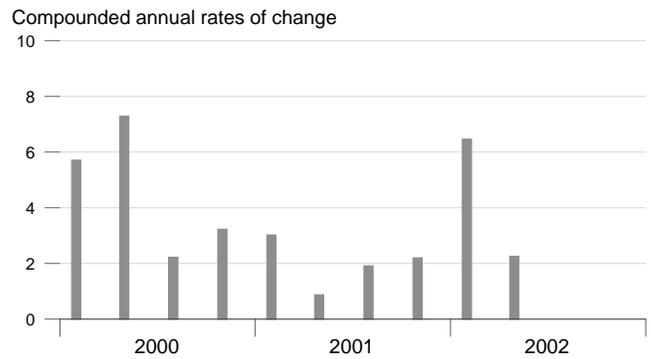
### Real GDP Revisions



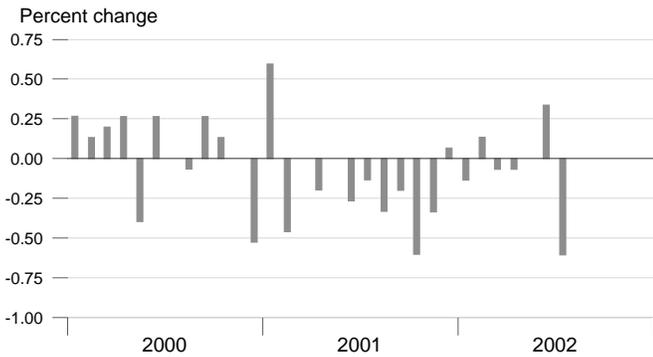
### Industrial Production and ISM Index



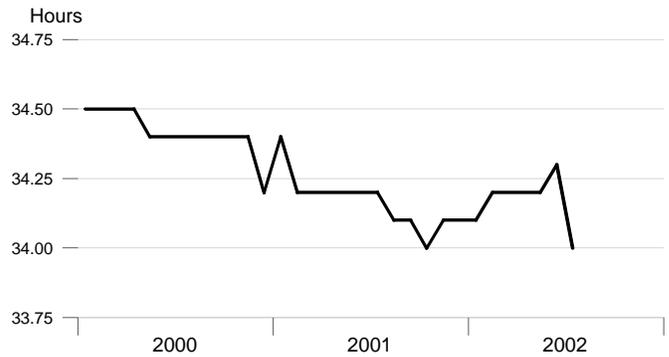
### Nominal Gross Domestic Product



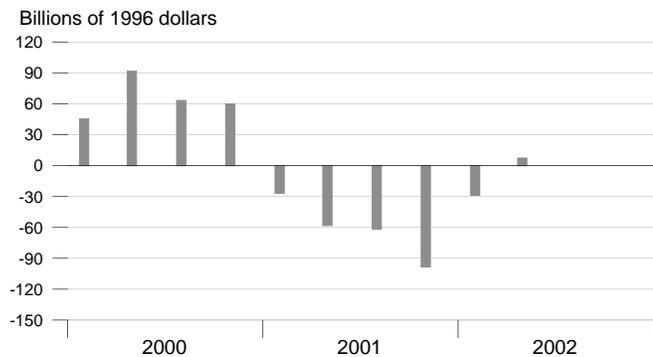
### Aggregate Private Nonfarm Hours



### Average Weekly Private Nonfarm Hours



### Real Change in Private Inventories

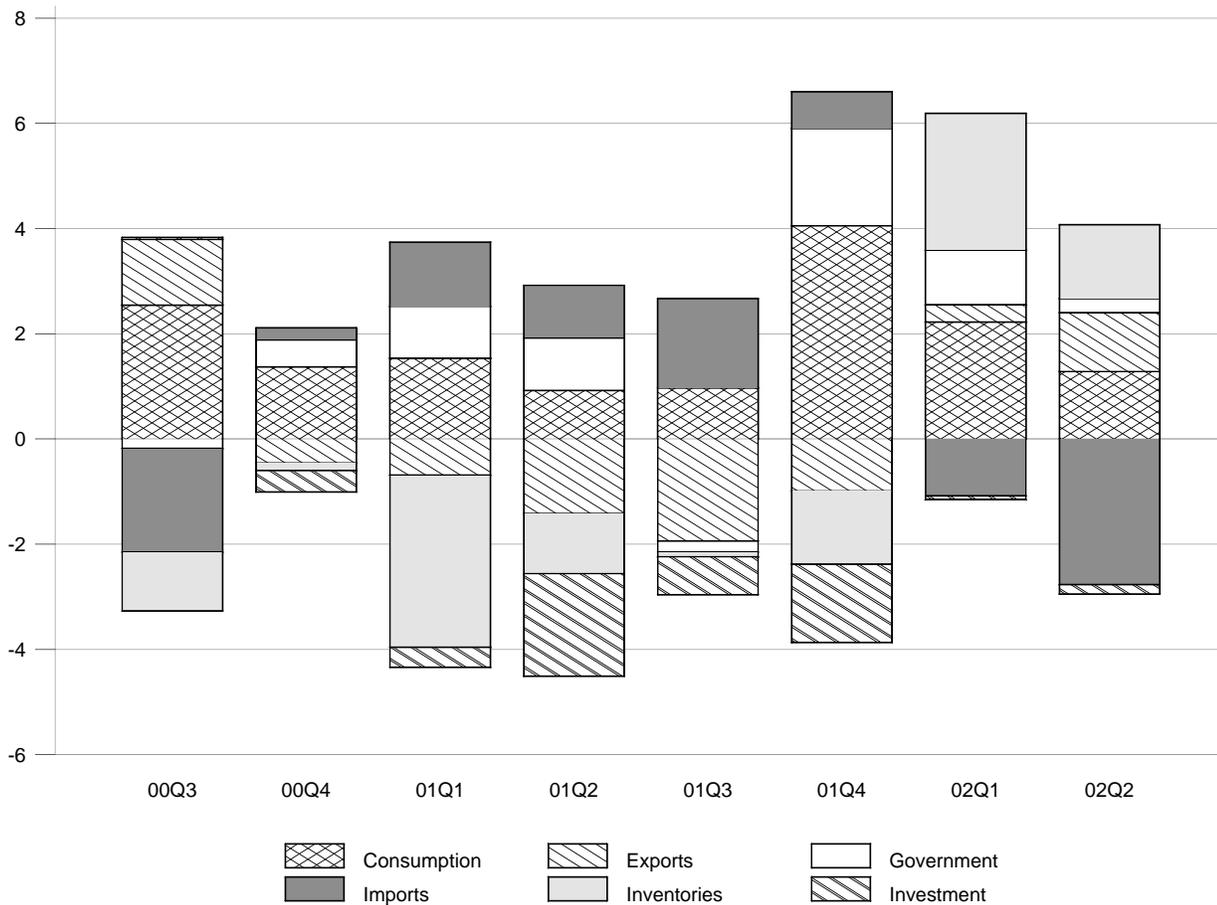


### Inventory-Sales Ratio



### Contribution of Components to Real GDP Growth

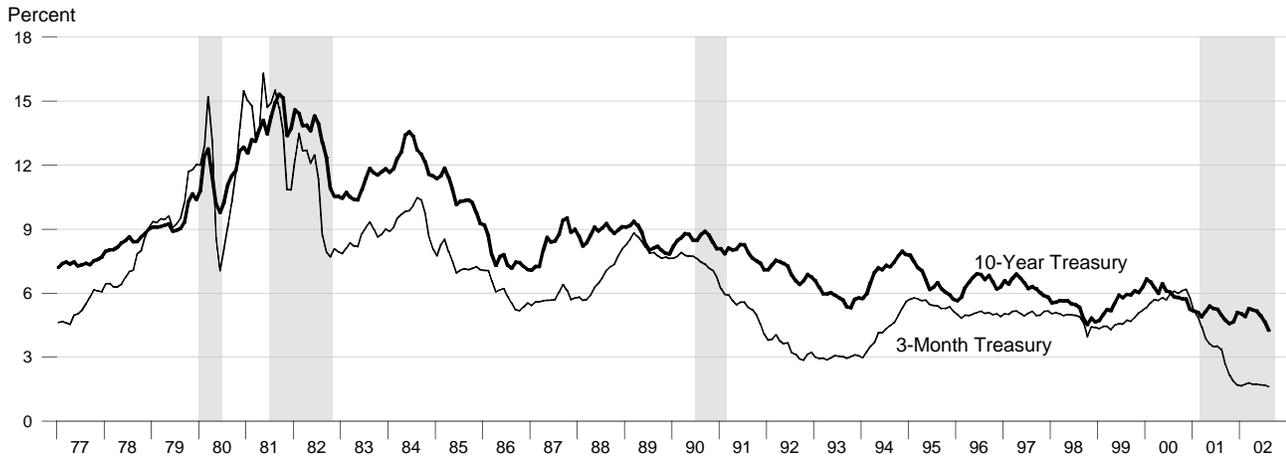
Percentage points at compounded annual rates



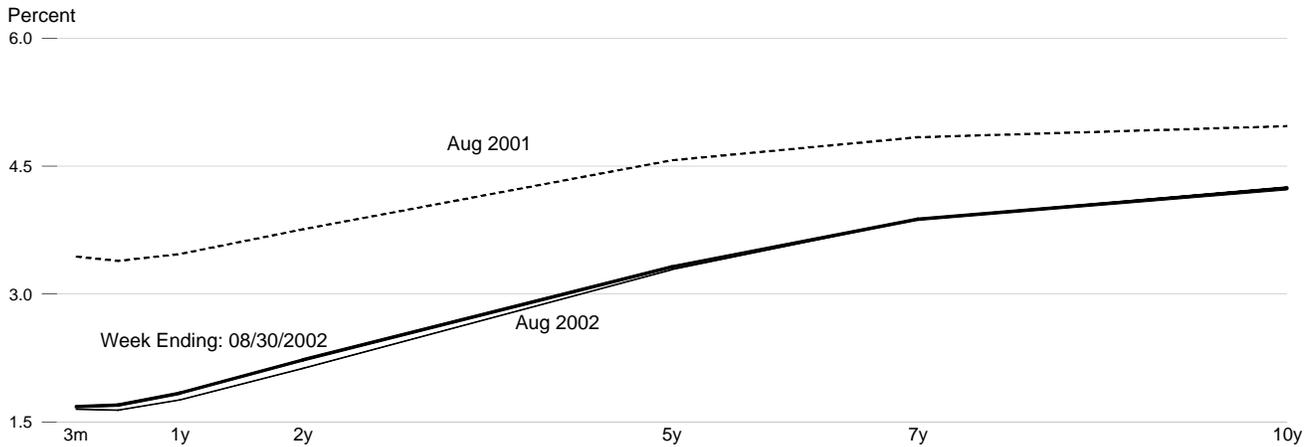
### Contributions to Real GDP Growth Rate

	2000		2001				2002	
	3rd	4th	1st	2nd	3rd	4th	1st	2nd
<b>Final Sales</b>	1.69	1.23	2.67	-0.45	-0.20	4.13	2.44	-0.27
<b>Change in Inventory</b>	-1.12	-0.14	-3.27	-1.14	-0.09	-1.39	2.60	1.40
<b>Consumption</b>	2.54	1.37	1.53	0.92	0.97	4.05	2.22	1.28
<b>Fixed Investment</b>	0.04	-0.41	-0.38	-1.95	-0.72	-1.49	-0.07	-0.18
Nonresidential	0.46	-0.41	-0.71	-1.93	-0.73	-1.33	-0.66	-0.28
Residential	-0.42	0.00	0.34	-0.02	0.02	-0.16	0.60	0.10
<b>Government</b>	-0.18	0.51	0.99	1.00	-0.21	1.85	1.04	0.27
Federal	-0.45	0.12	0.54	0.36	0.07	0.80	0.47	0.49
State and Local	0.28	0.39	0.45	0.64	-0.28	1.05	0.56	-0.22
<b>Net Exports</b>	-0.72	-0.23	0.53	-0.42	-0.24	-0.28	-0.75	-1.65
Exports	1.25	-0.46	-0.69	-1.42	-1.94	-0.99	0.33	1.12
Imports	-1.97	0.23	1.22	1.00	1.70	0.70	-1.08	-2.77
<b>Residual</b>	0.13	0.06	0.45	0.50	0.07	0.42	-0.05	0.30
<b>Real GDP Growth</b>	0.57	1.09	-0.60	-1.59	-0.29	2.74	5.04	1.13

### Interest Rates



### Treasury Yield Curve

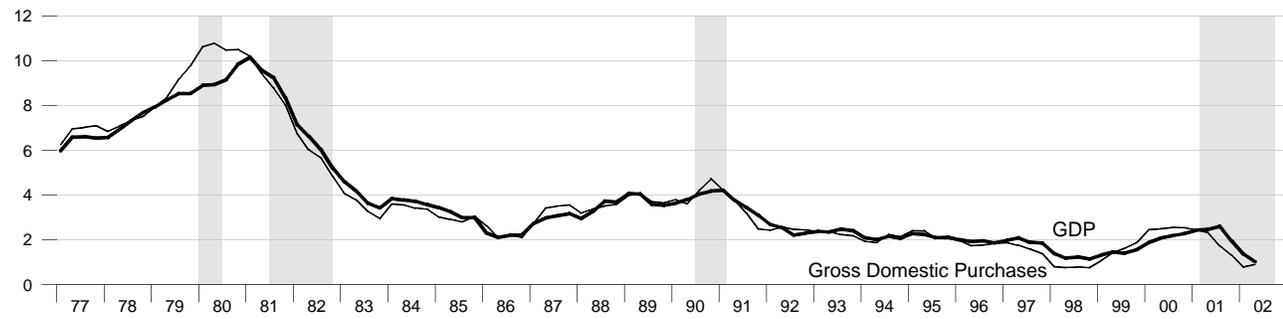


### Standard and Poor's 500 Index with Reinvested Dividends



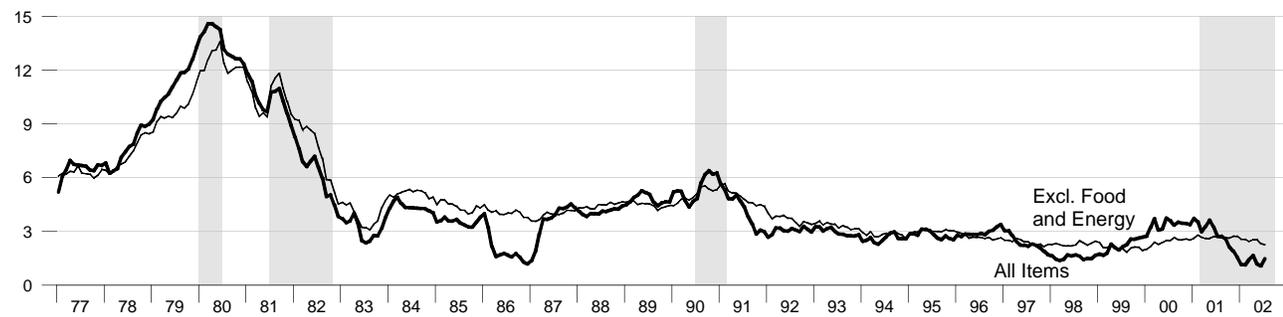
### NIPA Chain Price Indexes

Percent change from year ago



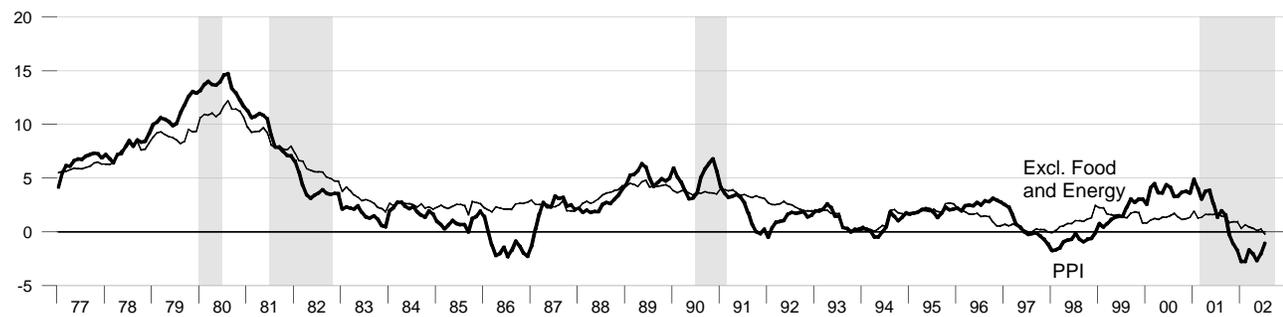
### Consumer Price Index

Percent change from year ago



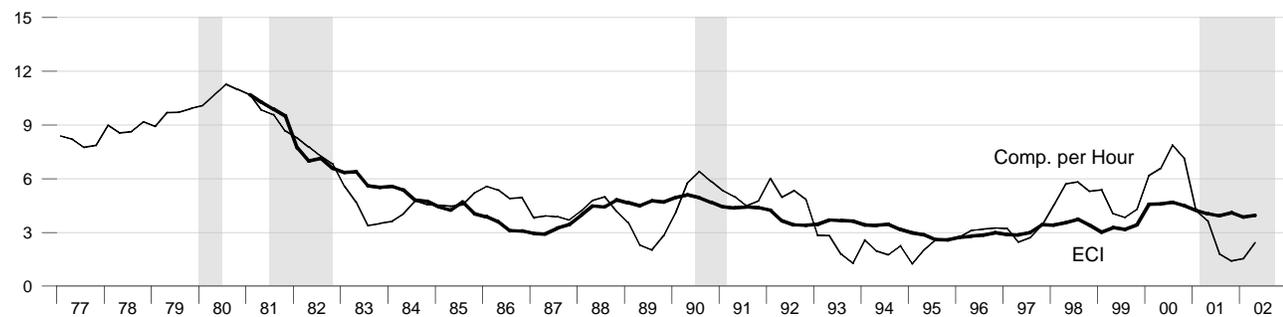
### Producer Price Index, Finished Goods

Percent change from year ago

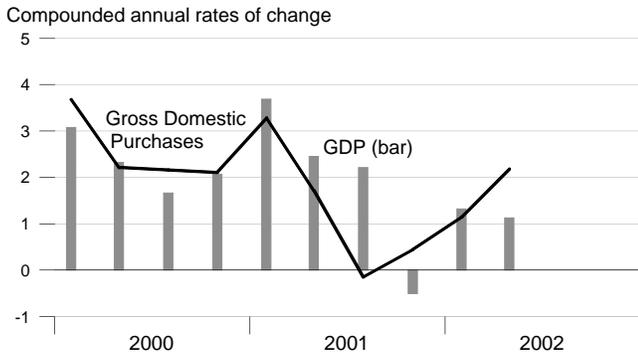


### Employment Cost Index and Compensation per Hour

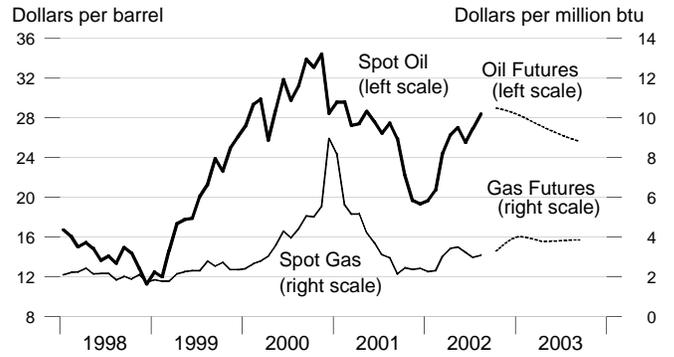
Percent change from year ago



### NIPA Chain Price Indexes

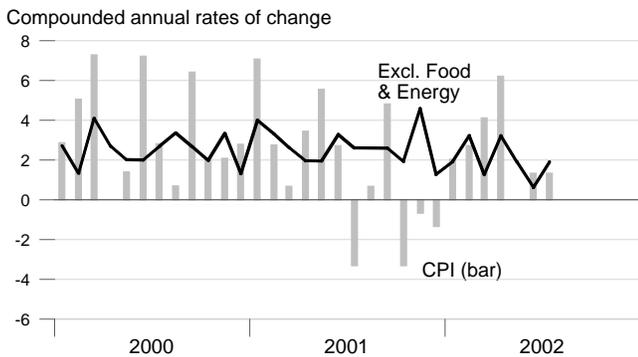


### Oil & Natural Gas Prices: Spot & Futures

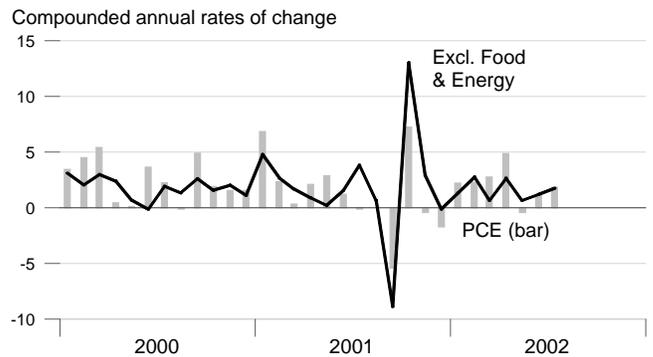


Note: Futures prices as of 08/30/2002

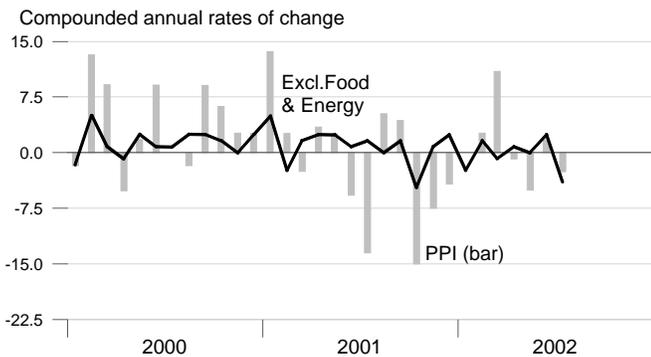
### Consumer Price Index



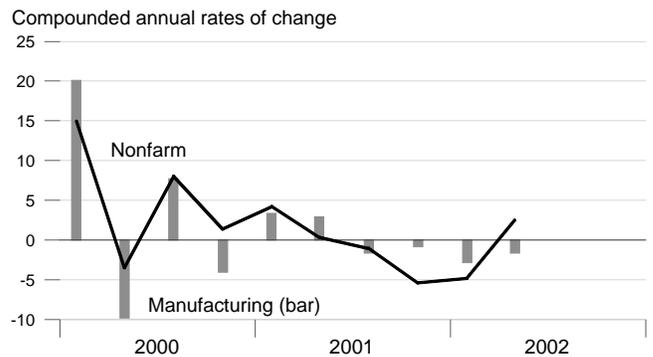
### Consumption Chain Price Index



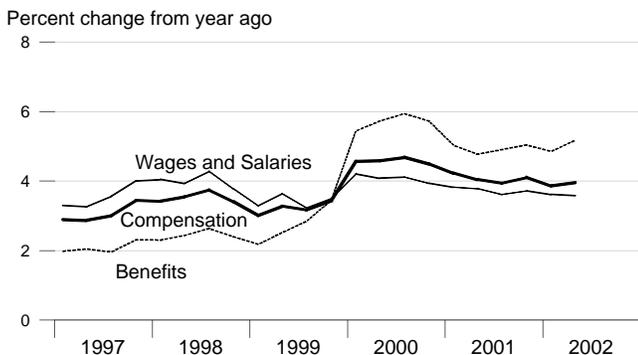
### Producer Price Index, Finished Goods



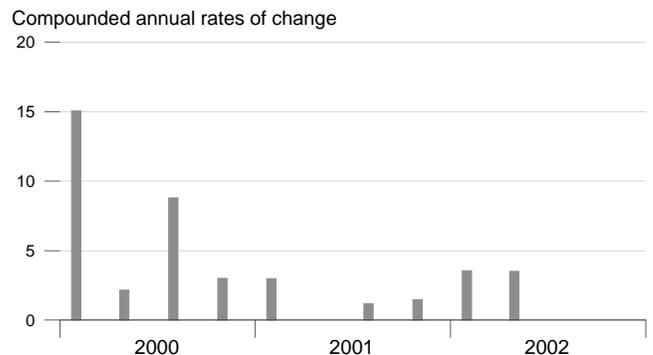
### Unit Labor Cost



### Employment Cost Index

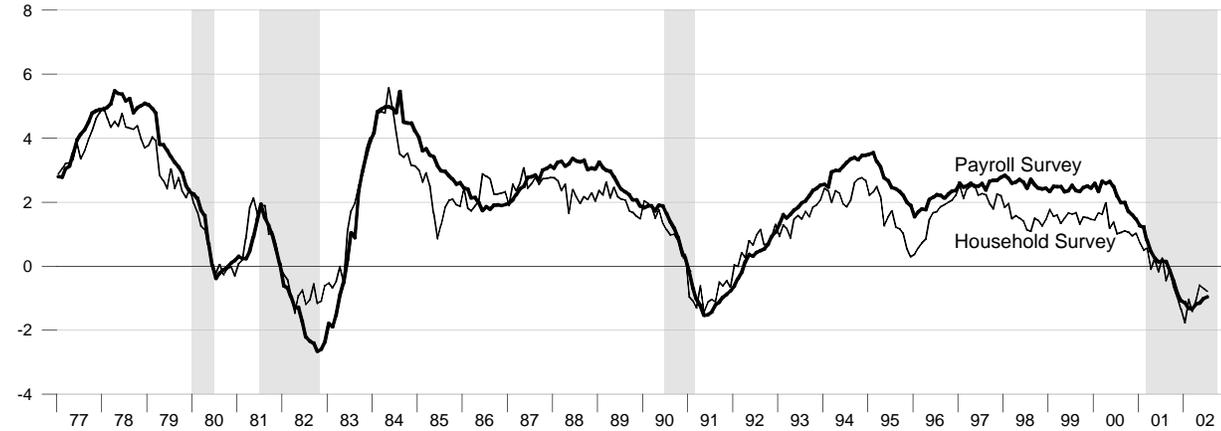


### Compensation per Hour



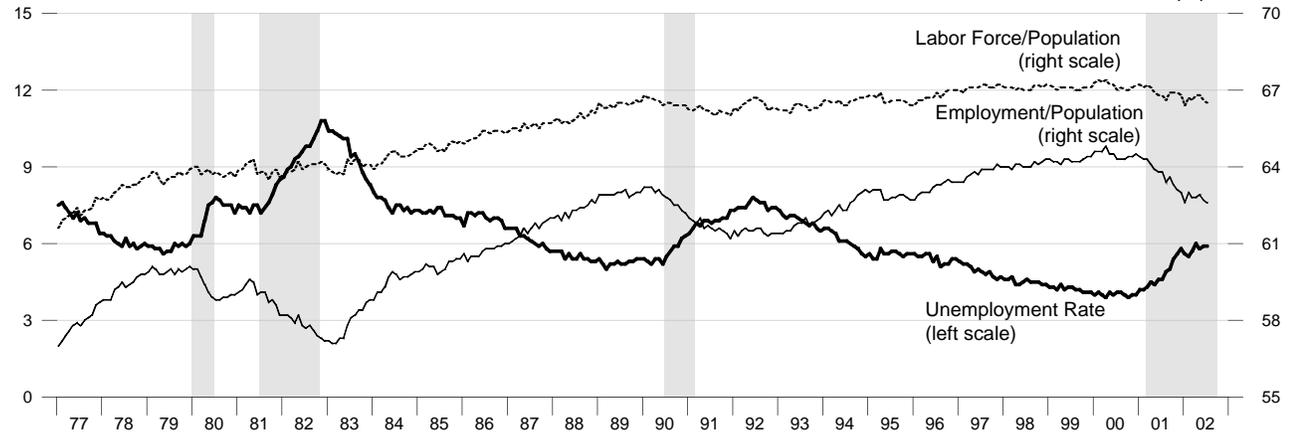
### Employment

Percent change from year ago



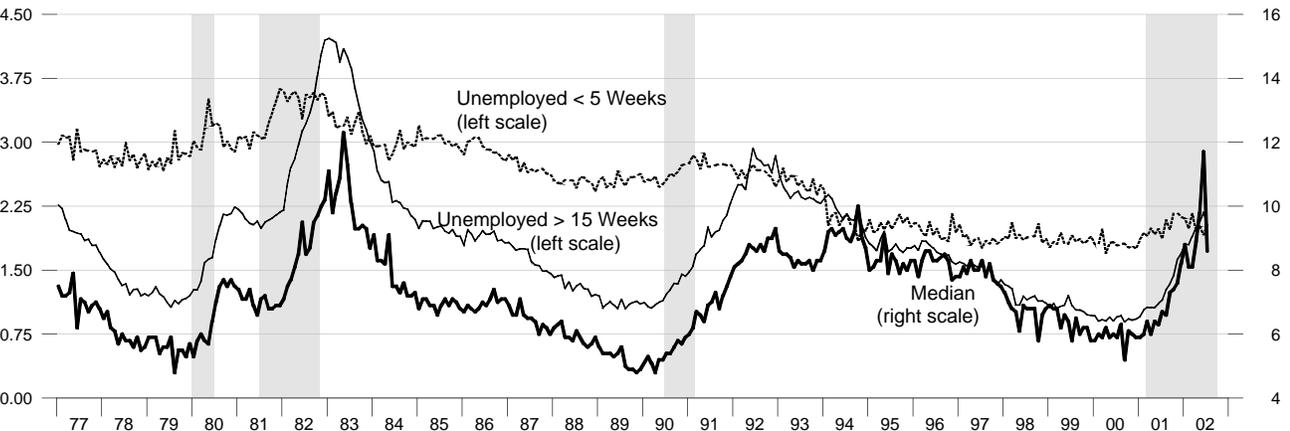
### Unemployment, Labor Force Participation, and Employment Rates

Percent of labor force

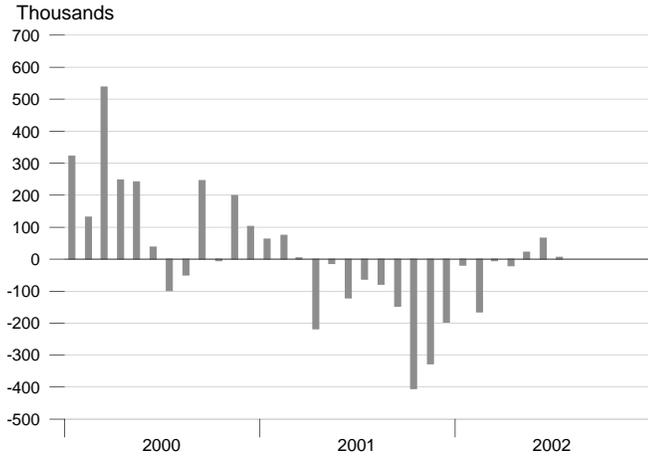


### Duration of Unemployment

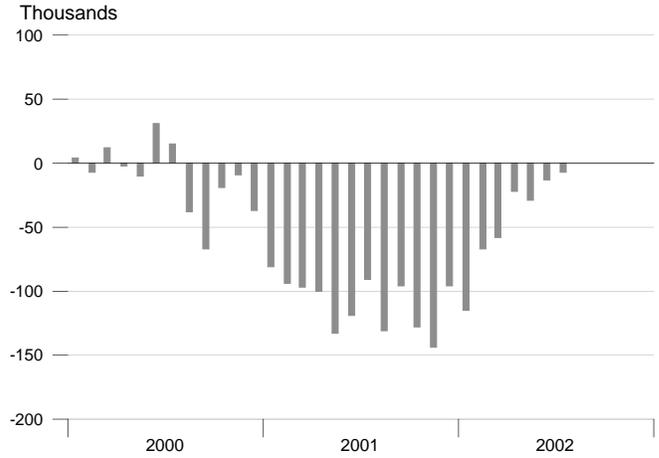
Percent of labor force



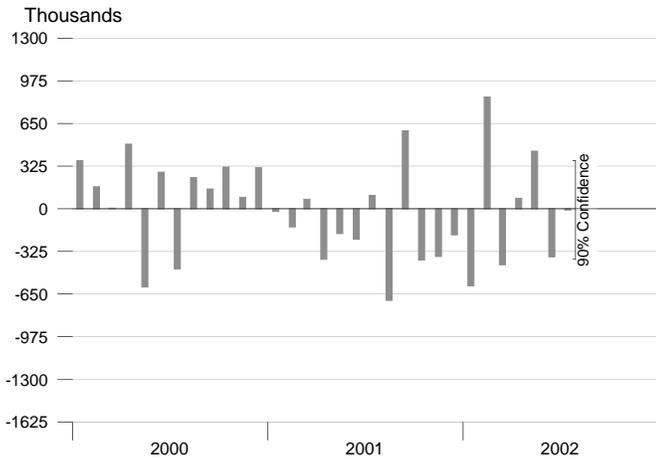
### Change in Nonfarm Payrolls



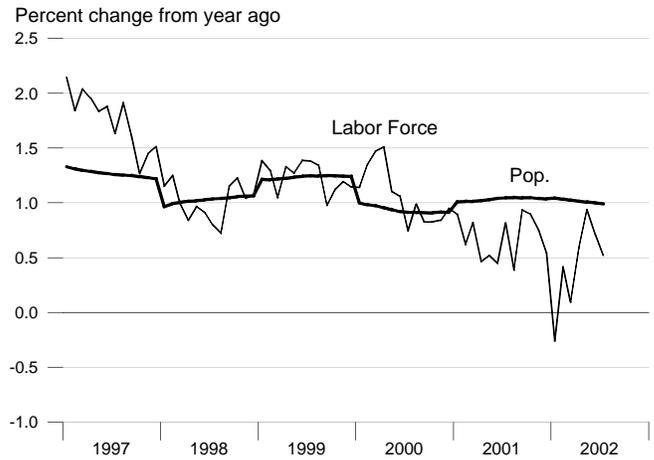
### Change in Manufacturing Payrolls



### Change in Household Employment



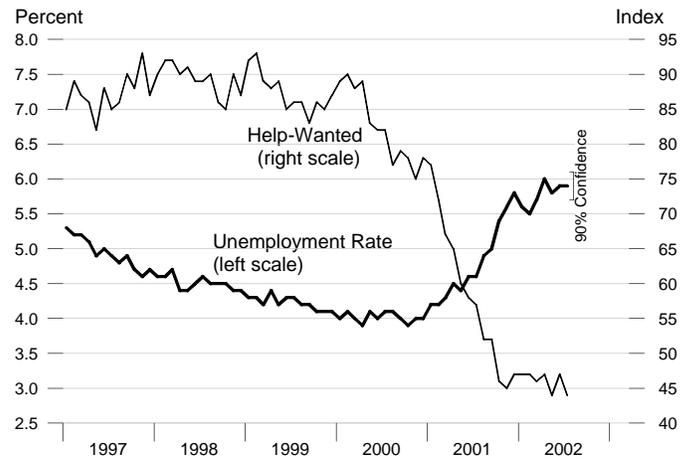
### Labor Force and Population



### Available Labor Supply and Components

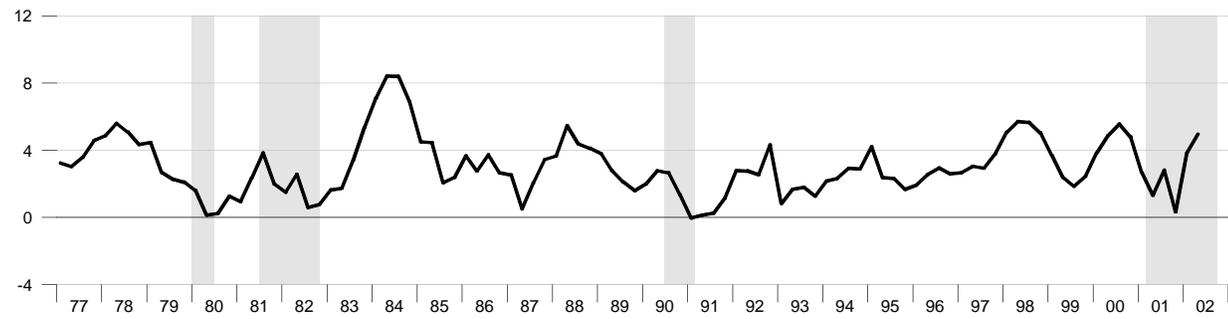


### Unemployment Rate & Help-Wanted Index



### Real Disposable Personal Income

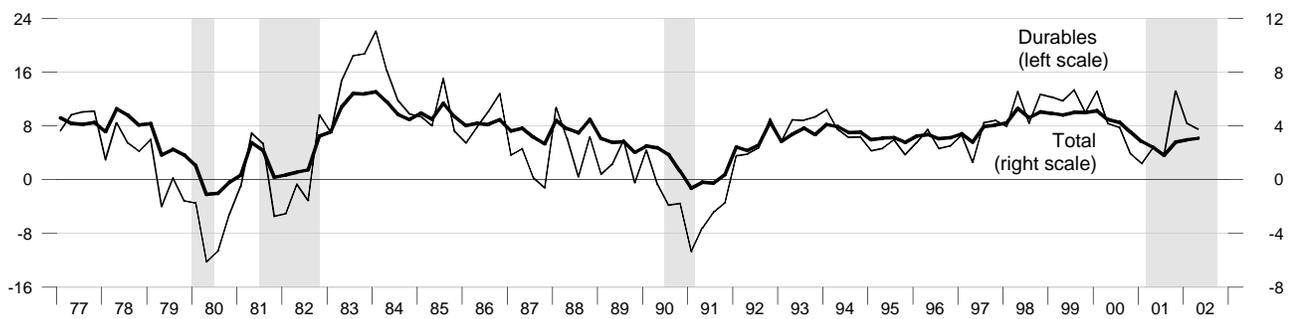
Percent change from year ago, quarterly data



### Real Consumption

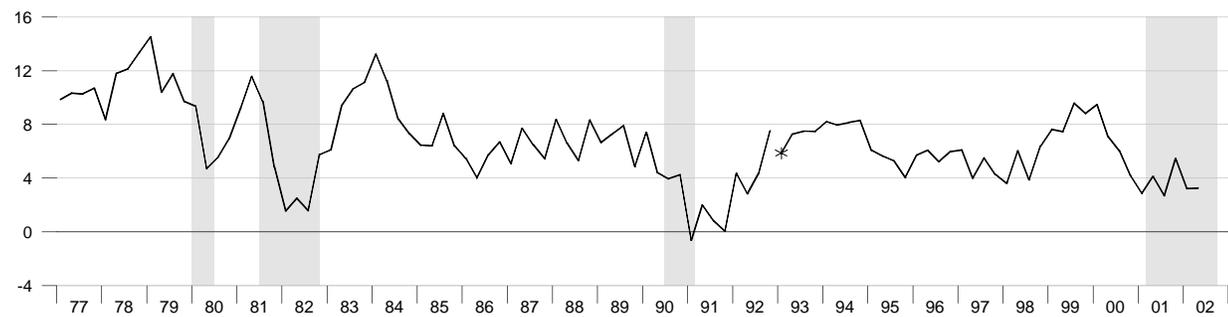
Percent change from year ago, quarterly data

Percent change from year ago, quarterly data



### Retail and Food Services Sales

Percent change from year ago, quarterly average

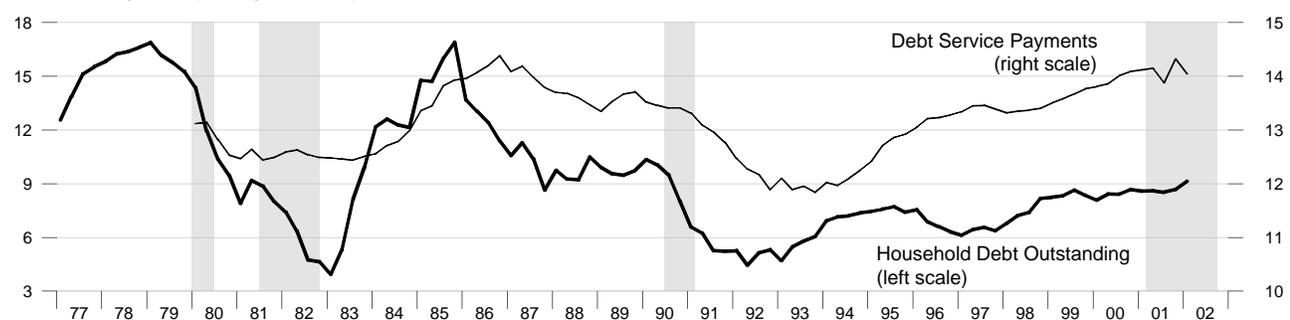


\*Data before January 1992 are not strictly comparable (see End Notes).

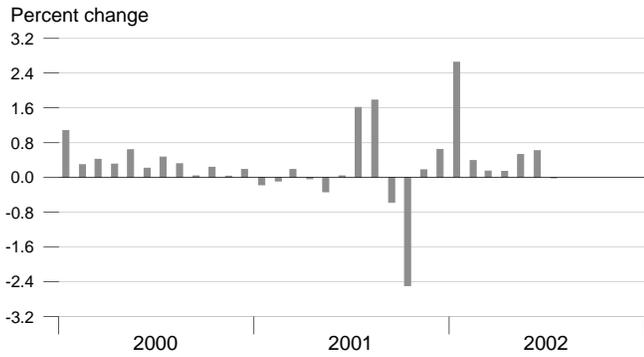
### Debt Service Payments and Household Debt Outstanding

Percent change from year ago, quarterly data

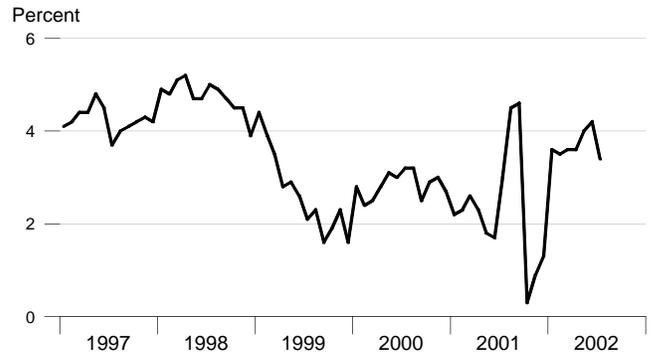
Percent of disposable personal income



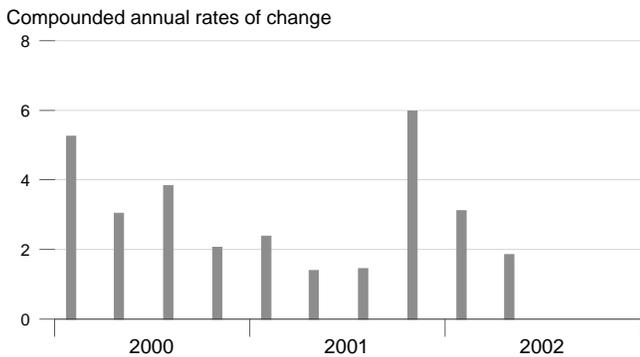
### Real Disposable Personal Income



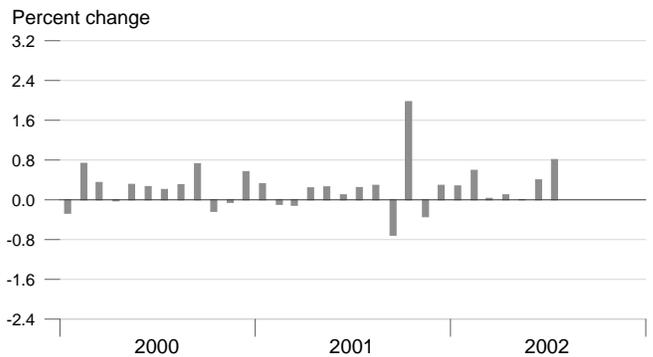
### Personal Saving Rate



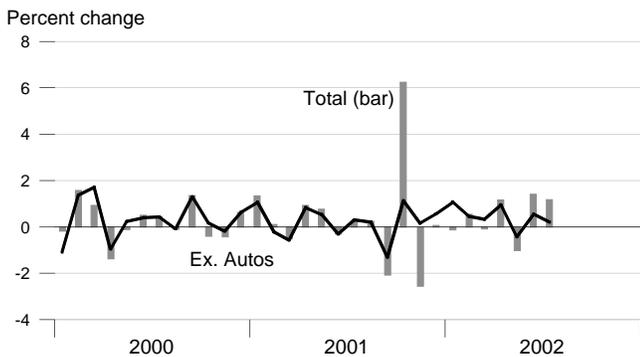
### Real Consumption



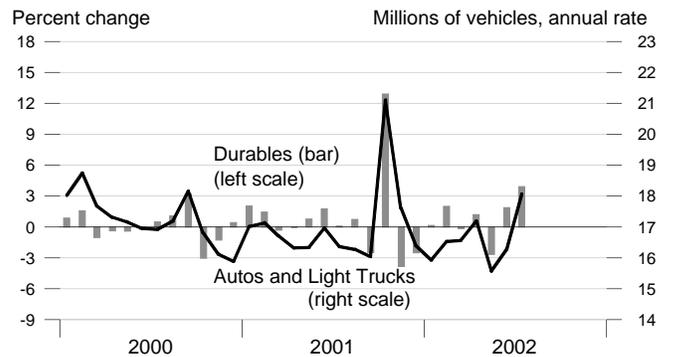
### Real Consumption



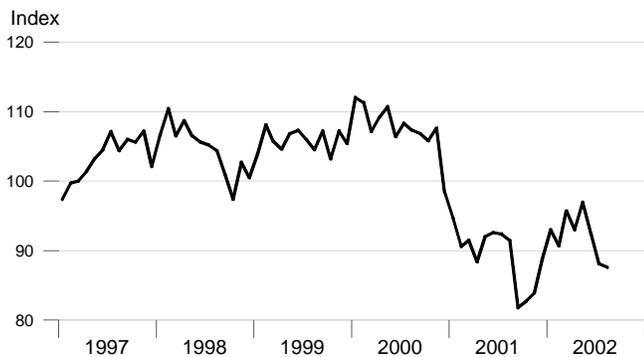
### Retail & Food Services



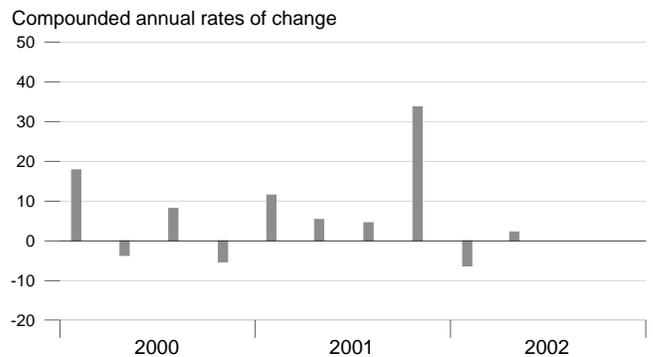
### Real Durables Consumption & Vehicle Sales



### Consumer Sentiment (U. of Michigan)

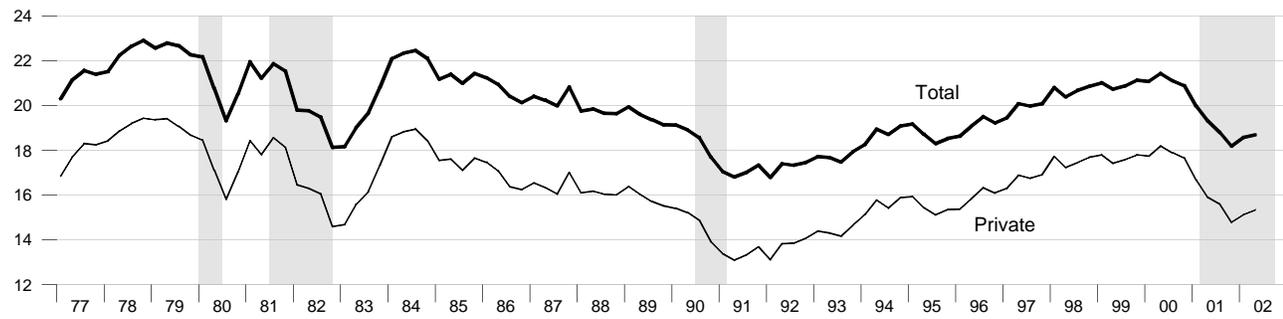


### Real Durables Consumption



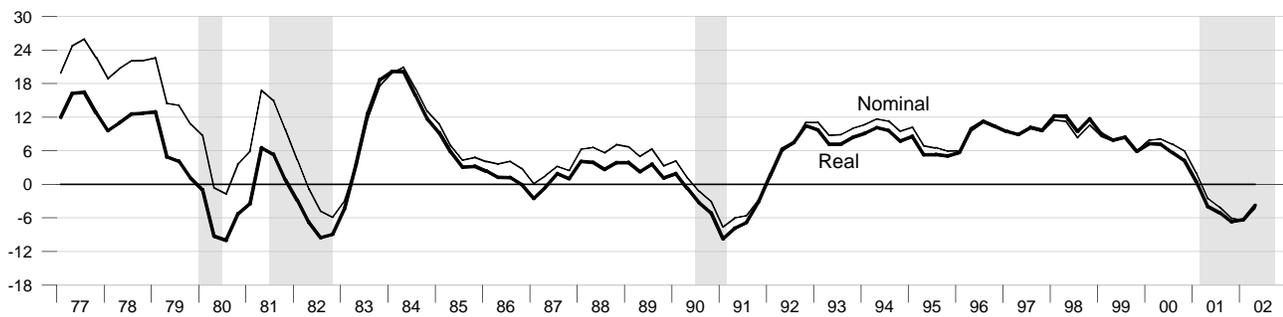
### Investment

Percent of nominal GDP



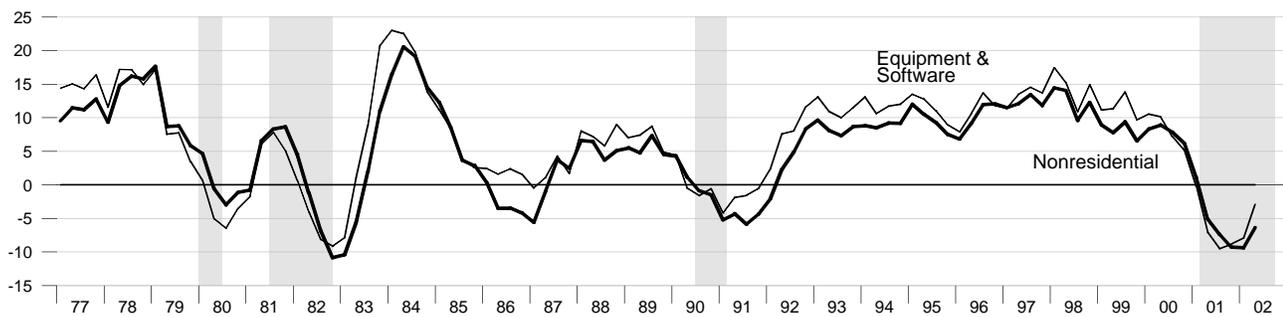
### Private Fixed Investment

Percent change from year ago



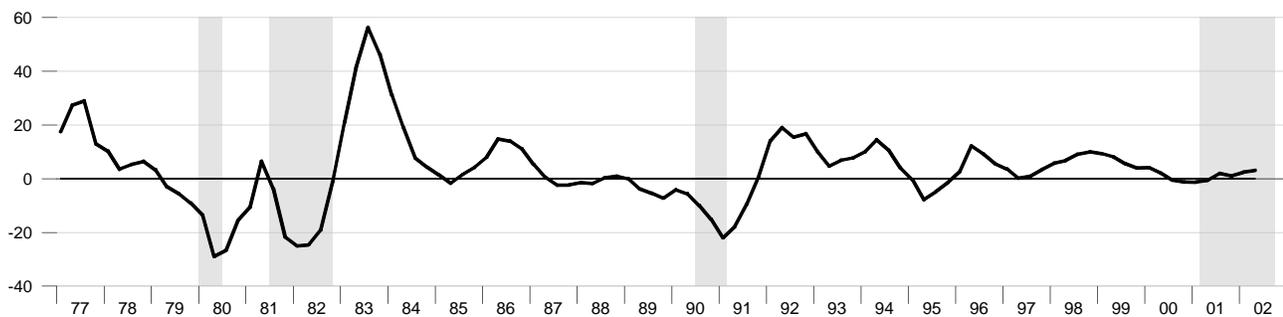
### Real Nonresidential Fixed and Equipment & Software Investment

Percent change from year ago

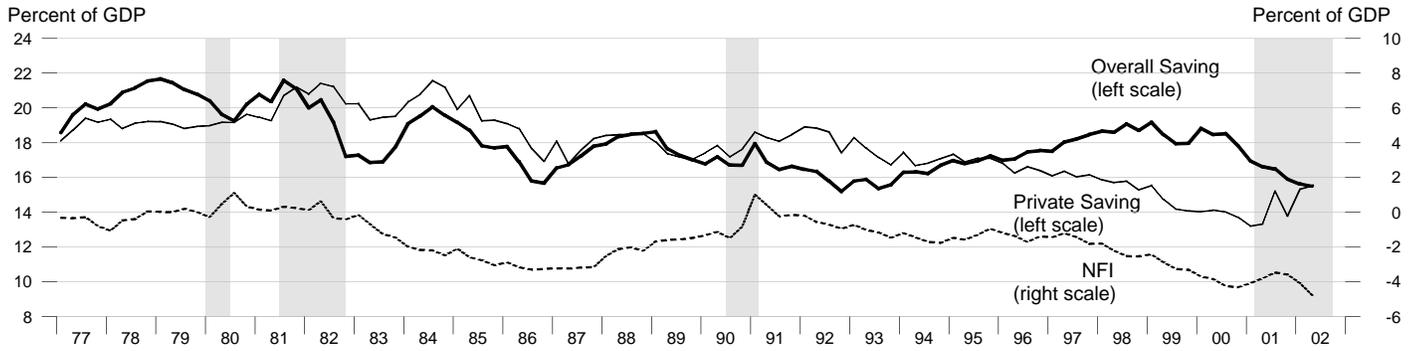


### Real Residential Fixed Investment

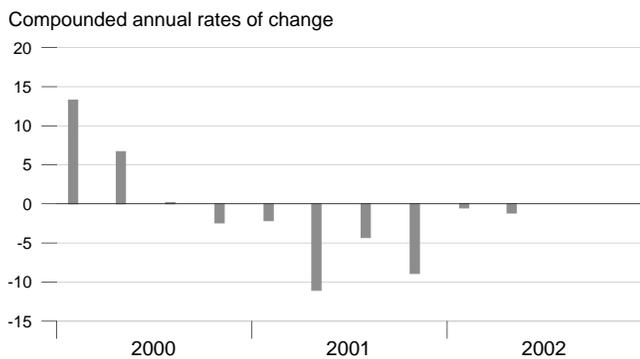
Percent change from year ago



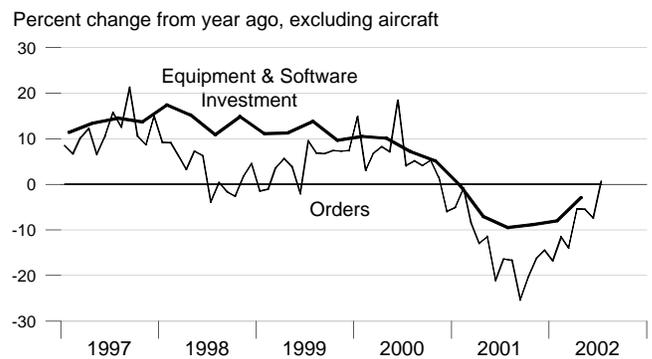
### Gross Saving Rates and Net Foreign Investment



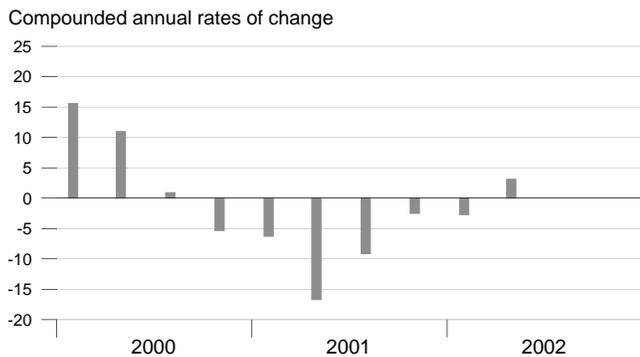
### Real Private Fixed Investment



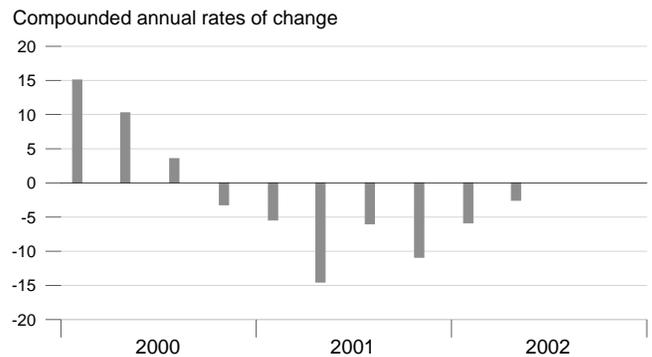
### Nondefense Capital Goods Orders



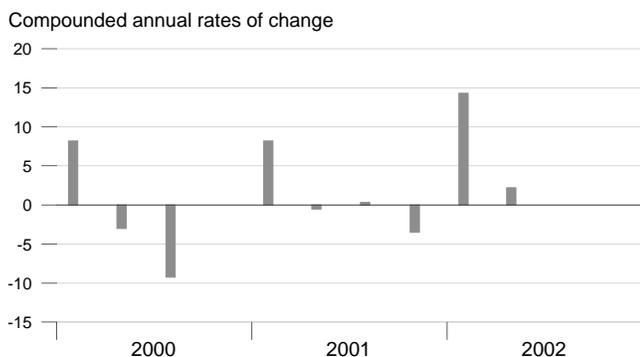
### Real Equipment & Software Investment



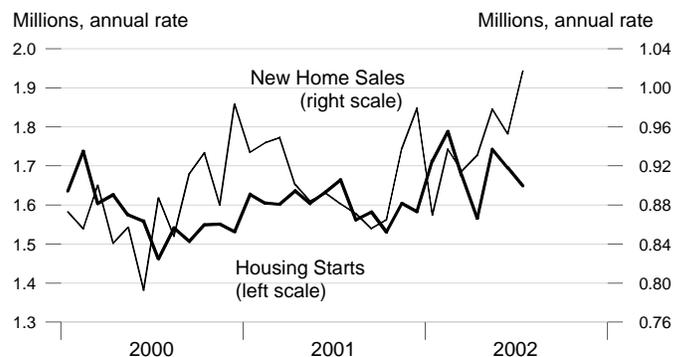
### Real Nonresidential Fixed Investment



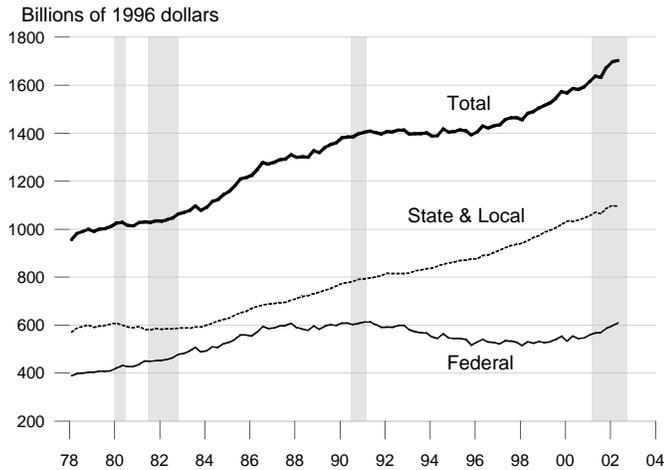
### Real Residential Fixed Investment



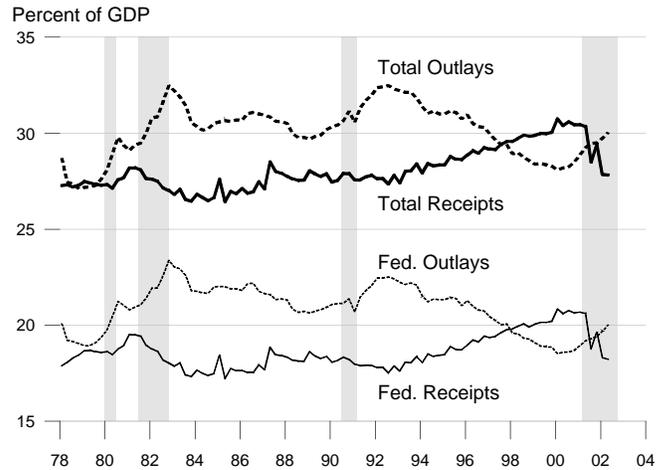
### Housing Starts and New Home Sales



### Govt. Consumption and Investment



### Government Receipts and Outlays



### Government Budgets

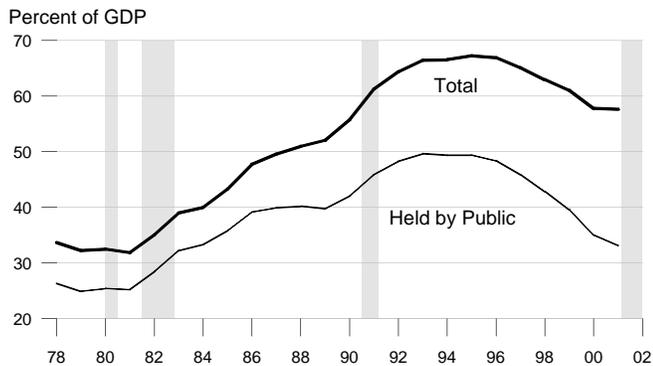
Billions of dollars

#### National Income Accounts Calendar Years

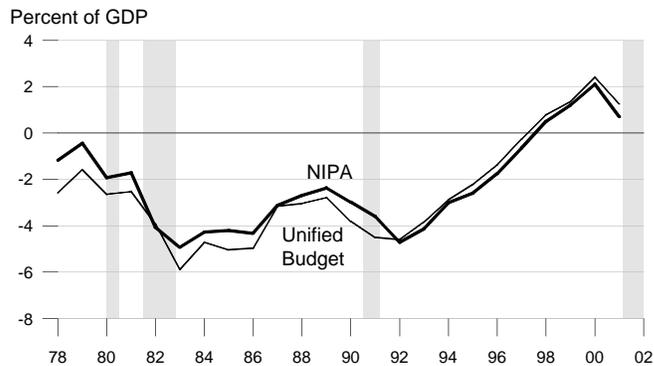
#### Unified Budget Fiscal Years

	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	1144.1	1105.8	38.3	1867.2	1755.3	111.9	1827.5	1701.9	125.5
2000	1214.2	1196.2	18.0	2033.9	1827.1	206.8	2025.2	1788.8	236.4
2001	1261.3	1292.6	-31.3	2008.4	1936.4	72.0	1991.0	1863.9	127.1
1999Q3	1151.4	1117.6	33.8	1876.3	1758.9	117.4	448.7	418.6	30.1
1999Q4	1179.1	1139.5	39.6	1922.4	1793.6	128.8	443.6	463.9	-20.3
2000Q1	1195.9	1163.2	32.7	2009.6	1786.4	223.2	433.7	448.7	-15.0
2000Q2	1204.7	1184.5	20.2	2022.9	1825.7	197.2	656.0	444.3	211.8
2000Q3	1225.4	1206.2	19.2	2049.1	1835.9	213.2	491.7	431.3	60.4
2000Q4	1230.8	1231.0	-0.2	2054.1	1860.3	193.8	462.0	464.3	-2.3
2001Q1	1247.3	1263.8	-16.5	2072.9	1899.1	173.8	459.8	482.2	-22.5
2001Q2	1261.1	1293.4	-32.3	2072.3	1927.8	144.5	660.3	466.5	193.7
2001Q3	1253.6	1299.8	-46.2	1896.0	1947.7	-51.7	409.0	450.9	-41.9
2001Q4	1283.2	1313.3	-30.1	1992.3	1971.0	21.3	466.3	503.4	-37.1
2002Q1	1277.4	1329.1	-51.7	1887.0	2030.5	-143.5	412.6	509.2	-96.6
2002Q2	1305.6	1348.8	-43.2	1889.3	2074.5	-185.2	522.6	506.9	15.6

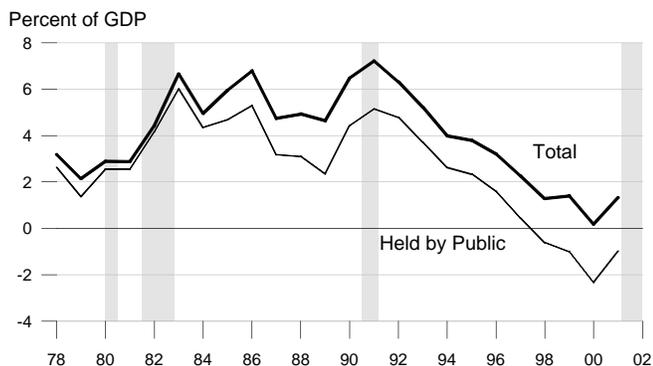
### Federal Debt



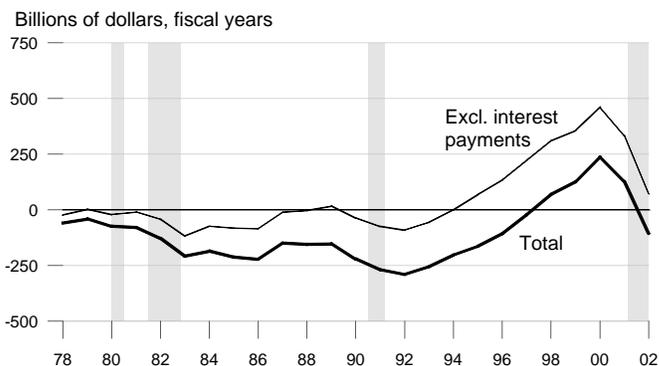
### Federal Surplus (+) / Deficit (-)



### Change in Federal Debt



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

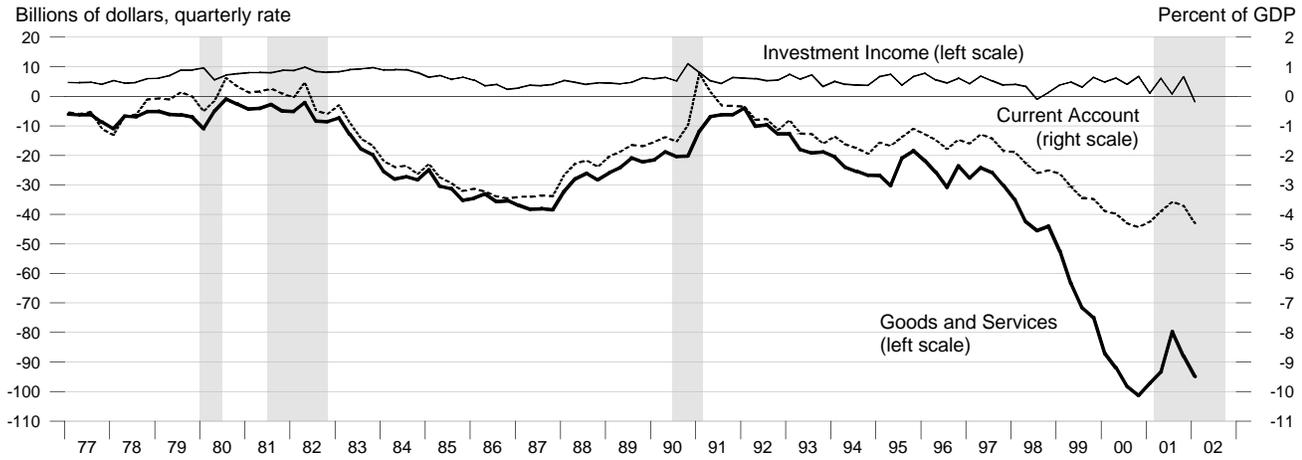


### Federal Government Debt

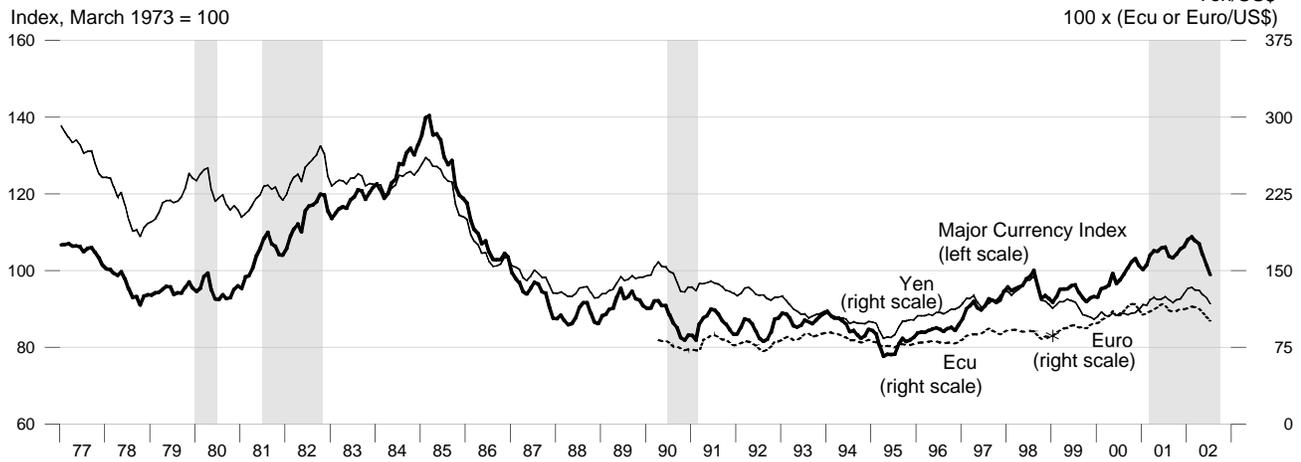
Billions of dollars, end of month or fiscal year  
Excludes Agency-issued debt

		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

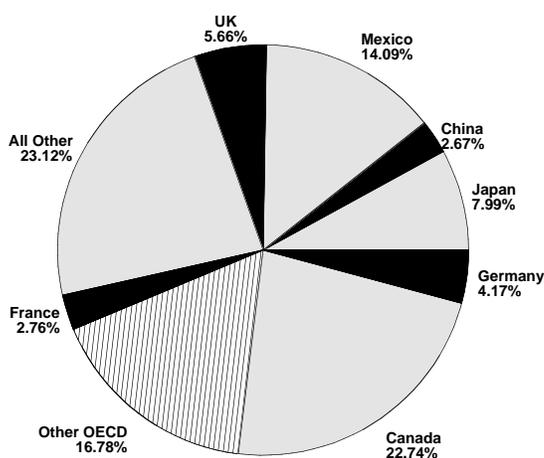
### Current Account, Trade and Investment Income Balances



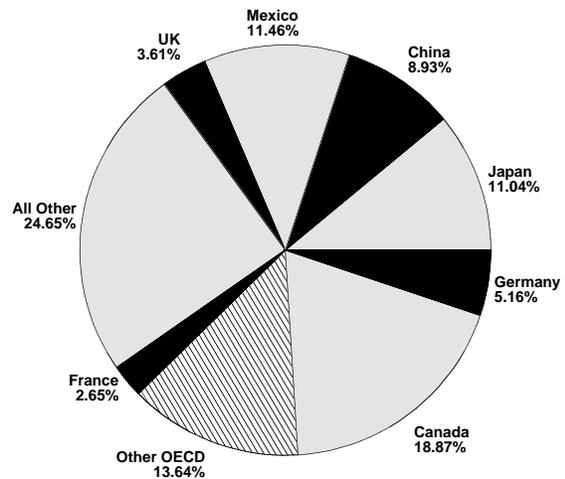
### Exchange Rates



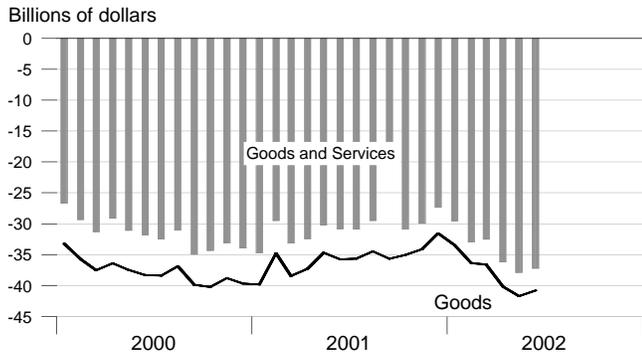
### Goods Export Shares, 2001



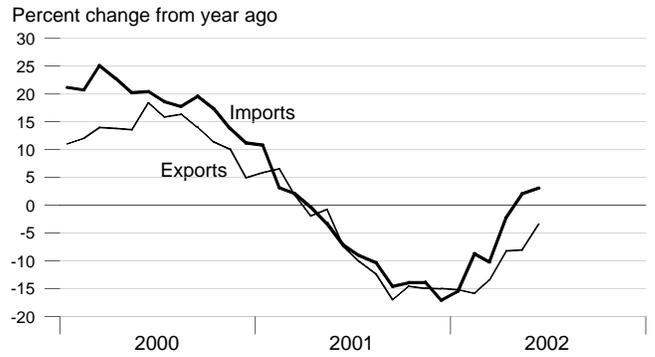
### Goods Import Shares, 2001



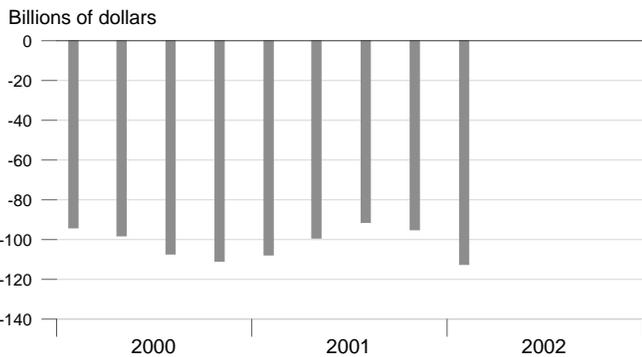
### Trade Balance



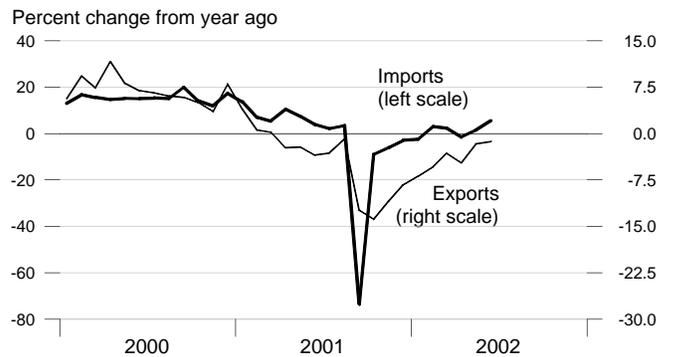
### Goods Trade



### Current Account Balance



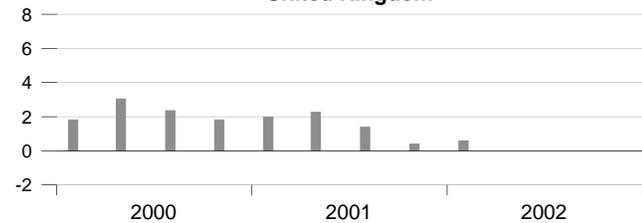
### Services Trade



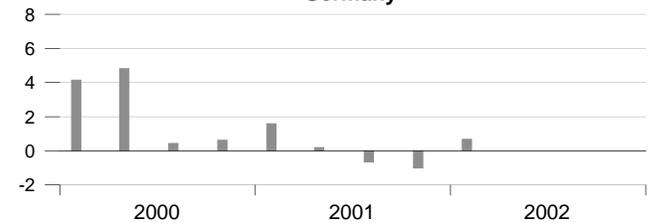
### Real GDP Growth of Major Trading Partners

Compounded annual rates of change

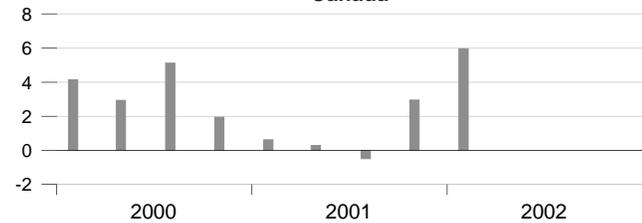
#### United Kingdom



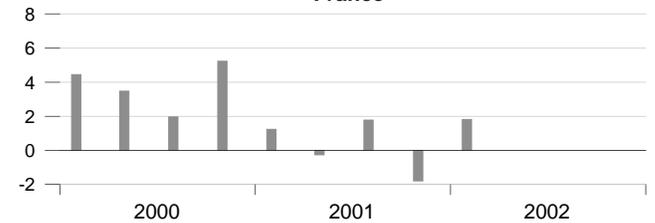
#### Germany



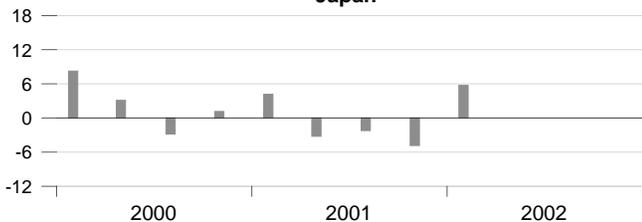
#### Canada



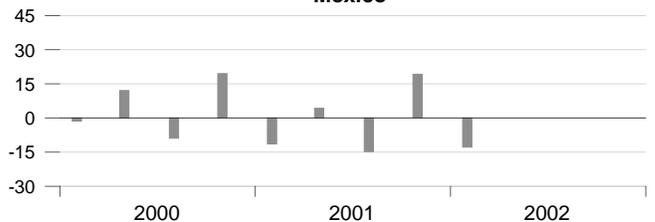
#### France



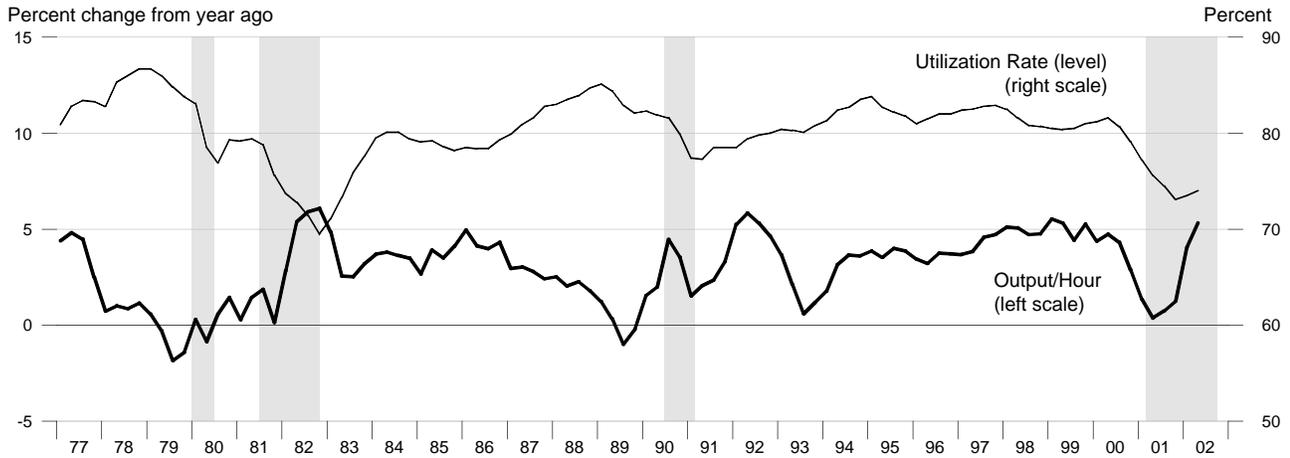
#### Japan



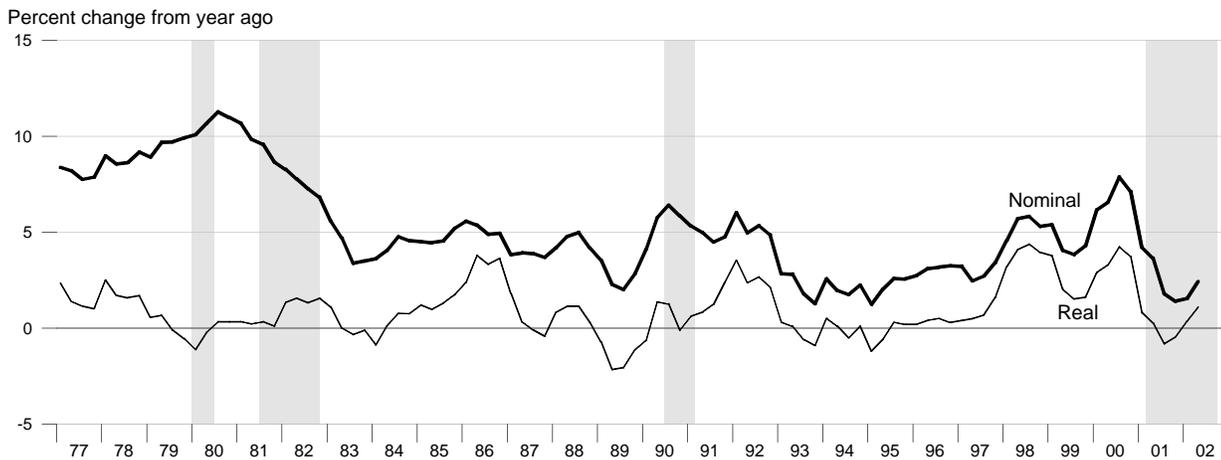
#### Mexico



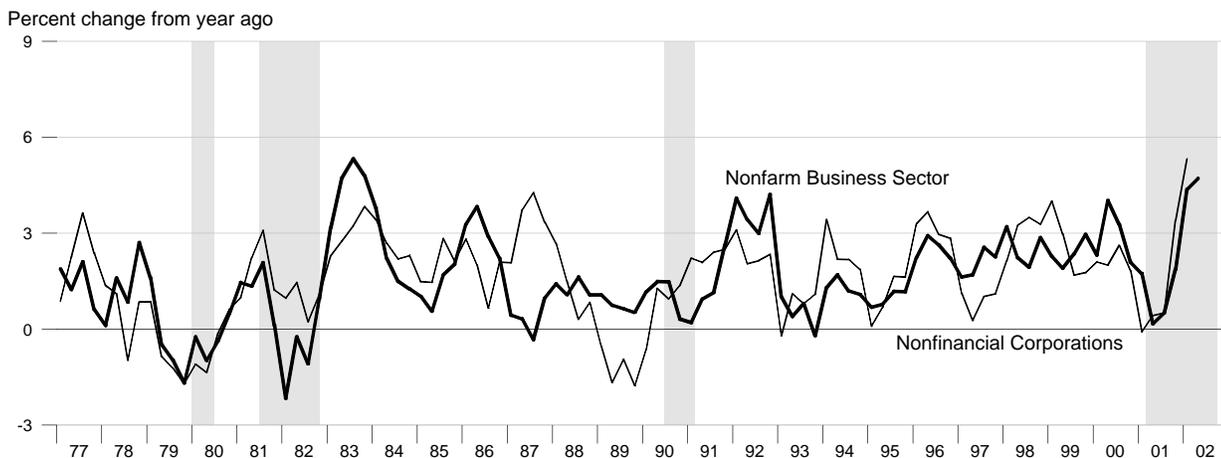
### Output per Hour and Capacity Utilization, Manufacturing



### Nonfarm Compensation per Hour

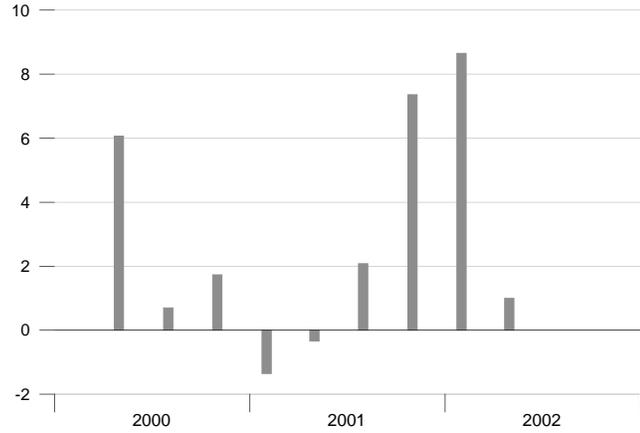


### Output per Hour, Nonfarm Business and Nonfarm, Nonfinancial Corporations



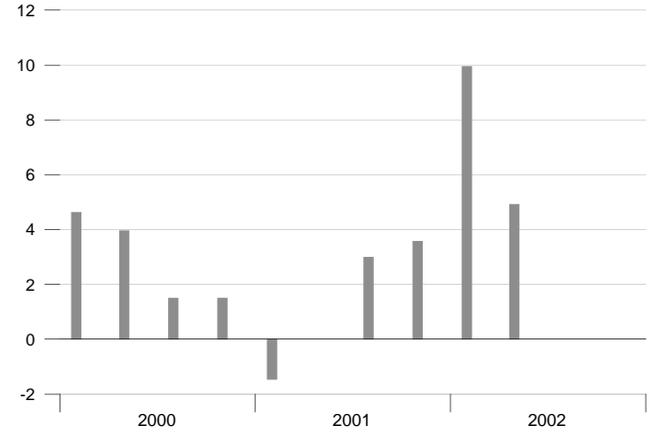
### Nonfarm Output per Hour

Compounded annual rates of change



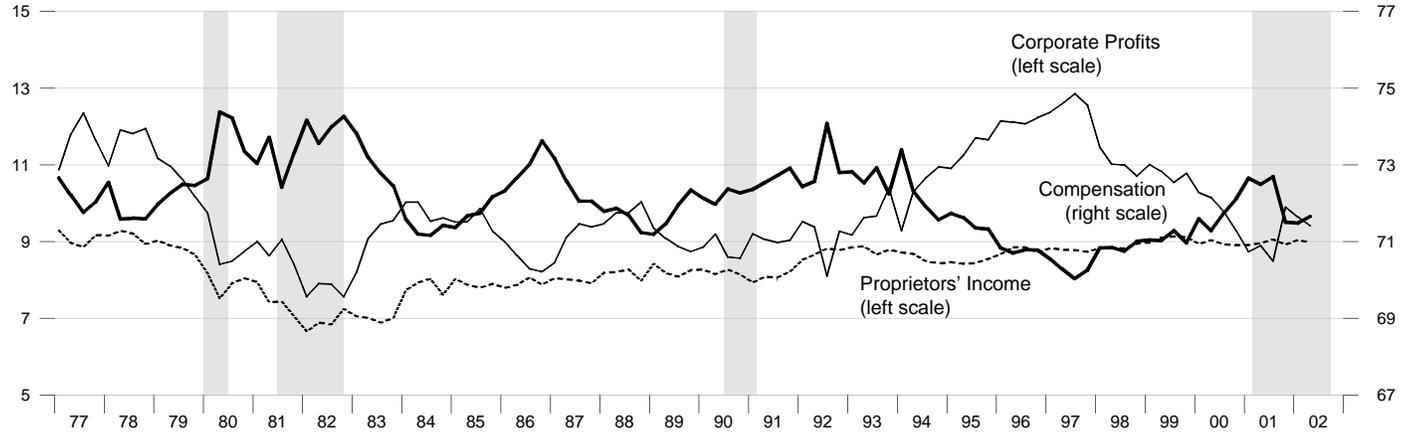
### Manufacturing Output per Hour

Compounded annual rates of change



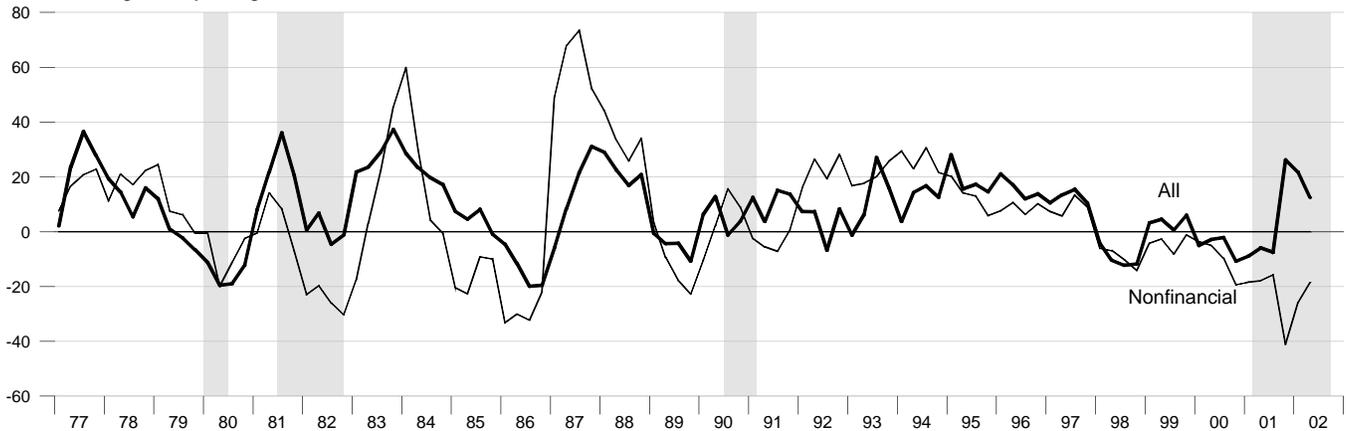
### Selected Component Shares of National Income

Percent



### Corporate Profits after Tax (with IVA and CCAdj)

Percent change from year ago





	<b>GDP Chain Price Index</b>			<b>Employment Cost Index</b>			<b>ECI: Wages</b>			<b>ECI: Benefits</b>			
	Index	<u>Percent change</u>		Index	<u>Percent change</u>		Index	<u>Percent change</u>		Index	<u>Percent change</u>		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	
1998	103.200		1.2	138.0		3.5	135.6		4.0	143.6		2.4	
1999	104.690		1.4	142.4		3.2	140.3		3.4	147.6		2.8	
2000	106.890		2.1	149.0		4.6	146.0		4.1	156.0		5.7	
2001	109.420		2.4	155.0		4.1	151.4		3.7	163.7		4.9	
1999	1	104.120	1.8	1.3	140.2	1.1	3.0	138.1	1.8	3.3	145.2	0.0	2.2
	2	104.520	1.5	1.5	141.8	4.6	3.3	139.7	4.7	3.6	146.7	4.2	2.5
	3	104.840	1.2	1.4	143.1	3.7	3.2	140.9	3.5	3.2	148.2	4.2	2.8
	4	105.280	1.7	1.6	144.6	4.3	3.4	142.3	4.0	3.5	150.2	5.5	3.4
2000	1	106.080	3.1	1.9	146.6	5.6	4.6	143.9	4.6	4.2	153.1	7.9	5.4
	2	106.690	2.3	2.1	148.3	4.7	4.6	145.4	4.2	4.1	155.1	5.3	5.7
	3	107.130	1.7	2.2	149.8	4.1	4.7	146.7	3.6	4.1	157.0	5.0	5.9
	4	107.680	2.1	2.3	151.1	3.5	4.5	147.9	3.3	3.9	158.8	4.7	5.7
2001	1	108.660	3.7	2.4	152.8	4.6	4.2	149.4	4.1	3.8	160.8	5.1	5.0
	2	109.320	2.5	2.5	154.3	4.0	4.0	150.9	4.1	3.8	162.5	4.3	4.8
	3	109.920	2.2	2.6	155.7	3.7	3.9	152.0	2.9	3.6	164.7	5.5	4.9
	4	109.780	-0.5	2.0	157.3	4.2	4.1	153.4	3.7	3.7	166.8	5.2	5.0
2002	1	110.140	1.3	1.4	158.7	3.6	3.9	154.8	3.7	3.6	168.6	4.4	4.9
	2	110.450	1.1	1.0	160.4	4.4	4.0	156.3	3.9	3.6	170.9	5.6	5.2
		<b>Exports</b>			<b>Imports</b>			<b>Nonfarm Output per Hour</b>			<b>Nonfarm Compensation per Hour</b>		
		<u>Percent change</u>		Billions of 1996 \$	<u>Percent change</u>		Index	<u>Percent change</u>		Index	<u>Percent change</u>		
		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago		Annual rate	Year ago	
1998		1002.420		2.1	1223.500		11.8	110.3		2.6	119.1		5.3
1999		1036.329		3.4	1356.816		10.9	112.9		2.4	124.3		4.4
2000		1137.199		9.7	1535.958		13.2	116.2		2.9	133.0		7.0
2001		1076.121		-5.4	1492.010		-2.9	117.5		1.1	136.6		2.7
1999	1	1007.490	-6.9	0.4	1290.659	8.4	9.0	112.1	2.5	2.3	123.2	7.1	5.4
	2	1018.076	4.3	2.5	1337.698	15.4	10.0	111.9	-0.7	1.9	123.4	0.7	4.0
	3	1044.100	10.6	5.7	1383.736	14.5	12.6	112.9	3.6	2.4	124.5	3.6	3.8
	4	1075.631	12.6	4.9	1415.153	9.4	11.9	114.7	6.5	3.0	126.3	5.9	4.3
2000	1	1095.781	7.7	8.8	1464.619	14.7	13.5	114.7	0.0	2.3	130.8	15.0	6.2
	2	1133.877	14.6	11.4	1528.465	18.6	14.3	116.4	6.1	4.0	131.5	2.2	6.6
	3	1165.469	11.6	11.6	1578.615	13.8	14.1	116.6	0.7	3.3	134.3	8.8	7.9
	4	1153.668	-4.0	7.3	1572.152	-1.6	11.1	117.1	1.7	2.1	135.3	3.0	7.1
2001	1	1135.809	-6.0	3.7	1540.311	-7.9	5.2	116.7	-1.4	1.7	136.3	3.0	4.2
	2	1098.832	-12.4	-3.1	1513.594	-6.8	-1.0	116.6	-0.3	0.2	136.3	0.0	3.7
	3	1048.017	-17.3	-10.1	1466.988	-11.8	-7.1	117.2	2.1	0.5	136.7	1.2	1.8
	4	1021.827	-9.6	-11.4	1447.158	-5.3	-8.0	119.3	7.4	1.9	137.2	1.5	1.4
2002	1	1030.560	3.5	-9.3	1477.140	8.5	-4.1	121.8	8.6	4.4	138.4	3.5	1.5
	2	1060.928	12.3	-3.4	1555.009	22.8	2.7	122.1	1.0	4.7	139.6	3.5	2.4

		Household Survey Employment				Nonfarm Payroll Employment				Nonfarm Aggregate Hours			
		Thousands	Change	Percent change		Thousands	Change	Percent change		Index	Percent change		
				Annual rate	Year ago			Annual rate	Year ago		Monthly rate	Annual rate	Year ago
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
	2	134149	255	0.8	-0.8	130717	-43	-0.1	-1.1	148.3	0.0	0.2	-1.7
2000	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	130680	-21	-0.2	-1.2	148.1	-0.1	-0.8	-1.9
	May	134417	441	4.0	-0.6	130702	22	0.2	-1.2	148.1	0.0	0.0	-1.9
	Jun	134053	-364	-3.2	-0.7	130768	66	0.6	-1.0	148.6	0.3	4.1	-1.3
	Jul	134045	-8	-0.1	-0.8	130774	6	0.1	-1.0	147.7	-0.6	-7.0	-1.8

		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	3487.874			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	868.614	1.0	4.2	4.1	141.309	-1.5	-5.9	-3.5	3.66	5.27
	3	4.8	866.446	-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	138.090	0.7	2.6	-3.7	1.72	5.08
	2	5.9	896.957	1.1	4.3	3.3	139.570	1.1	4.4	-1.2	1.72	5.10
2000	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	290.567	0.8	9.6	4.7	141.595	-0.3	-3.4	-3.4	3.62	5.39
	Jun	4.6	289.681	-0.3	-3.6	3.9	140.326	-0.9	-10.2	-4.7	3.49	5.28
	Jul	4.6	290.367	0.2	2.9	3.6	140.402	0.1	0.7	-4.2	3.51	5.24
	Aug	4.9	291.073	0.2	3.0	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	138.589	0.3	4.1	-3.0	1.79	5.28
	Apr	6.0	299.642	1.2	14.9	3.9	138.777	0.1	1.6	-2.3	1.72	5.21
	May	5.8	296.567	-1.0	-11.6	2.1	139.491	0.5	6.4	-1.5	1.73	5.16
	Jun	5.9	300.748	1.4	18.3	3.8	140.443	0.7	8.5	0.1	1.70	4.93
	Jul	5.9	304.279	1.2	15.0	4.8	140.687	0.2	2.1	0.2	1.68	4.65
	Aug										1.62	4.26

		<b>Consumer Price Index</b>					<b>Consumer Price Index less Food and Energy</b>					<b>Producer Price Index Finished Goods</b>			
		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	138.4	-0.0	-0.1	-2.4
	2	179.6	0.8	3.4	1.3	2.4	190.0	0.5	2.2	2.5	2.2	138.9	0.3	1.4	-2.3
2000	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	139.3	0.9	10.9	-1.7
	Apr	179.5	0.5	6.2	1.6	3.8	189.8	0.3	3.2	2.5	2.4	139.2	-0.1	-0.9	-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
	Jun	179.7	0.1	1.3	1.1	2.7	190.2	0.1	0.6	2.3	2.0	138.8	0.1	1.7	-2.0
	Jul	179.9	0.1	1.3	1.5	2.5	190.5	0.2	1.9	2.3	2.0	138.5	-0.2	-2.6	-1.1

## 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 ( $\pm 0.2$  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)