

# Monetary Trends



## Getting “Real” About Monetary Policy

In response to weak U.S. economic activity, the Federal Open Market Committee lowered its target for the nominal federal funds rate by 450 basis points between January and November of 2001. The size and speed of this reduction represents one of the most aggressive policy actions ever undertaken by the Federal Reserve. However, some have suggested that monetary policy is still too tight, arguing that the *real* federal funds rate—the federal funds rate less the expected rate of inflation—is still relatively high.

Unfortunately, the real interest rate is difficult to measure because the public’s expected rate of inflation is not directly observable. A possible solution to this problem is to use information from surveys, of which there are several varieties. One type of survey simply asks the public what rate of inflation they expect. An example is the University of Michigan *Survey of Consumers*, a monthly sampling of consumers’ expectations for future economic conditions, including inflation. The University of Michigan survey does not ask about a specific measure of inflation, but instead asks how much the survey respondent expects prices in general to rise over a given period. Another type of survey queries professional forecasters. The quarterly *Survey of Professional Forecasters (SPF)* produced by the Federal Reserve Bank of Philadelphia is an example. Unlike the Michigan survey, the *SPF* requests forecasts of explicit measures of inflation, such as the consumer price index. Each type of survey has its own merits: although one might expect more accuracy from the *SPF*, the perception of actual consumers and investors is what matters for the economy.

The accompanying Figure displays two measures of the real interest rate based on the surveys described above: (i) the nominal federal funds rate minus the expected rise in prices over the next year from the

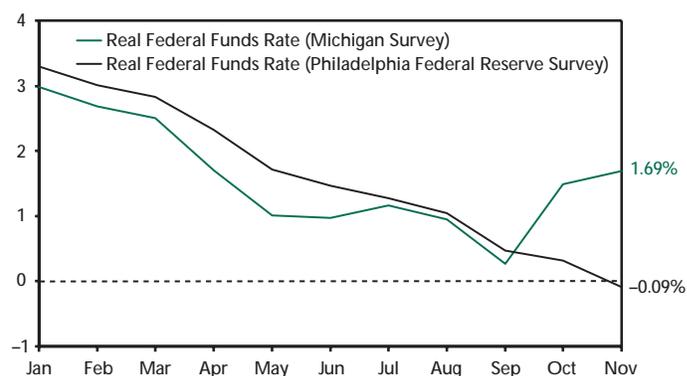
Michigan survey and (ii) the nominal federal funds rate minus the expected increase in the consumer price index over the next year from the *SPF*. For each survey, expected inflation is measured as the median survey response.

Recently, the real interest rates implied by the two surveys have differed markedly. While the measure of the real interest rate using the *SPF* was slightly below 0 percent in late November (a low value historically), the measure based on the Michigan survey was around 1.7 percent (well above levels seen in previous recessions). This disparity reflects differences in expected inflation from the two surveys. Professional forecasters expect consumer prices to rise by around 2 percent over the next 12 months, as reported in the November release of the *SPF*. However, the Michigan survey reported that consumers expect prices to rise by only 0.4 percent.

The large difference between these measures of expected inflation may reflect economic uncertainty in the aftermath of recent terrorist attacks; if so, this difference may disappear as the uncertainty dissipates. However, the discrepancies point out the difficulty in measuring the stance of monetary policy using the real interest rate when different measures of expected inflation send conflicting signals.

—Jeremy M. Piger

The Real Federal Funds Rate in 2001



# Table of Contents

---

Page	
3	Monetary and Financial Indicators at a Glance
4-5	Monetary Aggregates and Their Components
6	Monetary Aggregates: Monthly Growth
7	Reserves Markets and Short-Term Credit Flows
8	Measures of Expected Inflation
9	Interest Rates
10	Policy-Based Inflation Indicators
11	Implied Forward Rates, Futures Contracts, and Inflation-Protected Securities
12-13	Velocity, Gross Domestic Product, and M2
14	Bank Credit
15	Stock Market Index, and Foreign Inflation and Interest Rates
16-18	Reference Tables
18-20	Definitions, Notes, and Sources

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

1. Unless otherwise indicated, data are monthly.
2. Shaded areas indicate recessions, as dated by the National Bureau of Economic Research.
3. The *percent change at an annual rate* is the simple, not compounded, monthly percent change multiplied by 12. For example, using consecutive months, the percent change at an annual rate in  $x$  between month  $t-1$  and the current month  $t$  is:  $[(x_t / x_{t-1}) - 1] \times 1200$ . Note that this differs from *National Economic Trends*. In that publication monthly percent changes are compounded and expressed as annual growth rates.
4. The *percent change from year ago* refers to the percent change from the same period in the previous year. For example, the percent change from year ago in  $x$  between month  $t-12$  and the current month  $t$  is:  $[(x_t / x_{t-12}) - 1] \times 100$ .

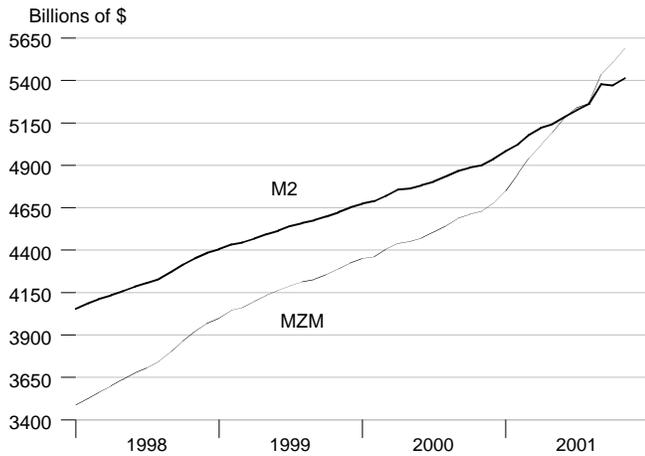
We welcome your comments addressed to:

Editor, *Monetary Trends*  
Research Division  
Federal Reserve Bank of St. Louis  
P.O. Box 442  
St. Louis, MO 63166

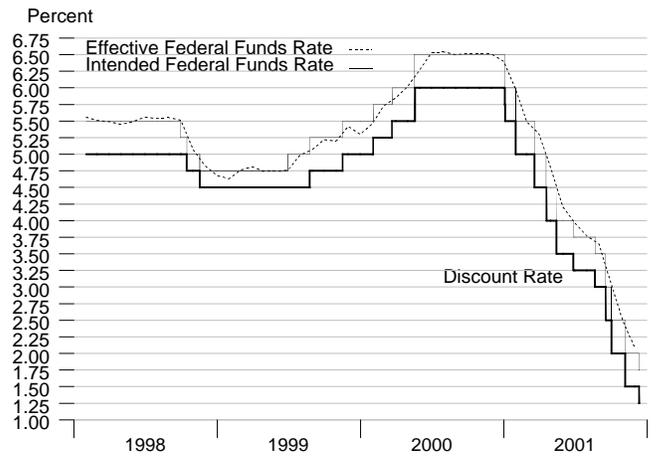
or to:

[webmaster@stls.frb.org](mailto:webmaster@stls.frb.org)

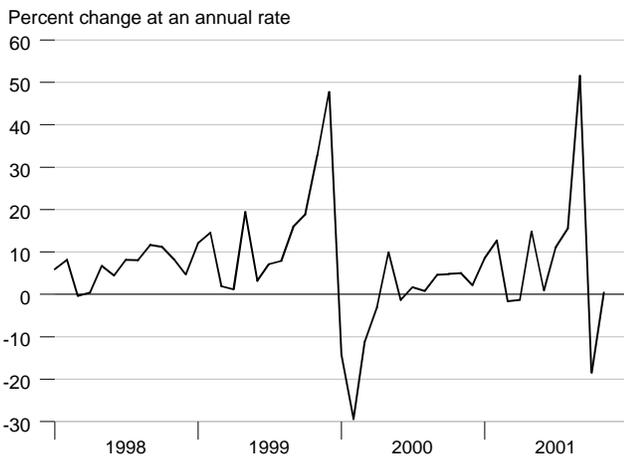
**M2 and MZM**



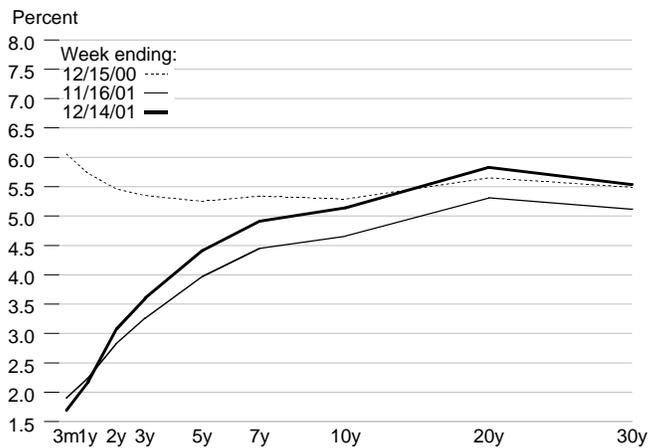
**Reserve Market Rates**



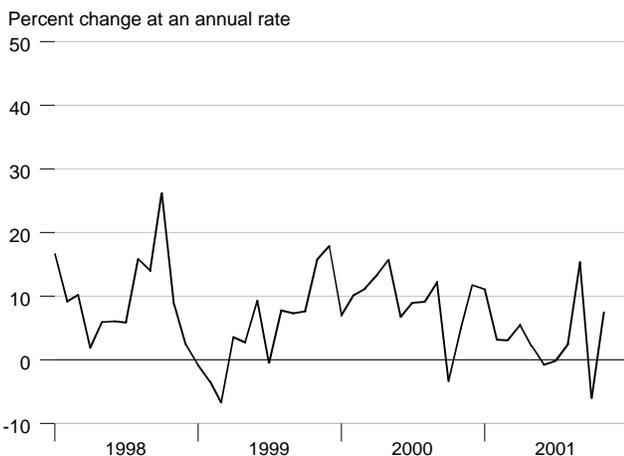
**Adjusted Monetary Base**



**Treasury Yield Curve**



**Total Bank Credit**

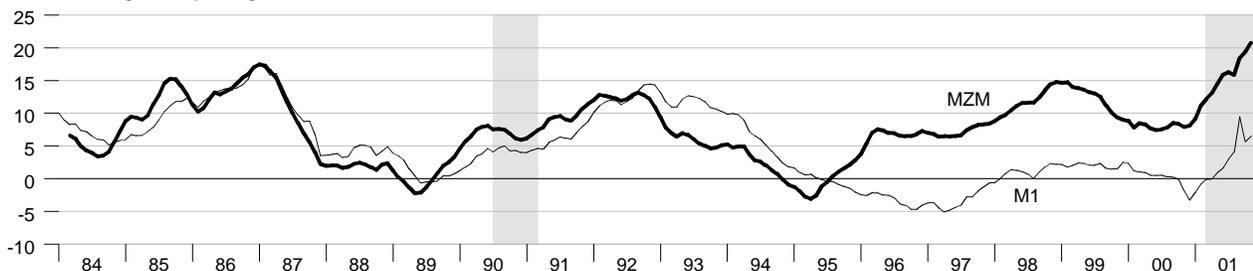


**Interest Rates**

	Sep 01	Oct 01	Nov 01
Federal Funds Rate	3.07	2.49	2.09
Discount Rate	2.77	2.02	1.58
Prime Rate	6.28	5.53	5.10
Conventional Mortgage Rate	6.82	6.62	6.66
<b>Treasury Yields:</b>			
3-month constant maturity	2.69	2.20	1.91
6-month constant maturity	2.71	2.17	1.92
1-year constant maturity	2.82	2.33	2.18
3-year constant maturity	3.45	3.14	3.22
5-year constant maturity	4.12	3.91	3.97
10-year constant maturity	4.73	4.57	4.65
30-year constant maturity	5.48	5.32	5.12

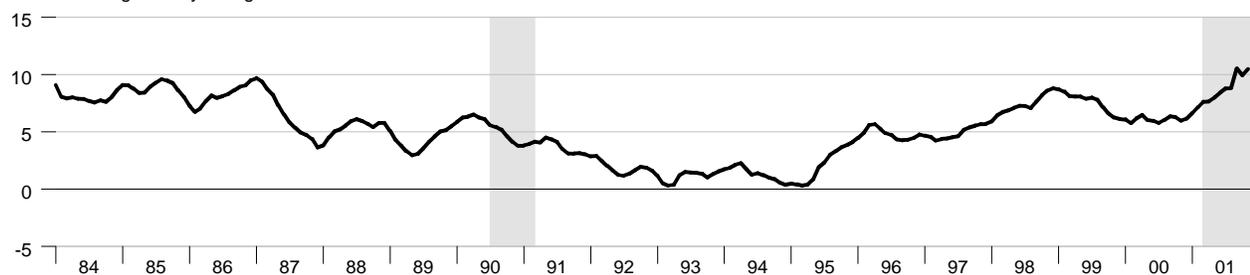
### MZM and M1

Percent change from year ago



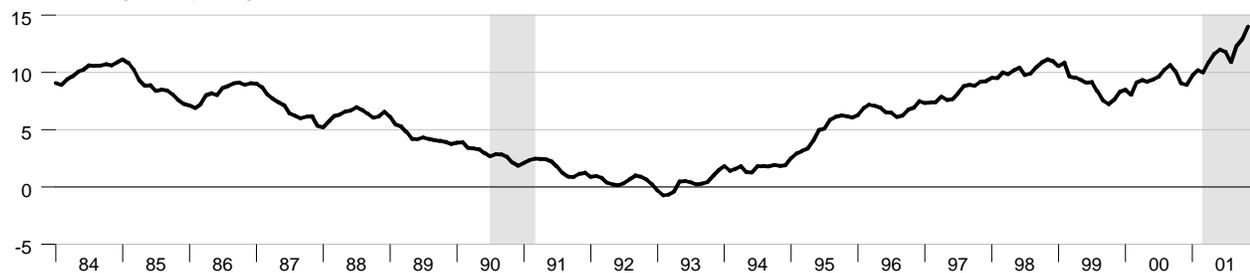
### M2

Percent change from year ago



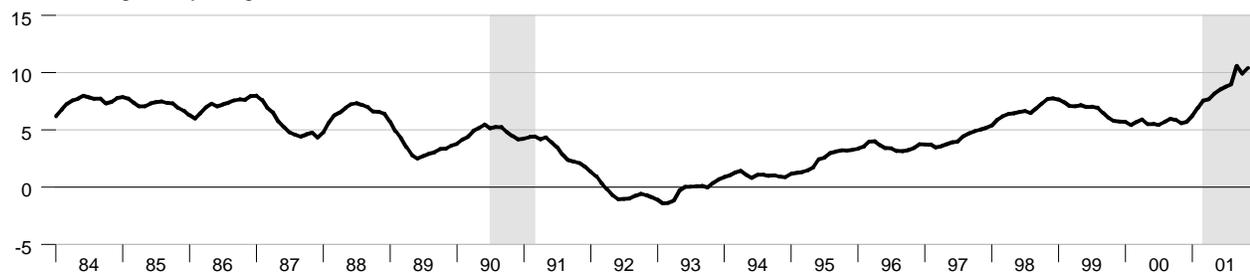
### M3

Percent change from year ago



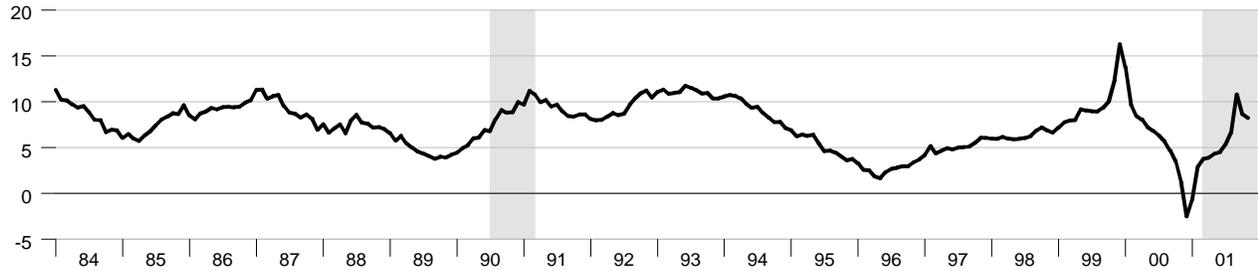
### Monetary Services Index - M2

Percent change from year ago



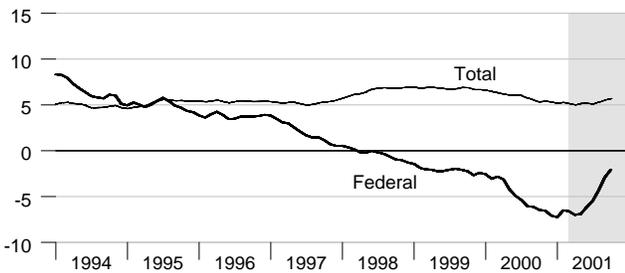
### Adjusted Monetary Base

Percent change from year ago



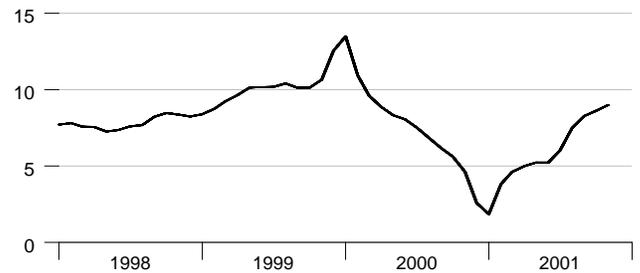
### Domestic Nonfinancial Debt

Percent change from year ago



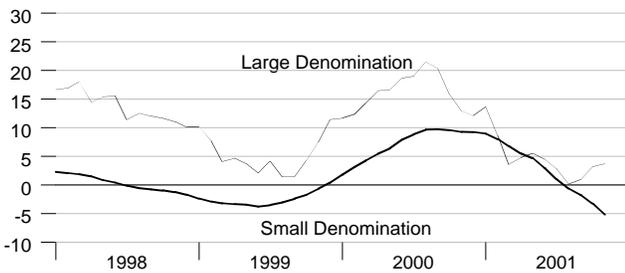
### Currency Held by the Nonbank Public

Percent change from year ago



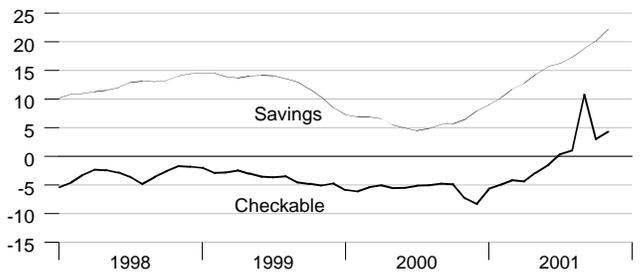
### Time Deposits

Percent change from year ago



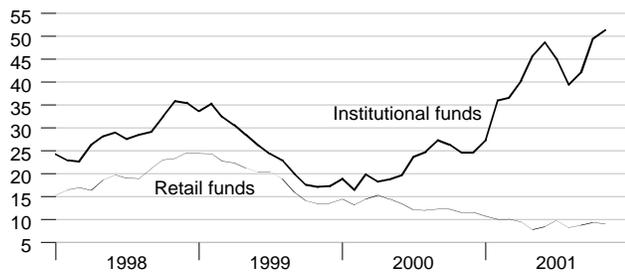
### Checkable and Savings Deposits

Percent change from year ago



### Money Market Mutual Fund Shares

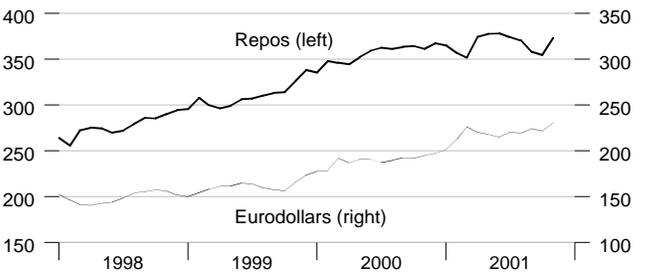
Percent change from year ago



### Repurchase Agreements and Eurodollars

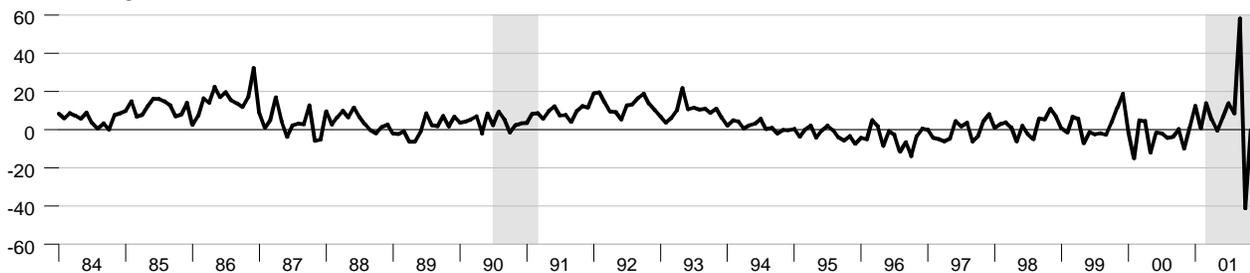
Billions of dollars

Billions of dollars



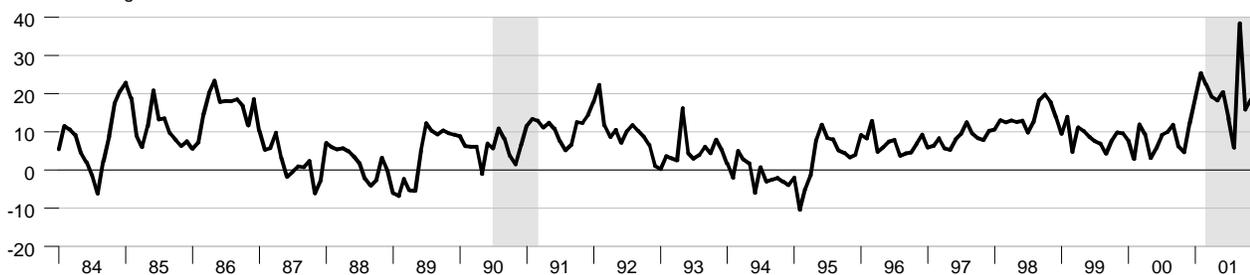
### M1

Percent change at an annual rate



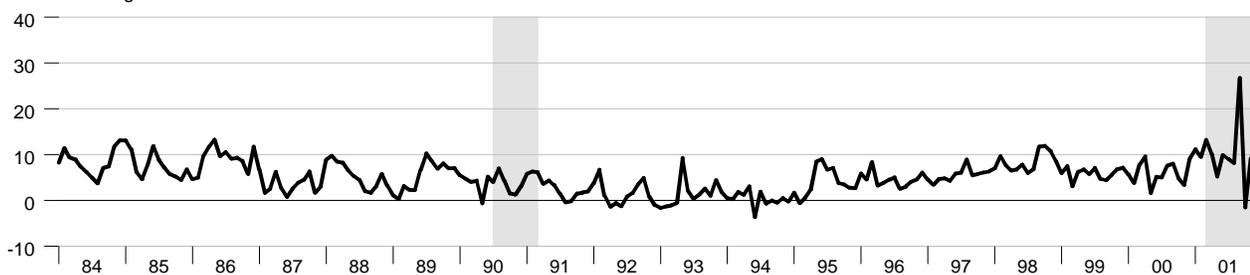
### M2

Percent change at an annual rate



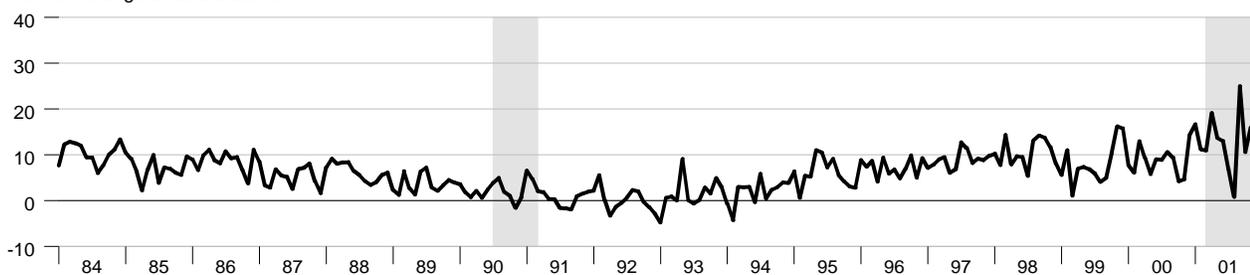
### M3

Percent change at an annual rate

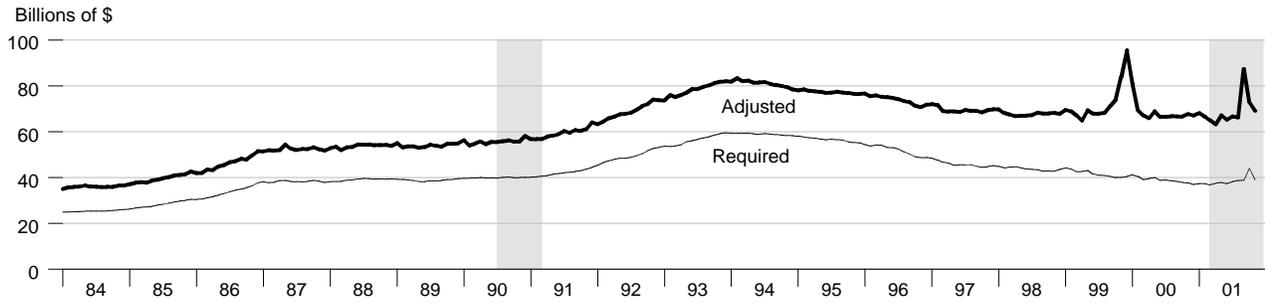


### M3

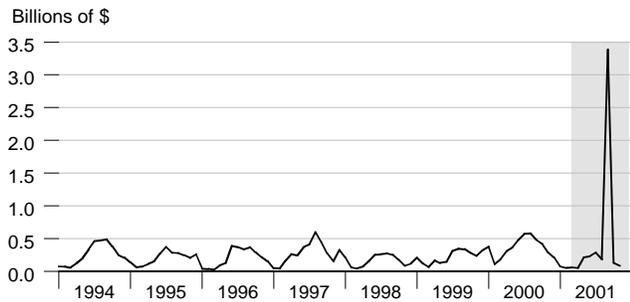
Percent change at an annual rate



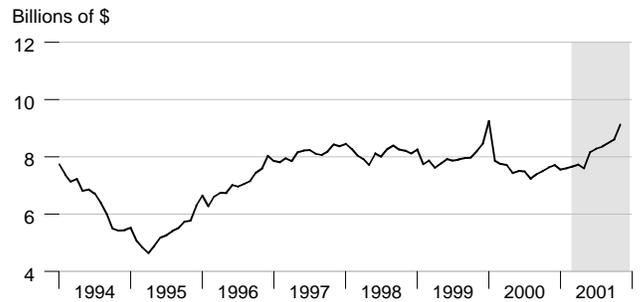
### Adjusted and Required Reserves



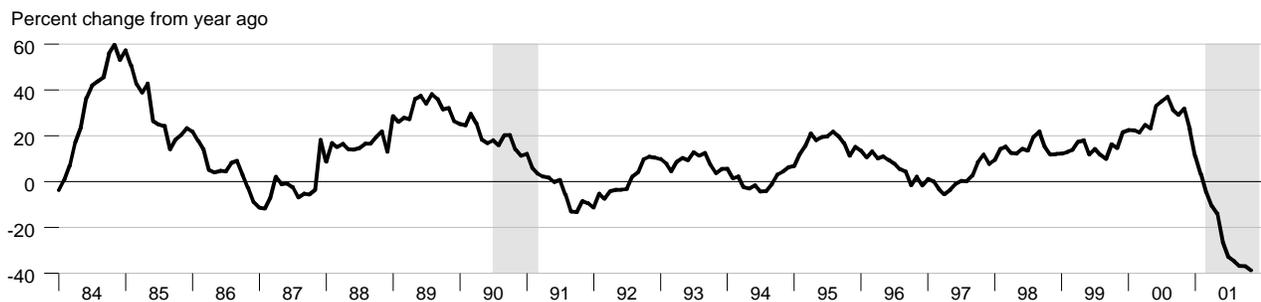
### Total Borrowings, nsa



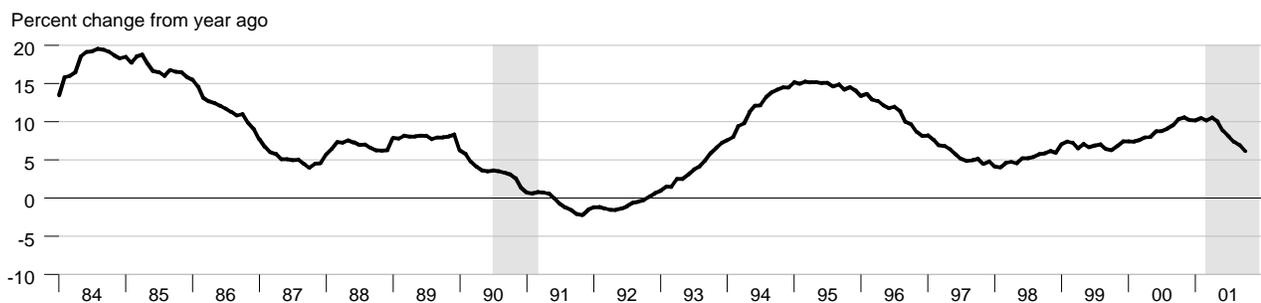
### Excess Reserves plus RCB Contracts



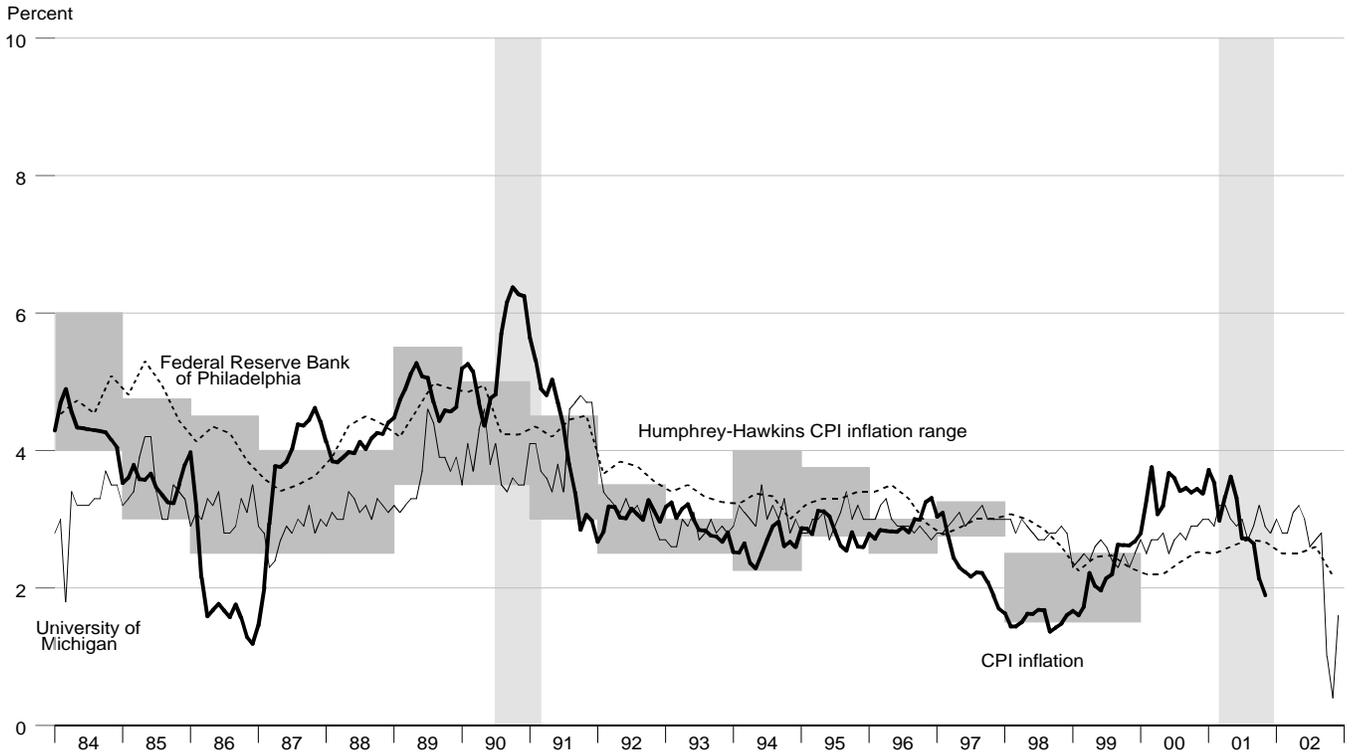
### Nonfinancial Commercial Paper



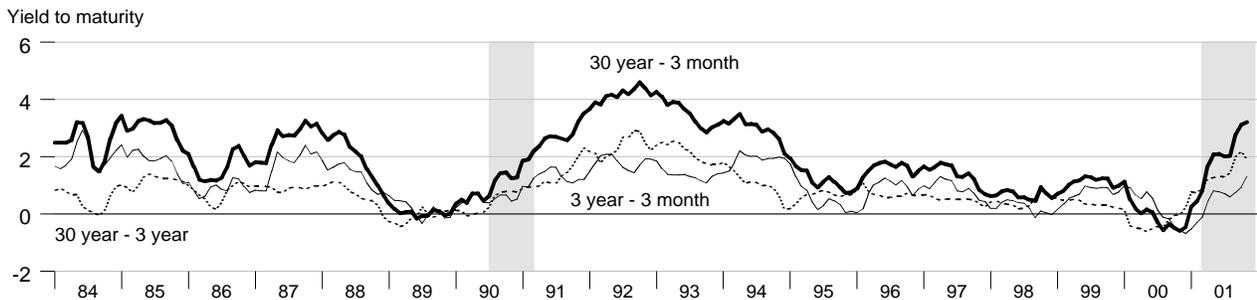
### Consumer Credit



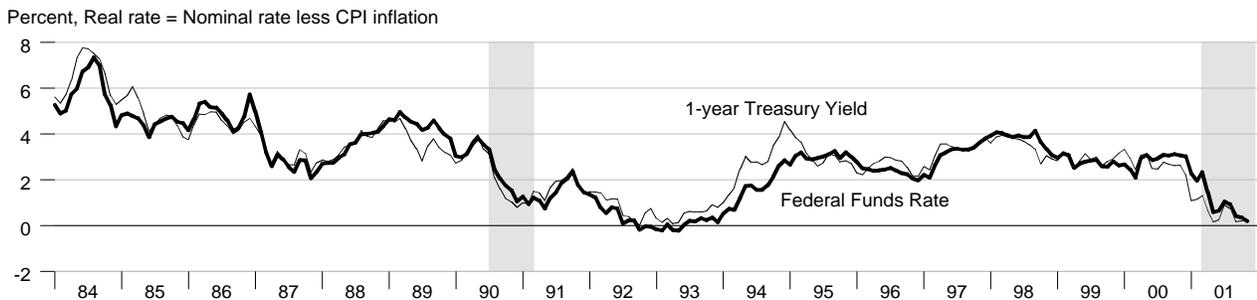
### Inflation and Inflation Expectations



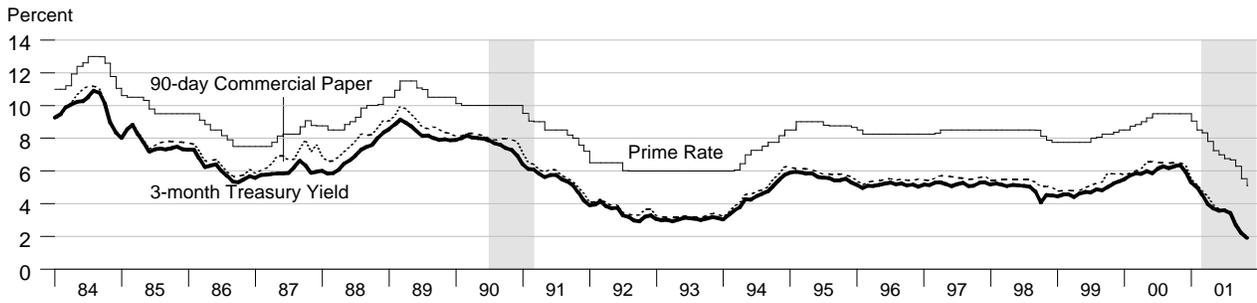
### Treasury Security Yield Spreads



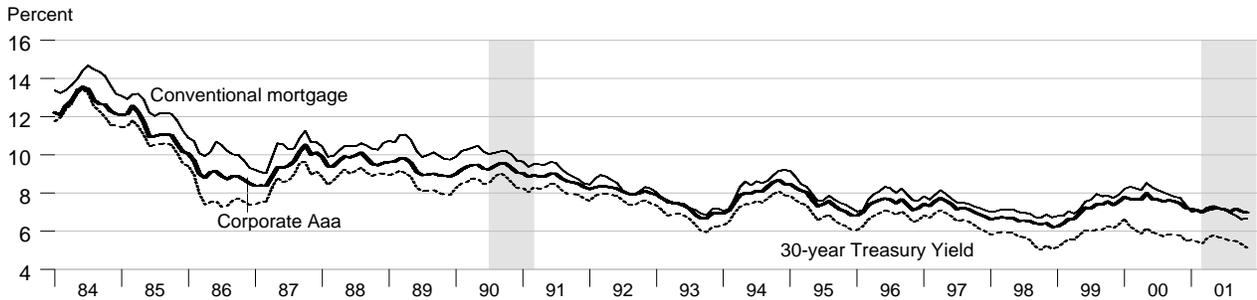
### Real Interest Rates



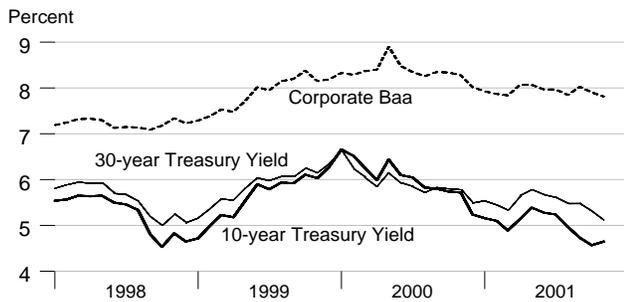
**Short Term Interest Rates**



**Long Term Interest Rates**



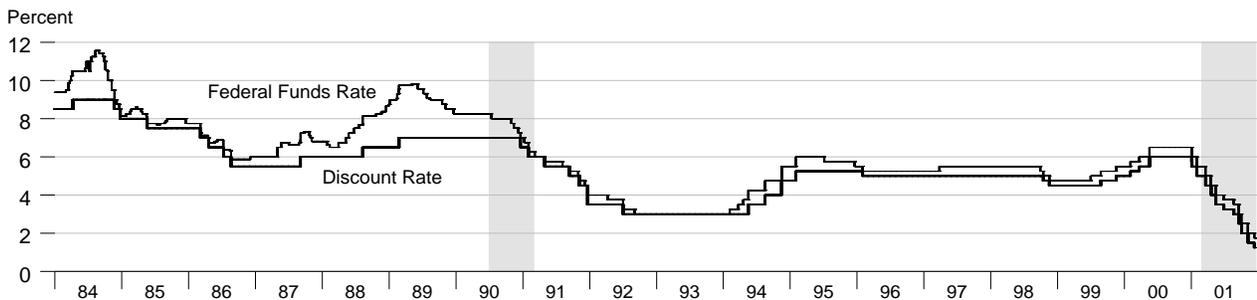
**Long Term Interest Rates**



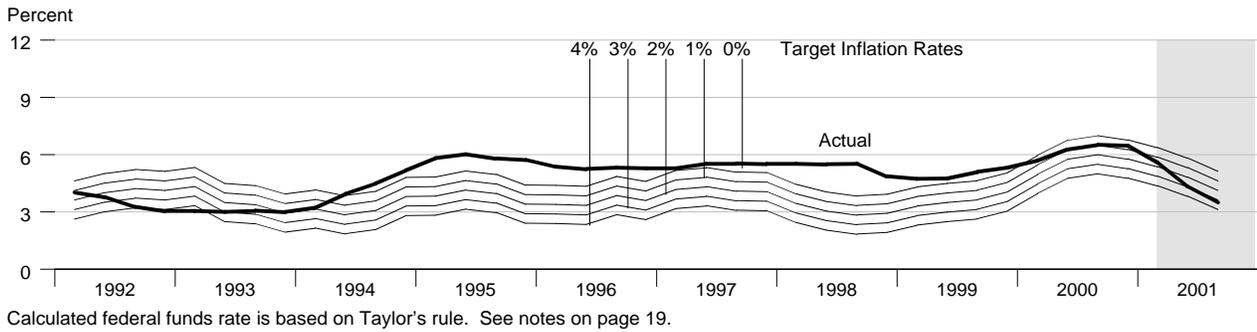
**Short Term Interest Rates**



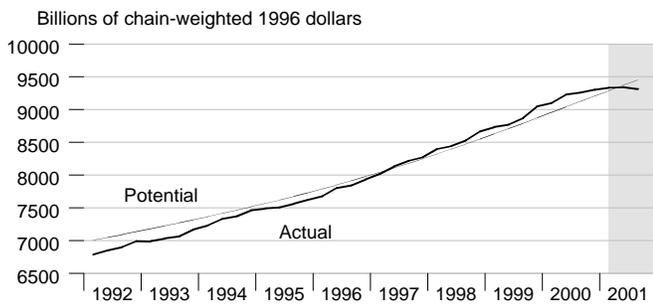
**FOMC Intended Federal Funds Rate and Discount Rate**



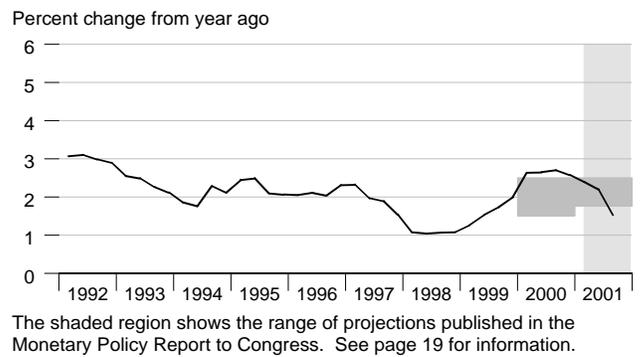
### Federal Funds Rate and Inflation Targets



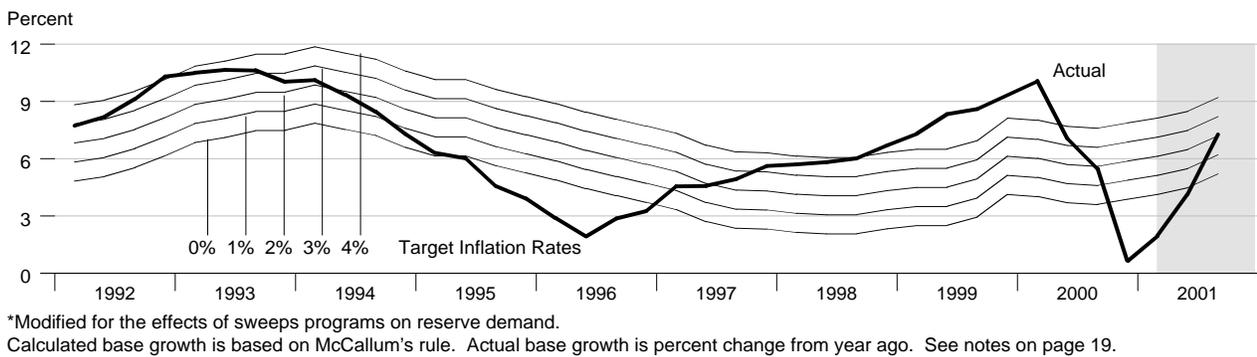
### Actual and Potential Real GDP



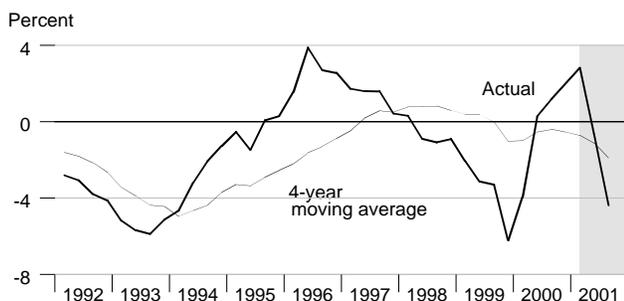
### PCE Inflation and Projections



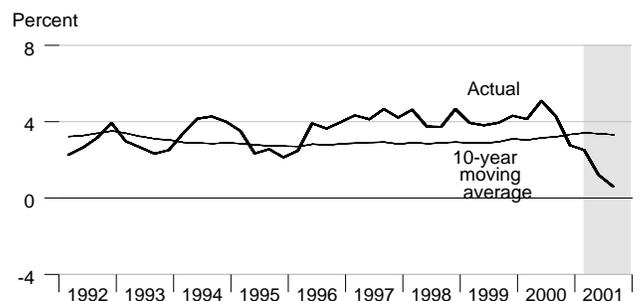
### Monetary Base Growth\* and Inflation Targets



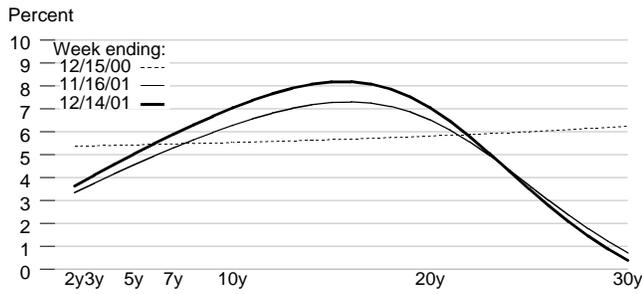
### Monetary Base Velocity Growth



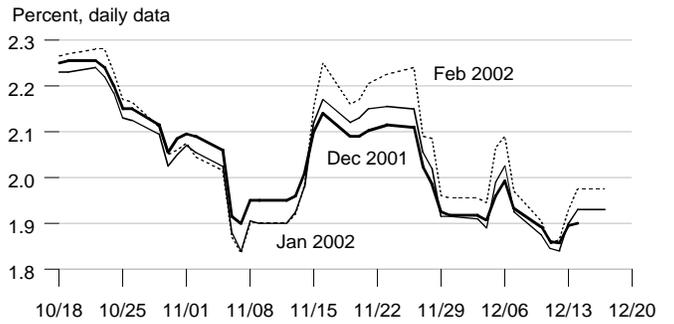
### Real Output Growth



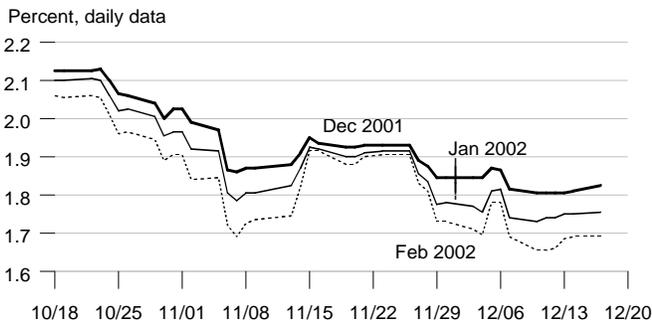
**Implied One-Year Forward Rates**



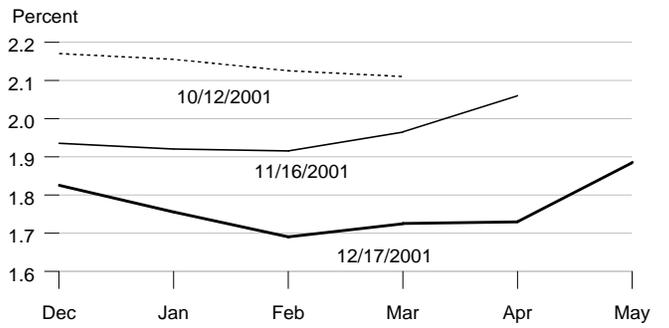
**Rates on 3-Month Eurodollar Futures**



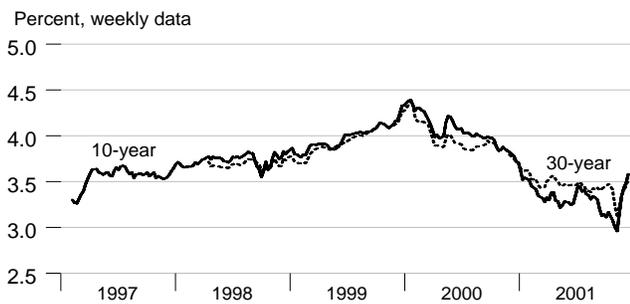
**Rates on Selected Fed Funds Futures Contracts**



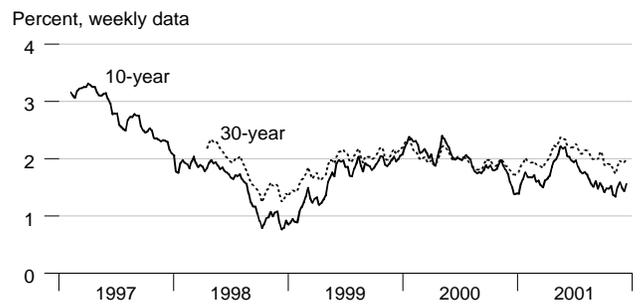
**Implied Yields on Fed Funds Futures**



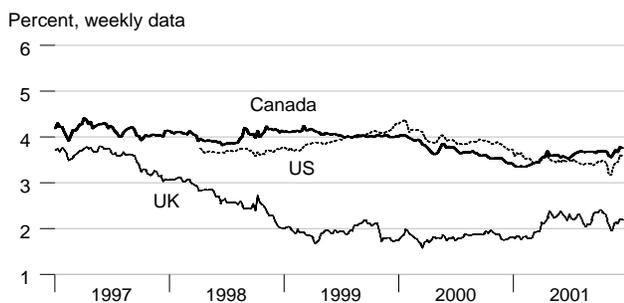
**Inflation-Protected Treasury Yields**



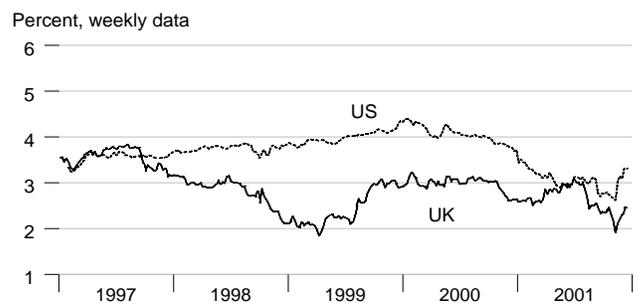
**Inflation-Protected Treasury Yield Spreads**



**Inflation-Indexed 30-Year Bonds**



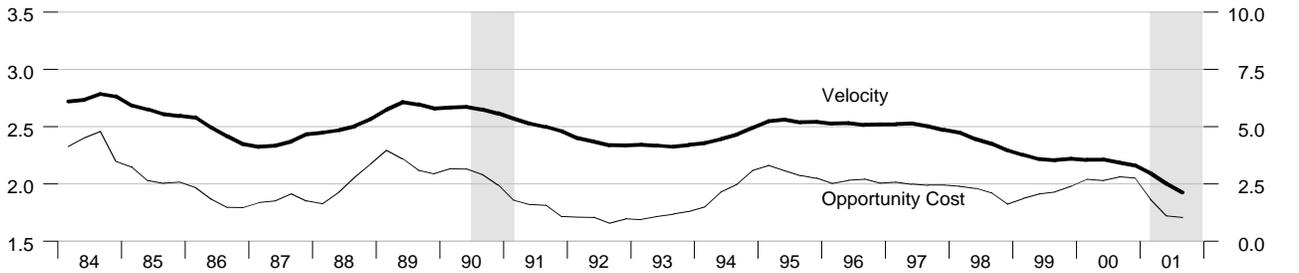
**Inflation-Indexed 10-Year Bonds**



### MZM Velocity and Opportunity Cost

Velocity = Nominal GDP / MZM

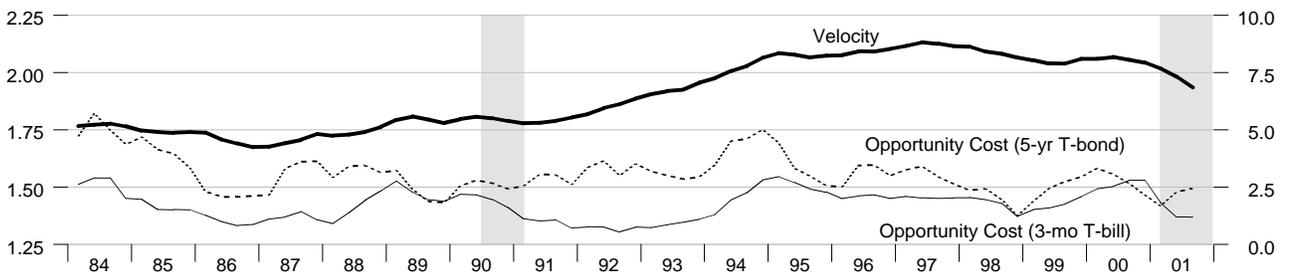
Opportunity Cost = 3 month T-bill rate less MZM own rate



### M2 Velocity and Opportunity Cost

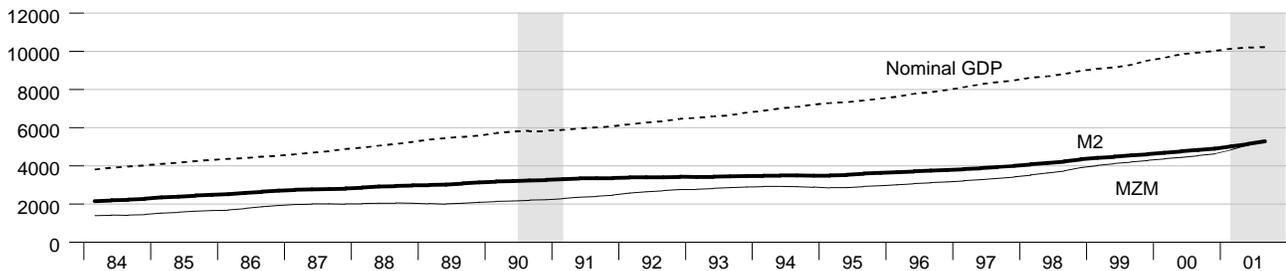
Velocity = Nominal GDP / M2

Opportunity Cost = Treasury rate less M2 own rate



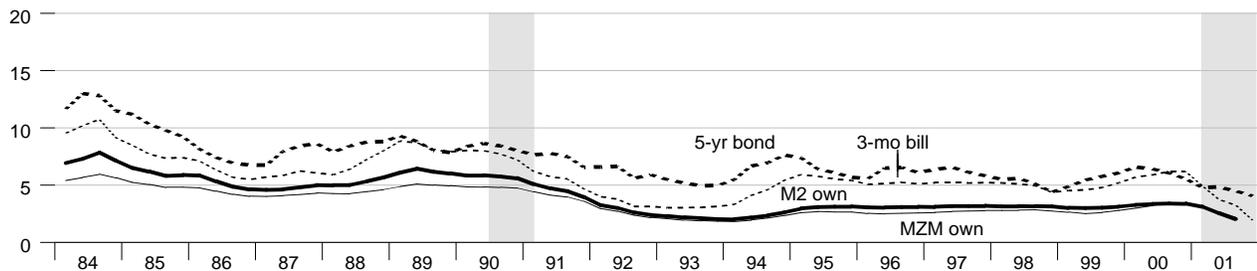
### M2, MZM and Nominal GDP

Billions of \$



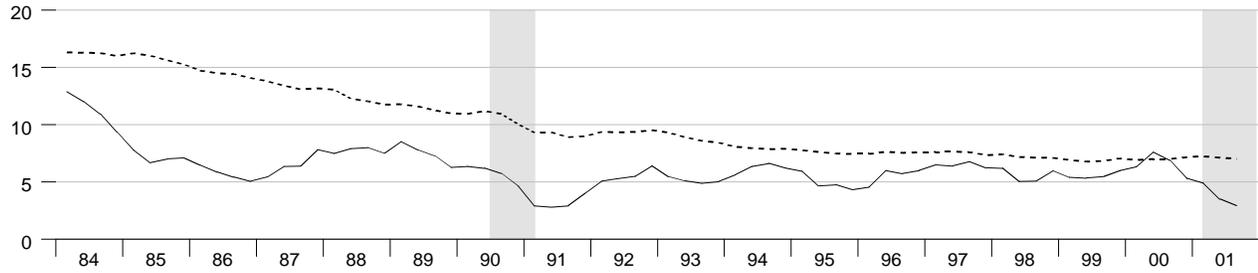
### Interest Rates

Percent



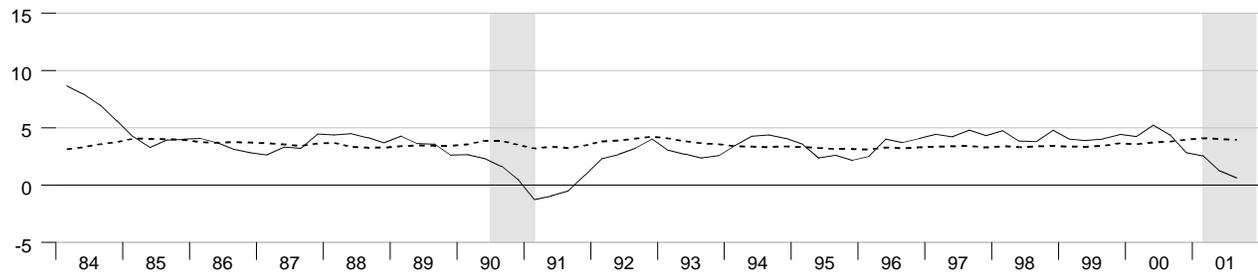
### Gross Domestic Product

Percent change from year ago



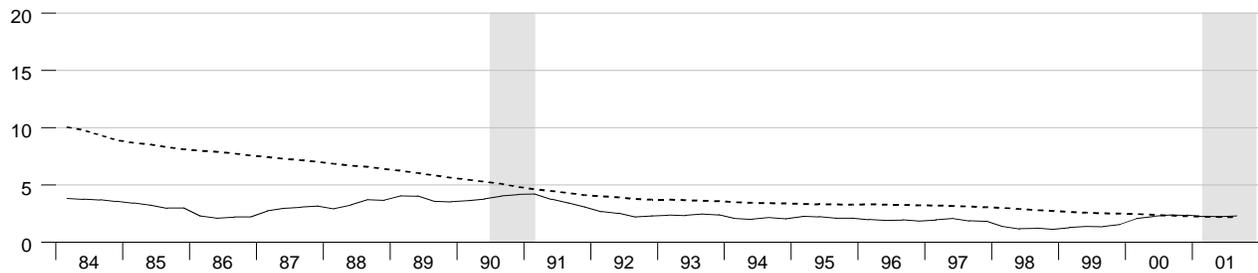
### Real Gross Domestic Product

Percent change from year ago



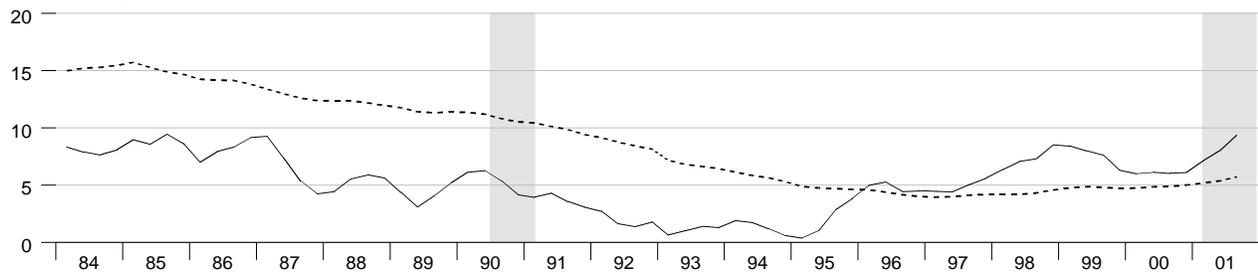
### Gross Domestic Product Price Index

Percent change from year ago



### M2

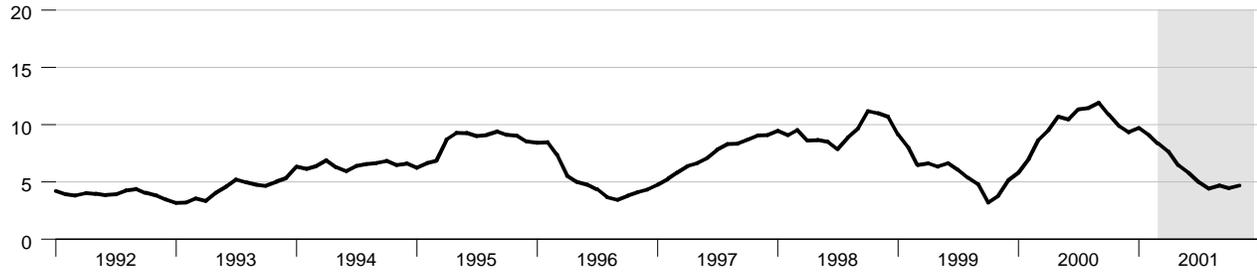
Percent change from year ago



Dashed lines indicate 10-year moving averages

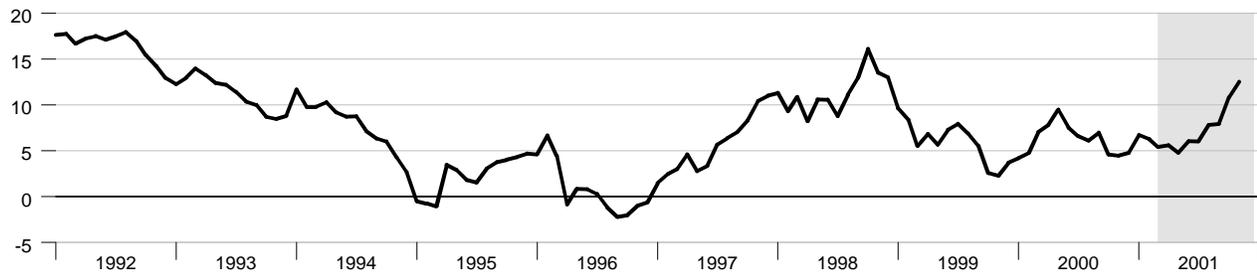
**Bank Credit**

Percent change from year ago



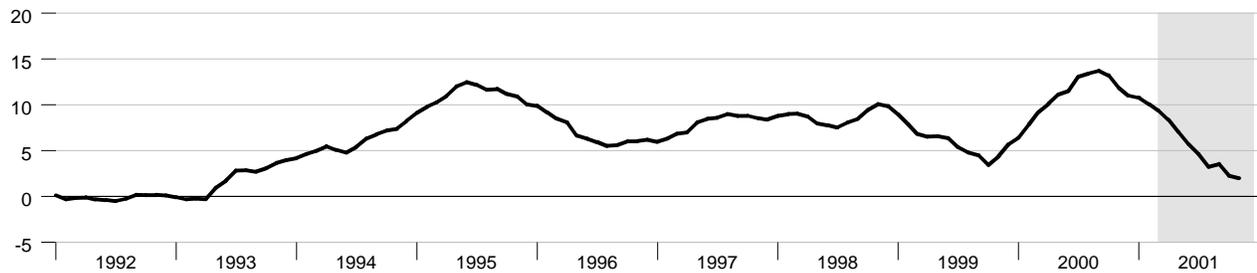
**Investment Securities in Bank Credit at Commercial Banks**

Percent change from year ago



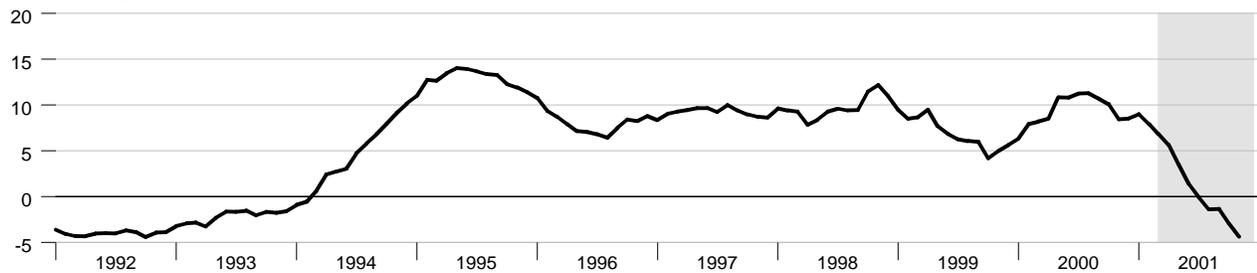
**Total Loans and Leases in Bank Credit at Commercial Banks**

Percent change from year ago

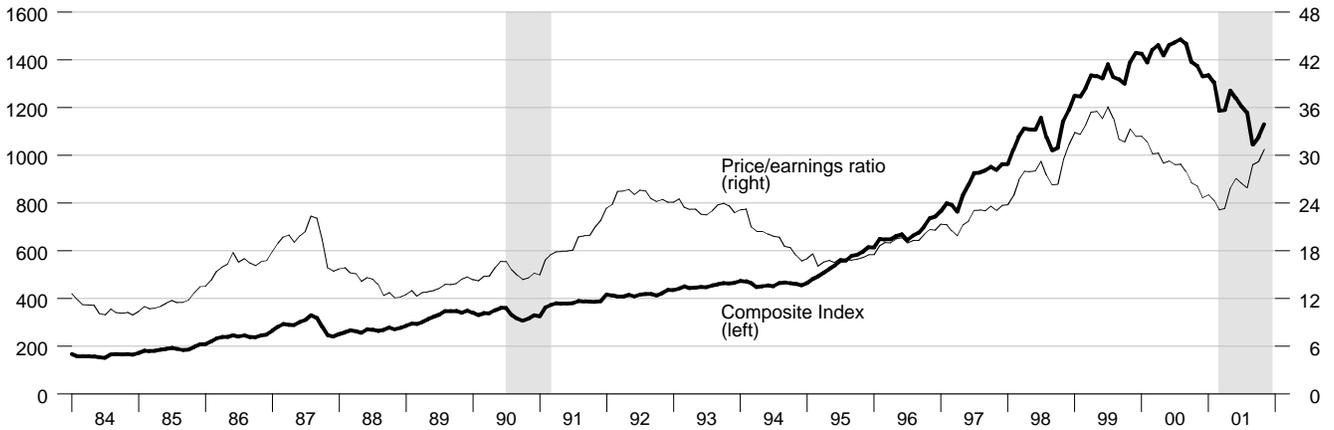


**Commercial and Industrial Loans at Commercial Banks**

Percent change from year ago



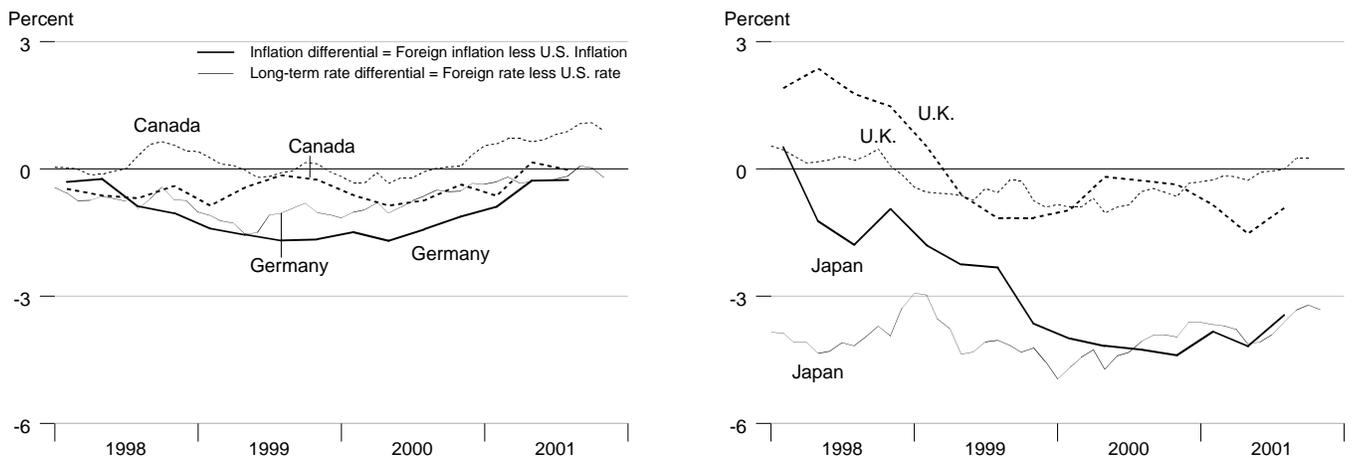
**Standard and Poor's 500**



**Inflation and Long-Term Interest Rates**

	Trend in Consumer Price Inflation Rates Percent change from year ago				Recent Long-Term Government Bond Rates Percent			
	2000Q4	2001Q1	2001Q2	2001Q3	Aug01	Sep01	Oct01	Nov01
United States	3.44	3.41	3.44	2.72	4.97	4.73	4.57	4.65
Canada	3.08	2.77	3.60	2.69	5.85	5.80	5.66	5.55
France	1.89	1.29	2.02	1.79	5.29	5.26	5.04	.
Germany	2.32	2.52	3.16	2.46	4.80	4.80	4.60	4.45
Italy	2.67	2.89	3.05	2.80	5.22	5.20	4.96	4.80
Japan	-0.95	-0.43	-0.74	-0.73	1.36	1.40	1.36	1.33
United Kingdom	3.07	2.55	1.91	1.80	4.96	4.98	4.83	.

**Inflation and Long-Term Interest Rates Differentials**



		Money Stock				Bank			
		M1	MZM	M2	M3	Credit	Monetary Base	Reserves	MSI M2
	1996	1105.818	3096.645	3737.137	4812.342	3685.257	455.572	73.952	217.369
	1997	1069.145	3320.337	3920.325	5208.386	3953.513	478.708	69.523	226.528
	1998	1079.795	3708.093	4207.429	5741.889	4326.609	508.942	67.808	241.581
	1999	1101.661	4166.476	4526.145	6253.952	4582.543	557.865	72.360	257.950
	2000	1103.865	4502.621	4801.277	6839.653	5029.274	590.821	68.327	272.583
	<hr/>								
1999	1	1098.625	4034.795	4428.191	6096.737	4517.075	536.334	68.521	252.707
	2	1102.740	4131.461	4492.285	6191.448	4527.758	545.912	67.392	256.130
	3	1095.560	4210.155	4559.442	6281.652	4581.757	557.969	69.050	259.667
	4	1109.719	4289.492	4624.663	6445.971	4703.582	591.246	84.477	263.297
2000	1	1115.417	4372.669	4693.995	6619.138	4840.295	593.102	72.390	266.870
	2	1109.975	4453.851	4768.125	6768.374	4990.403	586.045	67.097	270.597
	3	1099.581	4545.424	4835.035	6921.989	5111.231	589.054	66.670	274.483
	4	1090.488	4638.538	4907.955	7049.111	5175.166	595.084	67.151	278.383
2001	1	1104.036	4846.579	5028.278	7280.027	5277.646	604.848	66.543	285.307
	2	1119.217	5098.352	5150.435	7547.854	5320.856	610.939	65.201	292.590
	3	1159.852	5312.099	5288.326	7731.356	5351.233	633.752	73.436	300.437
	<hr/>								
1999	Nov	1107.433	4289.669	4624.195	6446.383	4700.687	588.675	84.023	263.240
	Dec	1124.751	4323.846	4651.800	6531.008	4770.463	612.073	95.479	264.810
	<hr/>								
2000	Jan	1123.266	4351.373	4673.848	6572.984	4798.209	604.796	80.824	265.960
	Feb	1109.245	4361.759	4688.853	6606.563	4838.776	589.984	69.258	266.610
	Mar	1113.739	4404.876	4719.283	6677.866	4883.899	584.525	67.089	268.040
	Apr	1117.937	4439.171	4756.990	6729.762	4938.051	583.053	65.913	269.970
	May	1106.717	4450.590	4763.501	6762.314	5002.521	587.863	68.889	270.300
	Jun	1105.271	4471.791	4783.884	6813.046	5030.637	587.220	66.490	271.520
	Jul	1103.378	4505.778	4804.025	6863.549	5068.145	588.032	66.555	272.750
	Aug	1099.390	4542.943	4834.381	6924.094	5106.774	588.436	66.765	274.460
	Sep	1095.976	4587.551	4866.699	6978.325	5158.775	590.694	66.689	276.240
	Oct	1096.197	4610.961	4886.312	7002.862	5144.491	593.064	66.688	277.260
	Nov	1087.147	4628.737	4900.134	7030.164	5165.307	595.549	67.686	277.960
	Dec	1088.120	4675.917	4937.419	7114.308	5215.699	596.639	67.078	279.930
	<hr/>								
2001	Jan	1099.341	4749.629	4983.399	7212.974	5263.792	600.886	68.095	282.530
	Feb	1100.081	4849.931	5023.074	7280.254	5277.709	607.234	66.556	285.100
	Mar	1112.687	4940.176	5078.362	7346.852	5291.438	606.425	64.979	288.290
	Apr	1117.516	5018.886	5121.309	7463.793	5315.649	605.800	63.239	290.720
	May	1116.993	5094.900	5143.748	7548.969	5325.173	613.259	67.119	292.380
	Jun	1123.141	5181.269	5186.247	7630.800	5321.745	613.759	65.246	294.670
	Jul	1136.034	5239.002	5225.467	7674.491	5321.198	619.434	66.649	296.690
	Aug	1144.057	5264.484	5261.157	7679.906	5332.239	627.449	66.271	299.150
	Sep	1199.466	5432.811	5378.354	7839.671	5400.261	654.373	87.387	305.470
	Oct	1158.221	5504.382	5371.693	7908.912	5373.316	644.311	72.814	304.760
	Nov	1158.114	5588.871	5413.173	8014.865	5406.622	644.536	69.096	306.880

\*All values are given in billions of dollars

		Federal	Discount	Prime	3-mo	Treasury Yields			Corporate	S & L	Conventional
		Funds	Rate	Rate		CDs	3 mo	3 yr	30 yr	Aaa Bonds	
1996		5.30	5.02	8.27	5.39	5.15	5.99	6.70	7.37	5.52	7.80
1997		5.46	5.00	8.44	5.62	5.20	6.10	6.61	7.26	5.32	7.60
1998		5.35	4.92	8.35	5.47	4.91	5.14	5.58	6.53	4.93	6.94
1999		4.97	4.62	7.99	5.33	4.78	5.49	5.87	7.04	5.28	7.43
2000		6.24	5.73	9.23	6.46	6.00	6.22	5.94	7.62	5.58	8.06
1999	1	4.73	4.50	7.75	4.90	4.53	4.87	5.37	6.42	4.87	6.88
	2	4.75	4.50	7.75	4.98	4.59	5.35	5.80	6.93	5.05	7.20
	3	5.09	4.60	8.10	5.38	4.79	5.71	6.04	7.33	5.42	7.80
	4	5.31	4.87	8.37	6.06	5.20	6.00	6.25	7.49	5.79	7.83
2000	1	5.68	5.19	8.69	6.03	5.70	6.56	6.30	7.71	5.82	8.26
	2	6.27	5.74	9.25	6.57	5.89	6.52	5.98	7.77	5.72	8.32
	3	6.52	6.00	9.50	6.63	6.20	6.16	5.80	7.61	5.45	8.03
	4	6.47	6.00	9.50	6.59	6.20	5.63	5.69	7.40	5.32	7.64
2001	1	5.59	5.11	8.62	5.26	4.95	4.64	5.44	7.08	5.03	7.01
	2	4.33	3.83	7.34	4.10	3.75	4.43	5.70	7.22	5.11	7.13
	3	3.50	3.06	6.57	3.34	3.24	3.93	5.52	7.11	4.87	6.97
1999	Nov	5.42	4.86	8.37	6.00	5.23	5.92	6.15	7.36	5.77	7.74
	Dec	5.30	5.00	8.50	6.05	5.36	6.14	6.35	7.55	5.82	7.91
2000	Jan	5.46	5.00	8.50	5.95	5.50	6.49	6.63	7.78	5.91	8.21
	Feb	5.73	5.24	8.73	6.01	5.73	6.65	6.23	7.68	5.88	8.33
	Mar	5.85	5.34	8.83	6.14	5.86	6.53	6.05	7.68	5.68	8.24
	Apr	6.02	5.50	9.00	6.28	5.82	6.36	5.85	7.64	5.60	8.15
	May	6.27	5.71	9.24	6.71	5.99	6.77	6.15	7.99	5.87	8.52
	Jun	6.53	6.00	9.50	6.73	5.86	6.43	5.93	7.67	5.69	8.29
	Jul	6.54	6.00	9.50	6.67	6.14	6.28	5.85	7.65	5.53	8.15
	Aug	6.50	6.00	9.50	6.61	6.28	6.17	5.72	7.55	5.43	8.03
	Sep	6.52	6.00	9.50	6.60	6.18	6.02	5.83	7.62	5.40	7.91
	Oct	6.51	6.00	9.50	6.67	6.29	5.85	5.80	7.55	5.46	7.80
	Nov	6.51	6.00	9.50	6.65	6.36	5.79	5.78	7.45	5.38	7.75
	Dec	6.40	6.00	9.50	6.45	5.94	5.26	5.49	7.21	5.11	7.38
2001	Jan	5.98	5.52	9.05	5.62	5.29	4.77	5.54	7.15	4.99	7.03
	Feb	5.49	5.00	8.50	5.26	5.01	4.71	5.45	7.10	5.09	7.05
	Mar	5.31	4.81	8.32	4.89	4.54	4.43	5.34	6.98	5.00	6.95
	Apr	4.80	4.28	7.80	4.53	3.97	4.42	5.65	7.20	5.14	7.08
	May	4.21	3.73	7.24	4.02	3.70	4.51	5.78	7.29	5.15	7.15
	Jun	3.97	3.47	6.98	3.74	3.57	4.35	5.67	7.18	5.03	7.16
	Jul	3.77	3.25	6.75	3.66	3.59	4.31	5.61	7.13	4.79	7.13
	Aug	3.65	3.16	6.67	3.48	3.44	4.04	5.48	7.02	4.89	6.95
	Sep	3.07	2.77	6.28	2.87	2.69	3.45	5.48	7.17	4.93	6.82
	Oct	2.49	2.02	5.53	2.31	2.20	3.14	5.32	7.03	4.89	6.62
	Nov	2.09	1.58	5.10	2.03	1.91	3.22	5.12	6.97	4.85	6.66

\*All values are given as a percent at an annual rate

		M1	MZM	M2	M3
<b>Percent change from previous period</b>					
<hr/>					
	1996	-3.21	6.56	4.79	6.75
	1997	-3.32	7.22	4.90	8.23
	1998	1.00	11.68	7.32	10.24
	1999	2.03	12.36	7.58	8.92
	2000	0.20	8.07	6.08	9.37
<hr/>					
1999	1	0.83	2.98	1.79	1.89
	2	0.37	2.40	1.45	1.55
	3	-0.65	1.90	1.49	1.46
	4	1.29	1.88	1.43	2.62
2000	1	0.51	1.94	1.50	2.69
	2	-0.49	1.86	1.58	2.25
	3	-0.94	2.06	1.40	2.27
	4	-0.83	2.05	1.51	1.84
2001	1	1.24	4.49	2.45	3.28
	2	1.37	5.19	2.43	3.68
	3	3.63	4.19	2.68	2.43
<hr/>					
1999	Nov	0.95	0.82	0.57	1.35
	Dec	1.56	0.80	0.60	1.31
<hr/>					
2000	Jan	-0.13	0.64	0.47	0.64
	Feb	-1.25	0.24	0.32	0.51
	Mar	0.41	0.99	0.65	1.08
	Apr	0.38	0.78	0.80	0.78
	May	-1.00	0.26	0.14	0.48
	Jun	-0.13	0.48	0.43	0.75
	Jul	-0.17	0.76	0.42	0.74
	Aug	-0.36	0.82	0.63	0.88
	Sep	-0.31	0.98	0.67	0.78
	Oct	0.02	0.51	0.40	0.35
	Nov	-0.83	0.39	0.28	0.39
	Dec	0.09	1.02	0.76	1.20
<hr/>					
2001	Jan	1.03	1.58	0.93	1.39
	Feb	0.07	2.11	0.80	0.93
	Mar	1.15	1.86	1.10	0.91
	Apr	0.43	1.59	0.85	1.59
	May	-0.05	1.51	0.44	1.14
	Jun	0.55	1.70	0.83	1.08
	Jul	1.15	1.11	0.76	0.57
	Aug	0.71	0.49	0.68	0.07
	Sep	4.84	3.20	2.23	2.08
	Oct	-3.44	1.32	-0.12	0.88
	Nov	-0.01	1.53	0.77	1.34