reported yields. These yields are smoothed by fitting the regression suggested by Nelson and Siegel (1987),

$$R(m) = a_0 + (a_1 + a_2)(1 - e^{-m/50})/(m/50) - a_2 \times e^{-m/50},$$

and forward rates are calculated from these smoothed yields using equation (a) in table 13.1 of Shiller (1990),

$$f(m) = [D(m)R(m) - D(m-1)] / [D(m) - D(m-1)],$$

where duration is approximated as $D(m) = (1 - e^{-R(m) \times m})/R(m)$. These rates are linear approximations to the true instantaneous forward rates; see Shiller (1990). For a discussion of the use of forward rates as indicators of inflation expectations, see Sharpe (1997). **Rates on 3-Month Eurodollar Futures** and **Rates on Selected Federal Funds Futures Contracts** trace through time the yield on three specific contracts. **Rates on Federal Funds Futures on Selected Dates** displays a single day's snapshot of yields for contracts expiring in the months shown on the horizontal axis. **Inflation-Indexed Treasury Securities** are yields on the most recently issued inflation-indexed securities of 10- and 30-year original maturities. **Inflation-Indexed 10-Year Government Notes** shows the yield of an inflation-indexed note that is scheduled to mature in approximately (but not greater than) 10 years. The current French note has a maturity date of 7/25/2013, the current U.K. note has a maturity date of 8/16/2013, and the current U.S. note has a maturity date of 1/15/2015. **Inflation-Indexed Treasury Yield Spreads** and **Inflation-Indexed 10-Year Government Yield Spreads** equal the difference between the yields on the most recently issued inflation-indexed securities and the unadjusted security yields of similar maturity.

Page 12: **Velocity** (for MZM and M2) equals the ratio of GDP, measured in current dollars, to the level of the monetary aggregate. **MZM** and **M2 Own Rates** are weighted averages of the rates received by households and firms on the assets included in the aggregates. Prior to 1982, the 3-month T-bill rates are secondary market yields. From 1982 forward, rates are 3-month constant maturity yields.

Page 13: **Real Gross Domestic Product** is GDP as measured in chained 2000 dollars. The **Gross Domestic Product Price Index** is the implicit price deflator for GDP, which is defined by the Bureau of Economic Analysis, U.S. Department of Commerce, as the ratio of GDP measured in current dollars to GDP measured in chained 2000 dollars.

Page 14: **Investment Securities** are all securities held by commercial banks in both investment and trading accounts.

Page 15: **Inflation Rate Differentials** are the differences between the foreign consumer price inflation rates and year-over-year changes in the U.S. all-items Consumer Price Index.

Page 17: **Treasury Yields** are Treasury constant maturities as reported in the Board of Governors of the Federal Reserve System's H.15 release.

Sources

Agence France Trésor: French note yields.

Bank of Canada: Canadian note yields.

Bank of England: U.K. note yields.

Board of Governors of the Federal Reserve System: Monetary aggregates and components: H.6 release. Bank credit and components: H.8 release. Consumer credit: G.19 release. Required reserves, excess reserves, clearing balance contracts, and discount window borrowing: H.4.1 and H.3 releases. Interest rates: H.15 release. Nonfinancial commercial paper: Board of Governors website. Nonfinancial debt: Z.1 release. M2 own rate.

Bureau of Economic Analysis: GDP.

Bureau of Labor Statistics: CPI.

Chicago Board of Trade: Federal funds futures contract.

Chicago Mercantile Exchange: Eurodollar futures.

Congressional Budget Office: Potential real GDP.

Federal Reserve Bank of Philadelphia: Survey of Professional Forecasters inflation expectations.

Federal Reserve Bank of St. Louis: Adjusted monetary base and adjusted reserves, monetary services index, MZM own rate, one-year forward rates.

Organization for Economic Cooperation and Development: International interest and inflation rates.

Standard & Poor's: Stock price-earnings ratio, stock price composite index.

University of Michigan Survey Research Center: Median expected price change.

U.S. Department of the Treasury: U.S. security yields.

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Note: *Available on the Internet at research.stlouisfed.org/publications/review/.

Monetary Trends

May 2005

Has the Bond Market Forgotten Oil?

The financial press often links daily activity in financial markets to general economic news. As of late, the world price of oil has been one of the most often cited causes of fluctuations in securities prices. Rising oil prices have been blamed for declining stock prices, weakness in the dollar exchange rate, and, to some extent, movements in government bond yields. Still, compared with other periods of rising oil prices, the bond market's reaction has been limited.

Since the oil crises of the 1970s, the yields on government securities have typically risen when the price of oil has risen, and fallen when the price of oil has fallen. In the 1970s, a rising price of oil often presaged a sustained increase in the rate of inflation; bond investors responded by demanding higher nominal yields to protect their real returns. Similarly, in the 1980s and 1990s, when oil prices and inflation generally fell, bond yields also fell.

The chart illustrates the positive long-run correlation between the price of oil and government security yields from the 1970s through the 1990s. Alongside the price of oil, the chart shows the yield on 10-year U.S. Treasury securities. To highlight longer-term relationships, both series are plotted as eight-quarter moving averages, which smoothes out short-run fluctuations in the data.

The chart also illustrates that the yield on government securities trended downward between 2001 and 2004, even as the price of oil more the doubled, and offers a clue for this unusual pattern: The increase in the price of oil was not accompanied by a significant increase in the overall rate of inflation (shown here as the eight-quarter moving average of the year-over-year percent change in the consumer price index).

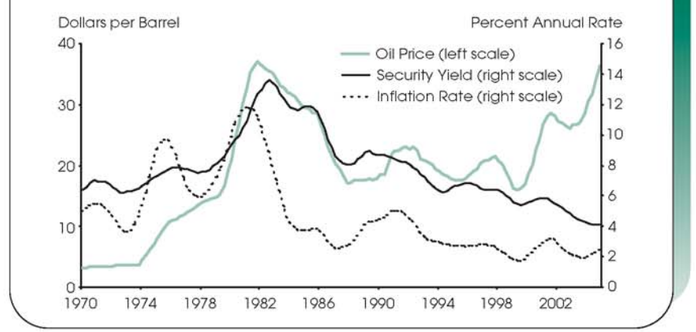
The price of oil hit its recent low in December 1998 and has risen almost continuously since December 2001. While the increase in the price of oil in 1999 and 2000 was accompanied by a modest increase in bond yields and consumer price inflation, the increase that began in 2001 has had little or no perceptible effect on either bond yields or inflation. The current lack of a response of bond yields to the rising price of oil probably reflects both the overall condition of the U.S. economy when the price of oil began to rise and confidence on the part of bond investors that even a large increase in the price of oil will not have a substantial impact on the long-run rate of inflation.

The U.S. economy was just beginning to emerge from a recession when the price of oil began to rise in late 2001. Inflation was low and, unlike most recoveries, payroll employment failed to grow. Few analysts viewed inflation as a threat and, as employment continued to lag, a few warned that deflation was possible. In this environment, government security yields remained low.

More recently, employment growth has resumed and deflation fears have evaporated. However, the rising price of oil is still not widely viewed as a precursor to higher inflation. In part, this could reflect the fact that U.S. firms are more energy efficient than they were in the 1970s. Many analysts also believe that the price of oil will decline from its recent high level. In addition, however, many commentators argue that the Federal Reserve is unlikely to allow higher energy prices to result in a sustained increase in the rate of inflation. When the price of oil rose in the 1970s, the Fed failed to tighten monetary policy sufficiently to prevent higher inflation and bond yields. The importance of maintaining a stable price level is much more widely recognized today than in the 1970s, and the bond market has considerable faith that the Fed will not allow inflation to rise (or fall) significantly from its present level. As long as such faith persists, the price of oil can rise and fall without causing large movements in bond yields.

—David C. Wheelock

Oil Prices, Government Security Yields, and Inflation, 1970-2004



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

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Conventions used in this publication:

1. Unless otherwise indicated, data are monthly.
2. Shaded areas indicate recessions, as determined by the National Bureau of Economic Research.
3. *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: $[(x_t/x_{t-12})-1]\times 100$.

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Definitions

M1: The sum of currency held outside the vaults of depository institutions, Federal Reserve Banks, and the U.S. Treasury; travelers checks; and demand and other checkable deposits issued by financial institutions (except demand deposits due to the Treasury and depository institutions), minus cash items in process of collection and Federal Reserve float.

MZM (money, zero maturity): M2 minus small-denomination time deposits, plus institutional money market mutual funds (that is, those included in M3 but excluded from M2). The label MZM was coined by William Poole (1991); the aggregate itself was proposed earlier by Motley (1988).

M2: M1 plus savings deposits (including money market deposit accounts) and small-denomination (under $100,000) time deposits issued by financial institutions; and shares in retail money market mutual funds (funds with initial investments under $50,000), net of retirement accounts.

M3: M2 plus large-denomination ($100,000 or more) time deposits; repurchase agreements issued by depository institutions; Eurodollar deposits, specifically, dollar-denominated deposits due to nonbank U.S. addresses held at foreign offices of U.S. banks worldwide and all banking offices in Canada and the United Kingdom; and institutional money market mutual funds (funds with initial investments of $50,000 or more).

Bank Credit: All loans, leases, and securities held by commercial banks.

Domestic Nonfinancial Debt: Total credit market liabilities of the U.S. Treasury, federally sponsored agencies, state and local governments, households, and nonfinancial firms. End-of-period basis.

Adjusted Monetary Base: The sum of currency in circulation outside Federal Reserve Banks and the U.S. Treasury, deposits of depository financial institutions at Federal Reserve Banks, and an adjustment for the effects of changes in statutory reserve requirements on the quantity of base money held by depositories. This series is a spliced chain index; see Anderson and Rasche (1996a,b, 2001, 2003).

Adjusted Reserves: The sum of vault cash and Federal Reserve Bank deposits held by depository institutions and an adjustment for the effects of changes in statutory reserve requirements on the quantity of base money held by depositories. This spliced chain index is numerically larger than the Board of Governors' measure, which excludes vault cash not used to satisfy statutory reserve requirements and Federal Reserve Bank deposits used to satisfy required clearing balance contracts; see Anderson and Rasche (1996a, 2001, 2003).

Monetary Services Index: An index that measures the flow of monetary services received by households and firms from their holdings of liquid assets; see Anderson, Jones, and Nesmith (1997). Indexes are shown for the assets included in M2, with additional data at research.stlouisfed.org/msi/index.html.

Note: M1, M2, M3, Bank Credit, and Domestic Nonfinancial Debt are constructed and published by the Board of Governors of the Federal Reserve System. For details, see *Statistical Supplement to the Federal Reserve Bulletin*, tables 1.21 and 1.26. MZM, Adjusted Monetary Base, Adjusted Reserves, and Monetary Services Index are constructed and published by the Research Division of the Federal Reserve Bank of St. Louis.

Notes

Page 3: Readers are cautioned that, since early 1994, the level and growth of M1 have been depressed by retail sweep programs that reclassify transactions deposits (demand deposits and other checkable deposits) as savings deposits overnight, thereby reducing banks' required reserves; see Anderson and Rasche (2001) and research.stlouisfed.org/aggreg/swdata.html. **Primary Credit Rate**, **Discount Rate,** and **Intended Federal Funds Rate** shown in the chart **Reserve Market Rates** are plotted as of the date of the change, while the **Effective Federal Funds Rate** is plotted as of the end of the month. Interest rates in the table are monthly averages from the Board of Governors H.15 Statistical Release. The **Treasury Yield Curve** shows constant maturity yields calculated by the U.S. Treasury for securities with 3 months and 1, 2, 3, 5, 7, and 10 years to maturity. Daily data and descriptions are available at research.stlouisfed.org/fred2/. See also *Statistical Supplement to the Federal Reserve Bulletin*, table 1.35. The 30-year constant maturity series was discontinued by the Treasury as of February 18, 2002.

Page 5: **Checkable Deposits** is the sum of demand and other checkable deposits. **Savings Deposits** is the sum of money market deposit accounts and passbook and statement savings. **Time Deposits** have a minimum initial maturity of 7 days. **Large Time Deposits** are deposits of $100,000 or more. **Retail** and **Institutional Money Market Mutual Funds** are as included in M2 and the non-M2 component of M3, respectively.

Page 7: **Excess Reserves plus RCB (Required Clearing Balance) Contracts** equals the amount of deposits at Federal Reserve Banks held by depository institutions but not applied to satisfy statutory reserve requirements. (This measure excludes the vault cash held by depository institutions that is not applied to satisfy statutory reserve requirements.) **Consumer Credit** includes most short- and intermediate-term credit extended to individuals. See *Statistical Supplement to the Federal Reserve Bulletin*, table 1.55.

Page 8: **Inflation Expectations** measures include the quarterly Federal Reserve Bank of Philadelphia *Survey of Professional Forecasters*, the monthly University of Michigan Survey Research Center's *Surveys of Consumers*, and the annual Federal Open Market Committee (FOMC) range as reported to the Congress in the February testimony that accompanies the Monetary Policy Report to the Congress. Beginning February 2000, the FOMC began using the personal consumption expenditures (PCE) price index to report its inflation range; the FOMC then switched to the PCE chain-type price index excluding food and energy prices ("core") beginning July 2004. Accordingly, neither are shown on this graph. **CPI Inflation** is the percentage change from a year ago in the consumer price index for all urban consumers. **Real Interest Rates** are ex post measures, equal to nominal rates minus CPI inflation.

Page 9: **FOMC Intended Federal Funds Rate** is the level (or midpoint of the range, if applicable) of the federal funds rate that the staff of the FOMC expected to be consistent with the desired degree of pressure on bank reserve positions. In recent years, the FOMC has set an explicit target for the federal funds rate.

Page 10: **Federal Funds Rate and Inflation Targets** shows the observed federal funds rate, quarterly, and the level of the funds rate implied by applying Taylor's (1993) equation

$$f_t^* = 2.5 + \pi_{t-1} + (\pi_{t-1} - \pi^*)/2 + 100 \times (y_{t-1} - y_{t-1}^P)/2$$

to five alternative target inflation rates, $\pi^* = 0, 1, 2, 3, 4$ percent, where f_t^* is the implied federal funds rate, π_{t-1} is the previous period's inflation rate (PCE) measured on a year-over-year basis, y_{t-1} is the log of the previous period's level of real gross domestic product (GDP), and y_{t-1}^P is the log of an estimate of the previous period's level of potential output. **Potential Real GDP** is as estimated by the Congressional Budget Office.

Monetary Base Growth and Inflation Targets shows the quarterly growth of the adjusted monetary base (modified to include an estimate of the effect of sweep programs) implied by applying McCallum's (1988, 1993) equation

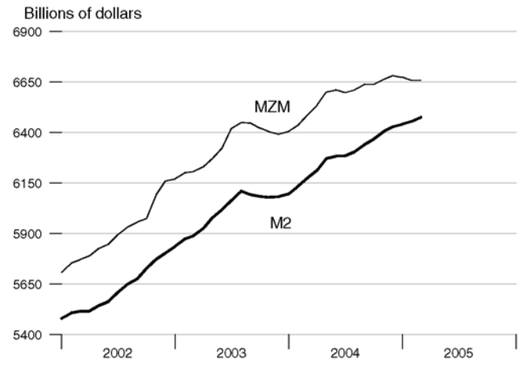
$$\Delta MB_t^* = \pi^* + (\text{10-year moving average growth of real GDP}) - (\text{4-year moving average of base velocity growth})$$

to five alternative target inflation rates, $\pi^* = 0, 1, 2, 3, 4$ percent, where ΔMB_t^* is the implied growth rate of the adjusted monetary base. The 10-year moving average growth of real GDP for a quarter t is calculated as the average quarterly growth during the previous 40 quarters, at an annual rate, by the formula $((y_t - y_{t-40})/40) \times 400$, where y_t is the log of real GDP. The 4-year moving average of base velocity growth is calculated similarly. To adjust the monetary base for the effect of retail-deposit sweep programs, we add to the monetary base an amount equal to 10 percent of the total amount swept, as estimated by the Federal Reserve Board staff. These estimates are imprecise, at best. Sweep program data are found at research.stlouisfed.org/aggreg/swdata.html.

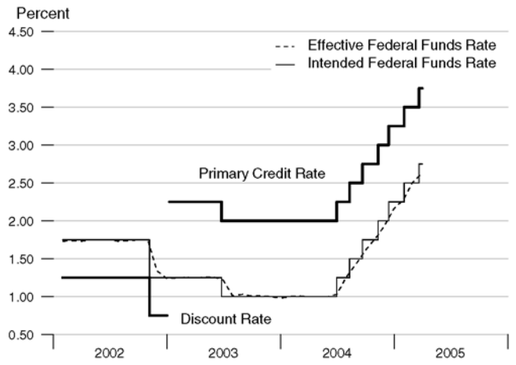
Page 11: **Implied One-Year Forward Rates** are calculated by this Bank from Treasury constant maturity yields. Yields to maturity, $R(m)$, for securities with $m = 1,\ldots,$ 10 years to maturity are obtained by linear interpolation between

		M1	MZM	M2	M3
Percent change at an annual rate					
2000		0.18	8.12	6.09	9.43
2001		3.03	15.80	8.70	11.40
2002		4.85	12.85	7.57	8.03
2003		6.42	7.40	6.94	6.40
2004		5.52	3.91	4.54	5.23
2003	1	7.95	7.76	6.84	6.59
	2	9.87	5.30	7.36	5.10
	3	7.60	10.41	7.66	7.72
	4	2.39	-2.03	-0.42	-0.25
2004	1	5.97	2.37	3.49	5.48
	2	5.97	8.60	7.82	9.40
	3	3.60	2.07	3.53	4.27
	4	5.51	2.69	5.67	3.71
2005	1	0.45	0.16	3.59	4.26
2003	Mar	2.42	1.09	3.31	2.37
	Apr	6.44	4.41	7.19	4.23
	May	19.99	8.15	10.96	7.90
	Jun	9.71	9.91	8.25	7.39
	Jul	3.64	18.21	8.84	12.68
	Aug	8.78	5.57	9.10	4.40
	Sep	0.33	-0.69	-3.58	-0.39
	Oct	0.84	-4.47	-1.54	-0.47
	Nov	1.38	-3.57	-0.90	-2.37
	Dec	6.78	-1.89	0.73	0.26
2004	Jan	-2.02	2.50	2.58	7.85
	Feb	16.59	6.03	7.74	8.61
	Mar	11.47	9.07	7.56	10.18
	Apr	0.31	8.95	7.37	8.75
	May	3.51	11.92	11.33	11.74
	Jun	6.29	2.02	2.34	5.26
	Jul	-6.62	-2.39	0.36	0.52
	Aug	16.10	2.48	4.00	4.19
	Sep	4.04	4.94	6.66	6.23
	Oct	0.04	-0.15	5.03	1.08
	Nov	13.29	4.40	6.95	3.76
	Dec	-1.31	3.47	4.47	5.92
2005	Jan	-8.41	-1.47	2.52	5.10
	Feb	6.45	-2.84	2.57	2.34
	Mar	5.97	0.21	3.64	2.62

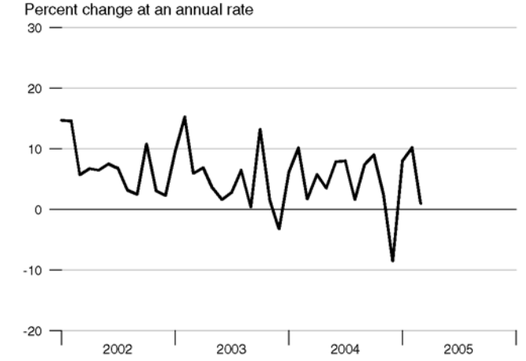
M2 and MZM



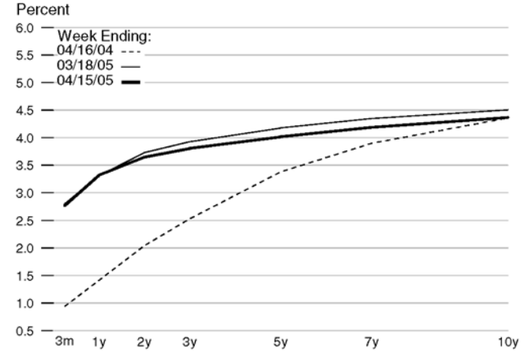
Reserve Market Rates



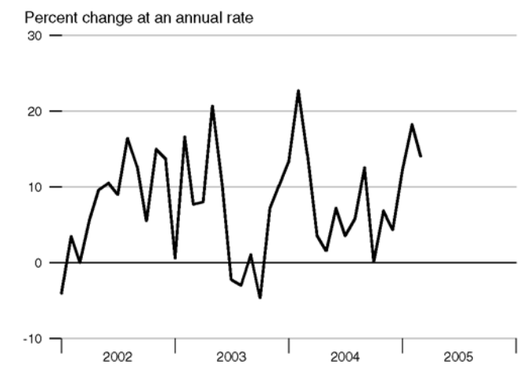
Adjusted Monetary Base



Treasury Yield Curve



Total Bank Credit

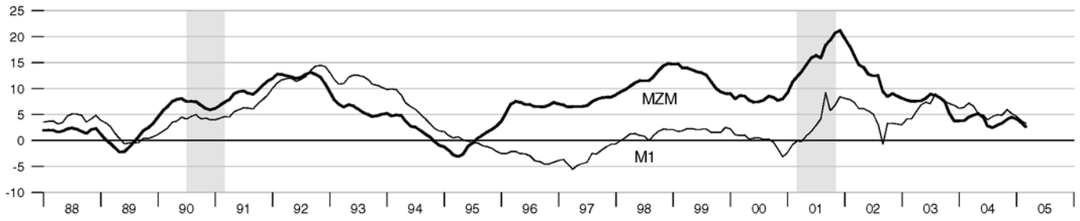


Interest Rates

	Jan 05	Feb 05	Mar 05
Federal Funds Rate	2.28	2.50	2.63
Prime Rate	5.25	5.49	5.58
Primary Credit Rate	3.25	3.49	3.58
Conventional Mortgage Rate	5.71	5.63	5.93
Treasury Yields:			
3-Month Constant Maturity	2.37	2.58	2.80
6-Month Constant Maturity	2.68	2.85	3.09
1-Year Constant Maturity	2.86	3.03	3.30
3-Year Constant Maturity	3.39	3.54	3.91
5-Year Constant Maturity	3.71	3.77	4.17
10-Year Constant Maturity	4.22	4.17	4.50

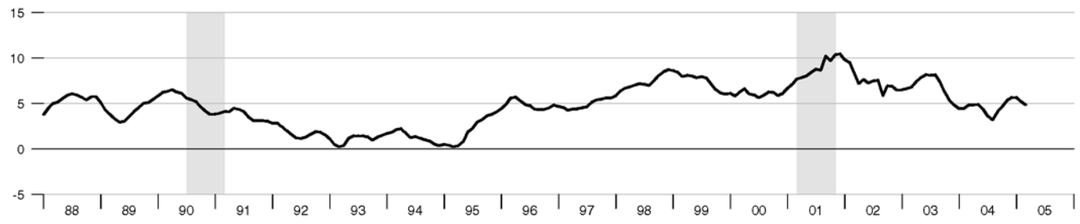
MZM and M1

Percent change from year ago



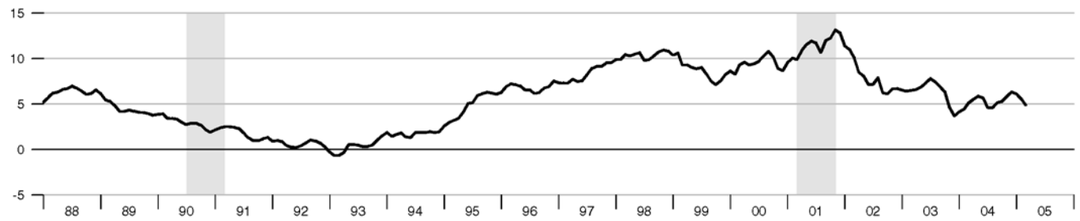
M2

Percent change from year ago



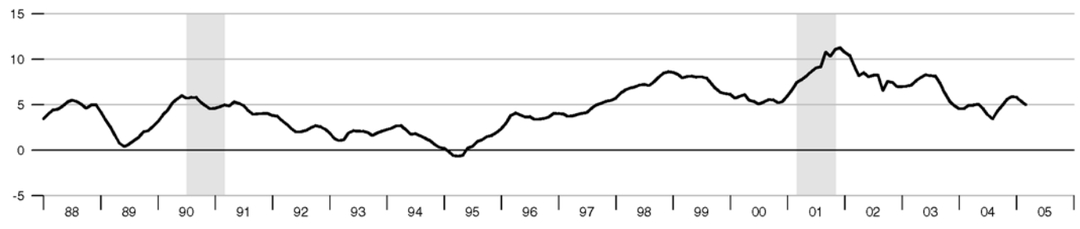
M3

Percent change from year ago



Monetary Services Index - M2

Percent change from year ago



updated through
04/18/05

		Federal Funds	Primary Credit Rate	Prime Rate	3-mo CDs	Treasury Yields 3-mo	Treasury Yields 3-yr	Treasury Yields 10-yr	Corporate Aaa Bonds	S & L Aaa Bonds	Conventional Mortgage
2000		6.24		9.23	6.46	6.00	6.22	6.03	7.62	5.58	8.06
2001		3.89		6.92	3.69	3.47	4.08	5.02	7.08	5.01	6.97
2002		1.67		4.68	1.73	1.63	3.10	4.61	6.49	4.87	6.54
2003		1.13	2.11	4.12	1.15	1.03	2.11	4.02	5.67	4.52	5.82
2004		1.35	2.34	4.34	1.56	1.40	2.78	4.27	5.63	4.50	5.84
2003	1	1.25	2.25	4.25	1.26	1.18	2.07	3.92	6.00	4.60	5.83
	2	1.25	2.23	4.24	1.17	1.06	1.77	3.62	5.31	4.28	5.51
	3	1.02	2.00	4.00	1.07	0.95	2.20	4.23	5.70	4.68	6.01
	4	1.00	2.00	4.00	1.10	0.93	2.38	4.29	5.66	4.52	5.92
2004	1	1.00	2.00	4.00	1.05	0.93	2.17	4.02	5.45	4.26	5.61
	2	1.01	2.00	4.00	1.25	1.10	2.98	4.60	5.93	4.82	6.13
	3	1.43	2.42	4.42	1.70	1.51	2.92	4.30	5.64	4.54	5.89
	4	1.95	2.94	4.94	2.25	2.04	3.05	4.17	5.48	4.39	5.73
2005	1	2.47	3.44	5.44	2.78	2.58	3.61	4.30	5.32	4.23	5.76
2003	Mar	1.25	2.25	4.25	1.23	1.15	1.98	3.81	5.89	4.51	5.75
	Apr	1.26	2.25	4.25	1.24	1.15	2.06	3.96	5.74	4.60	5.81
	May	1.26	2.25	4.25	1.22	1.09	1.75	3.57	5.22	4.16	5.48
	Jun	1.22	2.20	4.22	1.04	0.94	1.51	3.33	4.97	4.07	5.23
	Jul	1.01	2.00	4.00	1.05	0.92	1.93	3.98	5.49	4.59	5.63
	Aug	1.03	2.00	4.00	1.08	0.97	2.44	4.45	5.88	4.82	6.26
	Sep	1.01	2.00	4.00	1.08	0.96	2.23	4.27	5.72	4.63	6.15
	Oct	1.01	2.00	4.00	1.10	0.94	2.26	4.29	5.70	4.64	5.95
	Nov	1.00	2.00	4.00	1.11	0.95	2.45	4.30	5.65	4.50	5.93
	Dec	0.98	2.00	4.00	1.10	0.91	2.44	4.27	5.62	4.41	5.88
2004	Jan	1.00	2.00	4.00	1.06	0.90	2.27	4.15	5.54	4.42	5.74
	Feb	1.01	2.00	4.00	1.05	0.94	2.25	4.08	5.50	4.26	5.64
	Mar	1.00	2.00	4.00	1.05	0.95	2.00	3.83	5.33	4.11	5.45
	Apr	1.00	2.00	4.00	1.08	0.96	2.57	4.35	5.73	4.69	5.83
	May	1.00	2.00	4.00	1.20	1.04	3.10	4.72	6.04	4.93	6.27
	Jun	1.03	2.01	4.01	1.46	1.29	3.26	4.73	6.01	4.85	6.29
	Jul	1.26	2.25	4.25	1.57	1.36	3.05	4.50	5.82	4.71	6.06
	Aug	1.43	2.43	4.43	1.68	1.50	2.88	4.28	5.65	4.52	5.87
	Sep	1.61	2.58	4.58	1.86	1.68	2.83	4.13	5.46	4.40	5.75
	Oct	1.76	2.75	4.75	2.04	1.79	2.85	4.10	5.47	4.38	5.72
	Nov	1.93	2.93	4.93	2.26	2.11	3.09	4.19	5.52	4.45	5.73
	Dec	2.16	3.15	5.15	2.45	2.22	3.21	4.23	5.47	4.35	5.75
2005	Jan	2.28	3.25	5.25	2.61	2.37	3.39	4.22	5.36	4.24	5.71
	Feb	2.50	3.49	5.49	2.77	2.58	3.54	4.17	5.20	4.16	5.63
	Mar	2.63	3.58	5.58	2.97	2.80	3.91	4.50	5.40	4.29	5.93

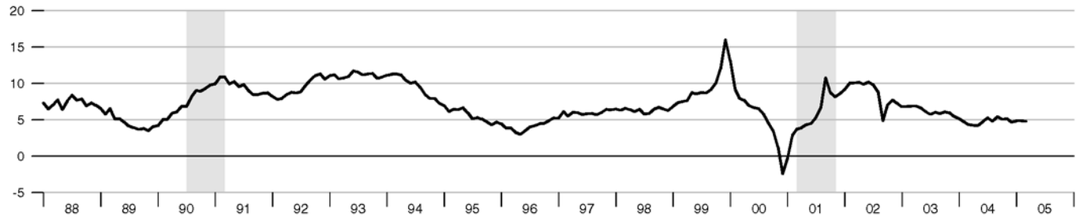
*All values are given as a percent at an annual rate.

		Money Stock				Bank	Adjusted		
		M1	MZM	M2	M3	Credit	Monetary Base	Reserves	MSI M2
	2000	1103.482	4508.932	4801.002	6861.391	5025.431	607.106	84.511	242.147
	2001	1136.938	5221.307	5218.620	7643.640	5345.142	641.167	85.923	263.698
	2002	1192.032	5892.156	5613.534	8257.680	5597.000	697.072	87.914	285.675
	2003	1268.505	6328.391	6003.106	8786.362	6120.006	740.762	92.915	305.983
	2004	1338.512	6575.974	6275.505	9245.466	6591.153	776.518	95.578	320.439
2003	1	1231.793	6193.410	5866.583	8621.050	5955.552	726.828	90.855	299.028
	2	1262.199	6275.435	5974.514	8731.063	6135.745	738.281	91.807	304.467
	3	1286.174	6438.678	6088.880	8899.502	6186.073	744.144	94.732	310.284
	4	1293.854	6406.044	6082.447	8893.835	6202.655	753.796	94.266	310.153
2004	1	1313.176	6443.963	6135.538	9015.656	6424.644	761.243	94.542	313.056
	2	1332.790	6582.490	6255.537	9227.488	6554.143	770.962	96.125	319.294
	3	1344.775	6616.481	6310.761	9326.095	6647.099	782.591	96.310	322.317
	4	1363.307	6660.960	6400.185	9412.625	6738.728	791.277	95.334	327.087
2005	1	1364.846	6663.574	6457.597	9512.784	6933.320	798.072	96.164	329.997
2003	Mar	1238.319	6207.168	5889.425	8644.586	6008.285	732.286	91.291	300.204
	Apr	1244.962	6229.976	5924.733	8675.075	6048.562	736.490	92.281	301.995
	May	1265.697	6272.272	5978.844	8732.167	6152.622	738.676	91.440	304.658
	Jun	1275.938	6324.056	6019.965	8785.946	6206.051	739.676	91.700	306.747
	Jul	1279.812	6420.039	6064.290	8878.770	6194.447	741.389	93.633	309.027
	Aug	1289.179	6449.851	6110.288	8911.334	6179.171	745.394	95.535	311.333
	Sep	1289.532	6446.143	6092.063	8908.401	6184.600	745.648	95.029	310.492
	Oct	1290.433	6422.121	6084.259	8904.944	6160.839	753.833	95.387	310.163
	Nov	1291.913	6403.039	6079.700	8887.332	6197.354	754.786	94.912	310.017
	Dec	1299.217	6392.972	6083.381	8889.229	6249.773	752.769	92.500	310.280
2004	Jan	1297.033	6406.283	6096.437	8947.387	6319.328	756.606	92.731	311.118
	Feb	1314.962	6438.460	6135.755	9011.571	6438.835	763.012	95.437	313.058
	Mar	1327.532	6487.145	6174.423	9088.011	6515.769	764.112	95.458	314.993
	Apr	1327.878	6535.526	6212.369	9154.269	6535.316	767.768	96.609	317.022
	May	1331.757	6600.424	6270.999	9243.835	6543.913	770.029	95.311	320.102
	Jun	1338.736	6611.520	6283.242	9284.359	6583.200	775.088	96.455	320.759
	Jul	1331.351	6598.333	6285.147	9288.370	6602.738	780.276	95.214	321.083
	Aug	1349.213	6611.946	6306.075	9320.768	6634.586	781.339	95.540	322.022
	Sep	1353.760	6639.165	6341.060	9369.147	6703.973	786.158	98.176	323.846
	Oct	1353.809	6638.325	6367.645	9377.558	6705.026	792.055	97.051	325.372
	Nov	1368.804	6662.657	6404.532	9406.945	6743.241	793.690	96.344	327.320
	Dec	1367.308	6681.898	6428.378	9453.372	6767.916	788.085	92.606	328.569
2005	Jan	1357.720	6673.720	6441.861	9493.530	6836.902	793.357	94.614	329.312
	Feb	1365.015	6657.928	6455.681	9512.030	6940.769	800.094	97.335	329.878
	Mar	1371.802	6659.075	6475.249	9532.792	7022.288	800.765	96.544	330.800

*All values are given in billions of dollars.

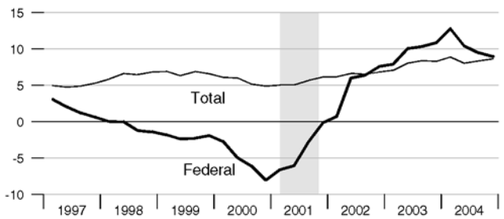
Adjusted Monetary Base

Percent change from year ago



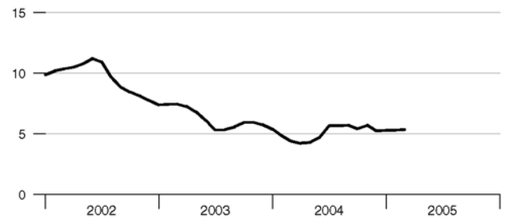
Domestic Nonfinancial Debt

Percent change from year ago



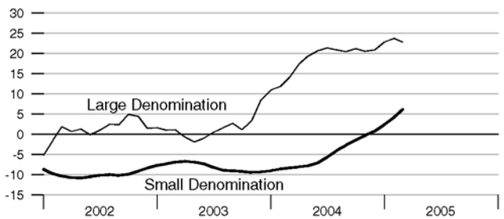
Currency Held by the Nonbank Public

Percent change from year ago



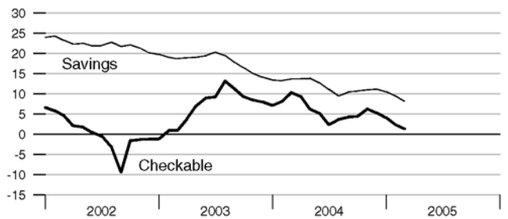
Time Deposits

Percent change from year ago



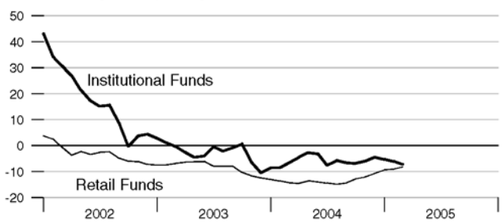
Checkable and Savings Deposits

Percent change from year ago



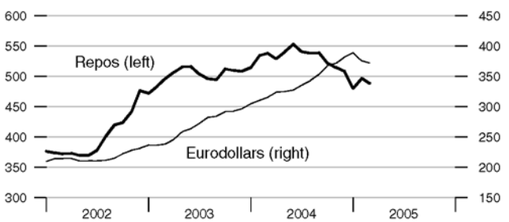
Money Market Mutual Fund Shares

Percent change from year ago



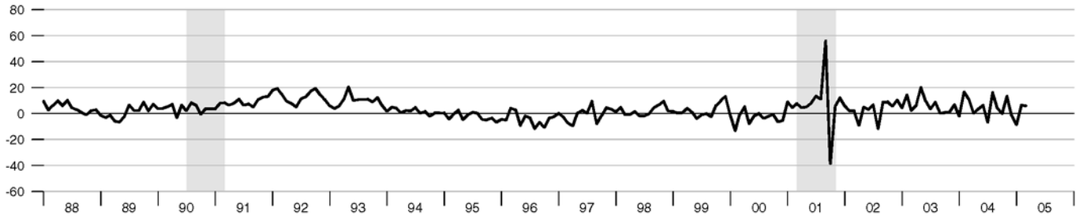
Repurchase Agreements and Eurodollars

Billions of dollars Billions of dollars



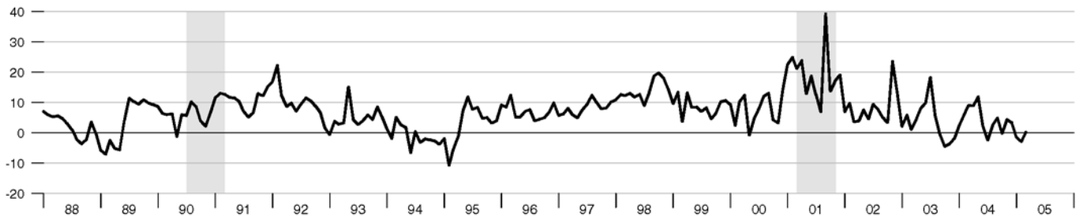
M1

Percent change at an annual rate



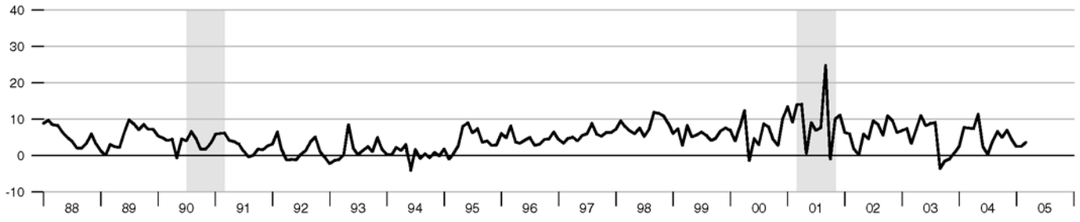
MZM

Percent change at an annual rate



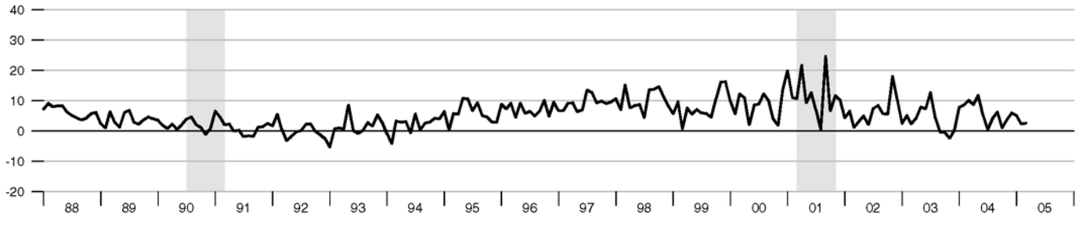
M2

Percent change at an annual rate

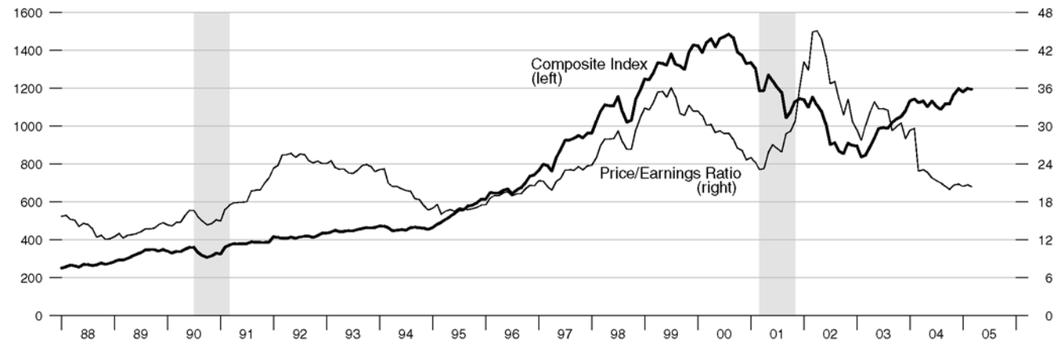


M3

Percent change at an annual rate



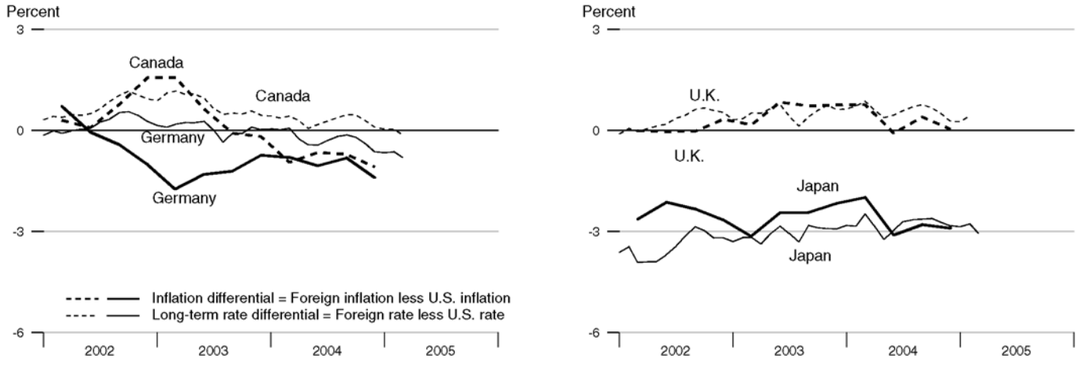
Standard & Poor's 500



Recent Inflation and Long-Term Interest Rates

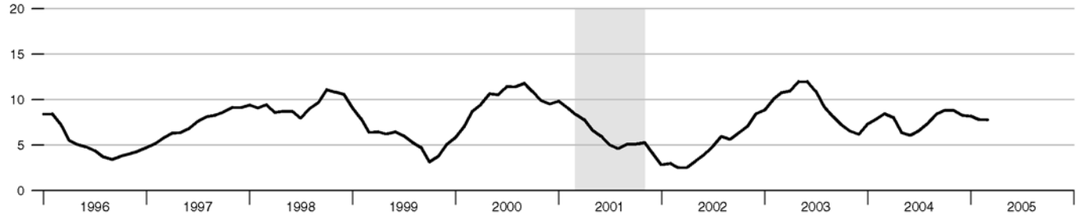
	Consumer Price Inflation Rates (Percent change from year ago)				Long-Term Government Bond Rates (Percent)			
	2004Q1	2004Q2	2004Q3	2004Q4	Dec04	Jan05	Feb05	Mar05
United States	1.82	2.84	2.69	3.37	4.23	4.22	4.17	4.50
Canada	0.87	2.18	1.99	2.29	4.33	4.26	4.20	4.37
France	1.80	2.38	2.28	2.08	3.64	3.58	3.60	.
Germany	1.02	1.79	1.88	1.98	3.60	3.56	3.54	3.70
Italy	2.29	2.33	2.23	1.98	3.79	3.71	3.68	3.84
Japan	-0.17	-0.27	-0.10	0.48	1.40	1.36	1.40	1.45
United Kingdom	2.58	2.75	3.09	3.41	4.50	4.48	4.61	.

Inflation and Long-Term Interest Rate Differentials



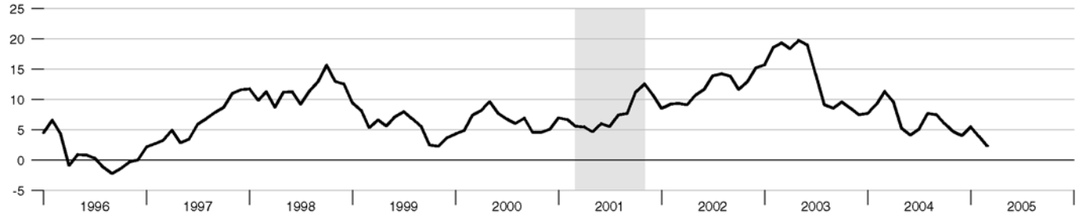
Bank Credit

Percent change from year ago



Investment Securities in Bank Credit at Commercial Banks

Percent change from year ago

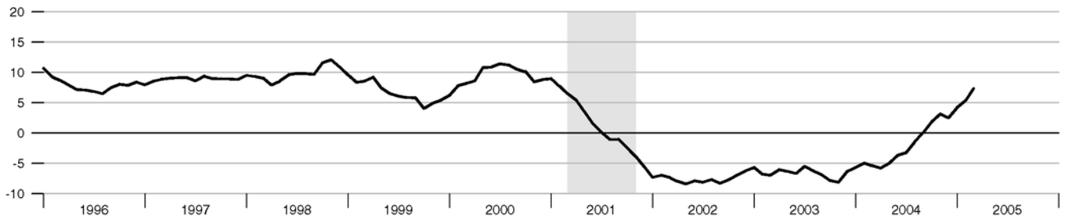


Total Loans and Leases in Bank Credit at Commercial Banks

Percent change from year ago

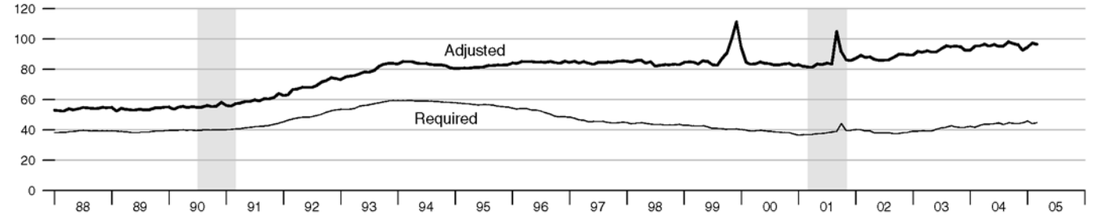
Commercial and Industrial Loans at Commercial Banks

Percent change from year ago



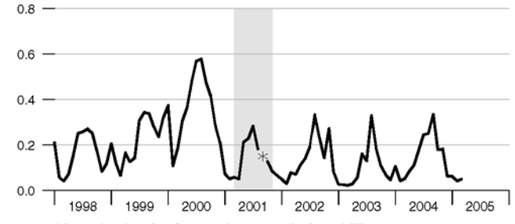
Adjusted and Required Reserves

Billions of dollars



Total Borrowings, nsa

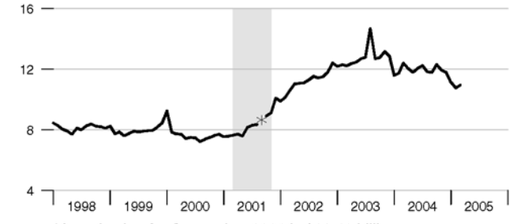
Billions of dollars



*Actual value for September 2001 is $3.4 billion.

Excess Reserves plus RCB Contracts

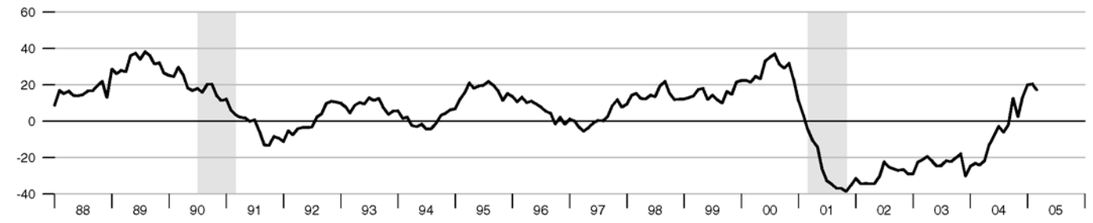
Billions of dollars



*Actual value for September 2001 is $26.43 billion.

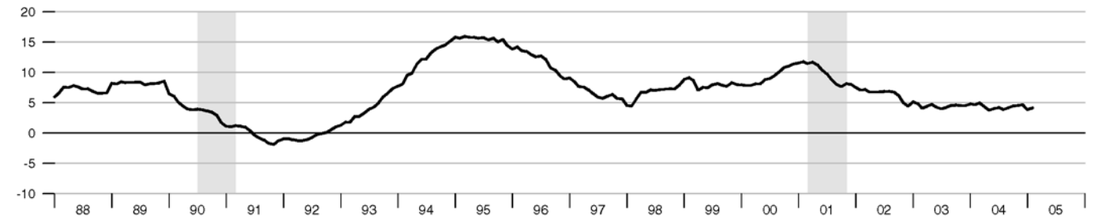
Nonfinancial Commercial Paper

Percent change from year ago

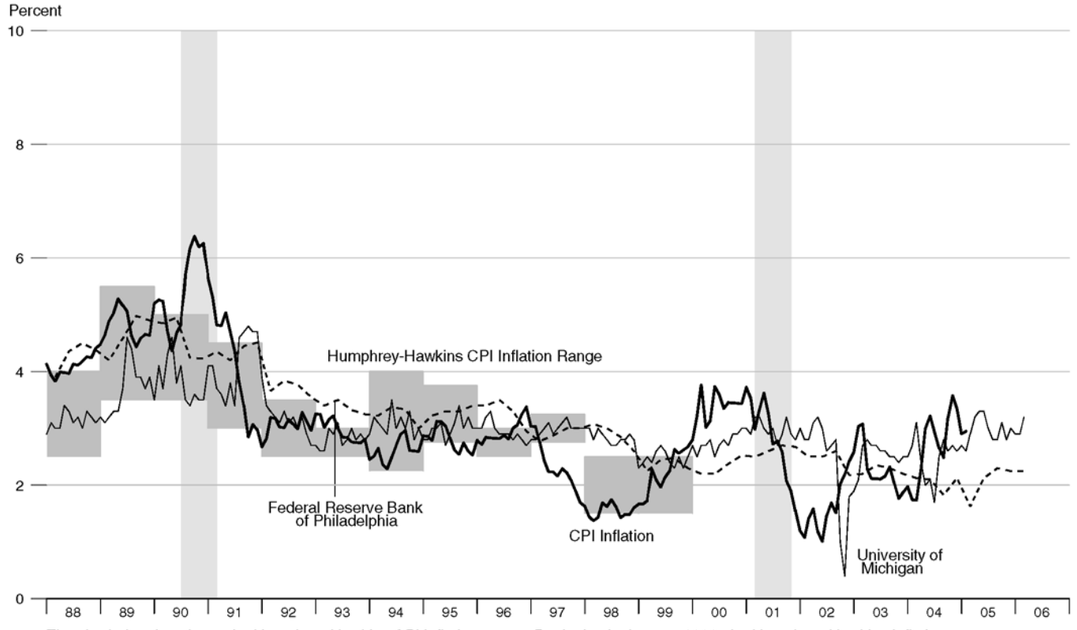


Consumer Credit

Percent change from year ago



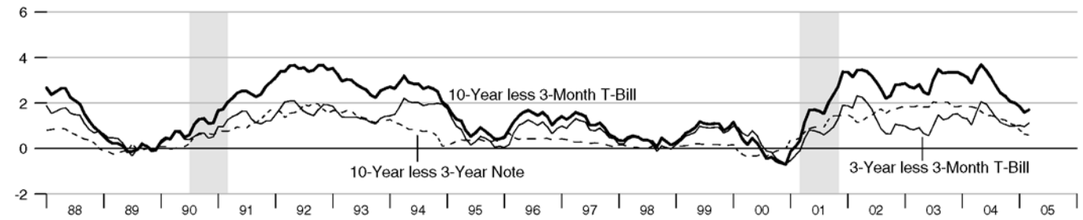
Inflation and Inflation Expectations



The shaded region shows the Humphrey-Hawkins CPI inflation range. Beginning in January 2000, the Humphrey-Hawkins inflation range was reported using the PCE price index and therefore is not shown on this graph. See notes on page 19.

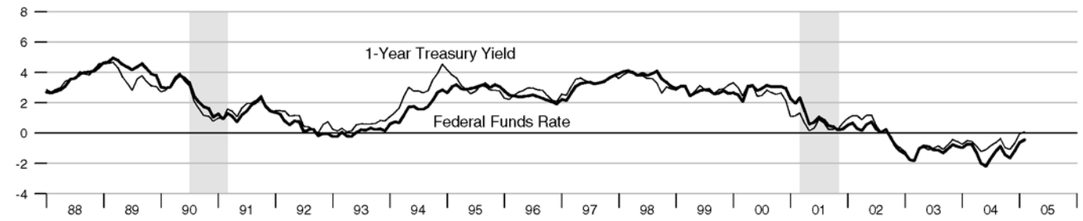
Treasury Security Yield Spreads

Yield to maturity



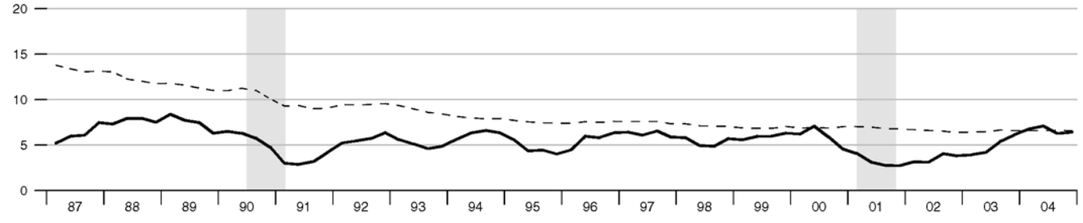
Real Interest Rates

Percent, Real rate = Nominal rate less CPI inflation



Gross Domestic Product

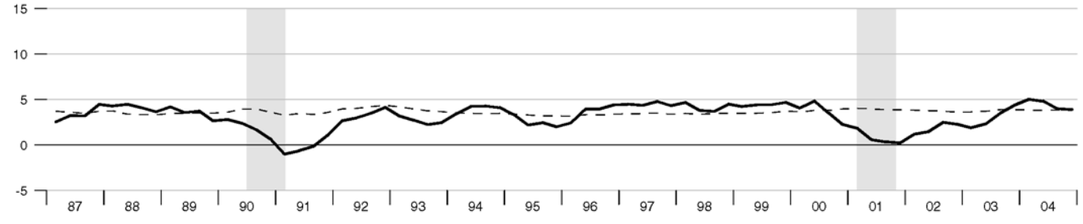
Percent change from year ago



Dashed lines indicate 10-year moving averages.

Real Gross Domestic Product

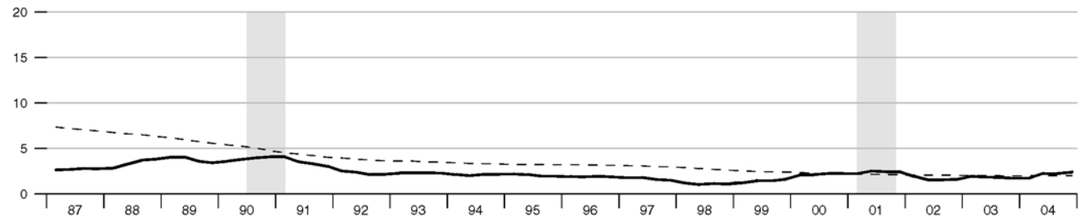
Percent change from year ago



Dashed lines indicate 10-year moving averages.

Gross Domestic Product Price Index

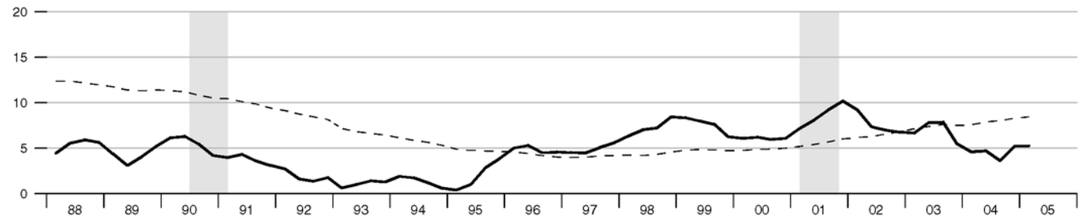
Percent change from year ago



Dashed lines indicate 10-year moving averages.

M2

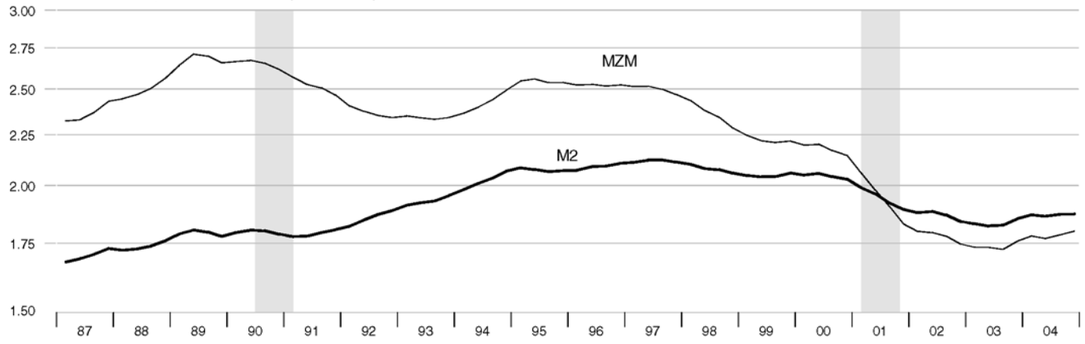
Percent change from year ago



Dashed lines indicate 10-year moving averages.

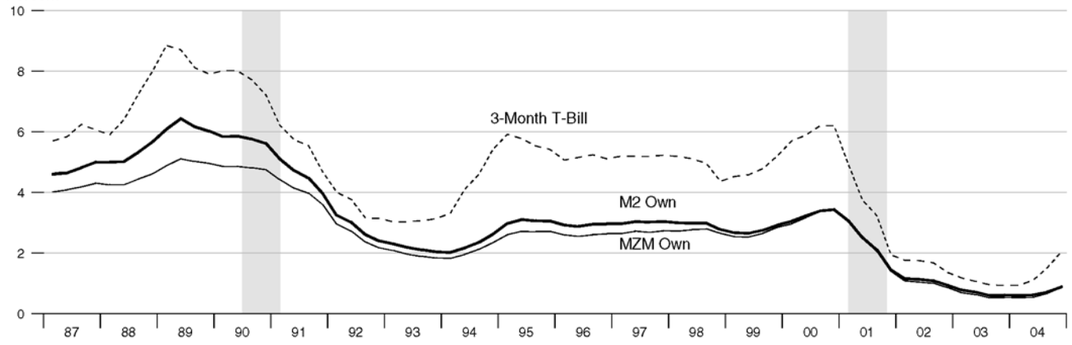
Velocity

Nominal GDP/MZM, Nominal GDP/M2 (Ratio Scale)



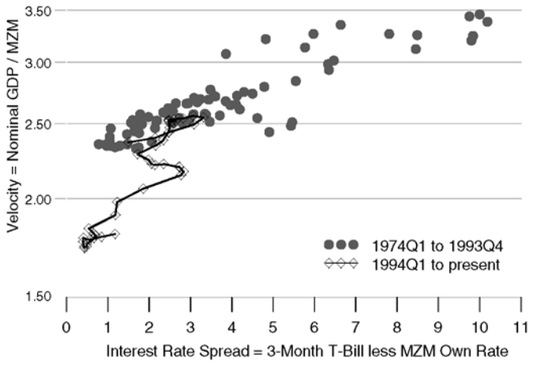
Interest Rates

Percent



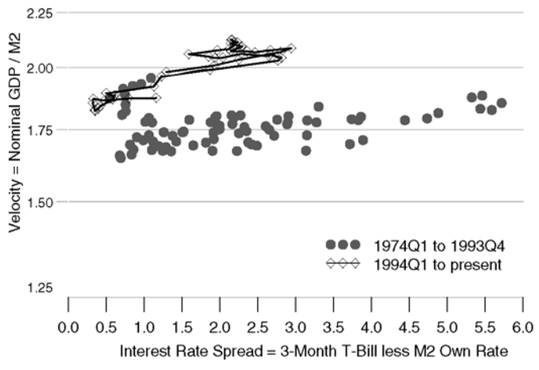
MZM Velocity and Interest Rate Spread

Ratio Scale



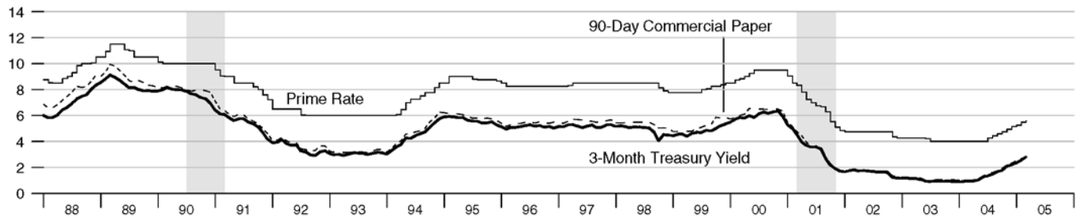
M2 Velocity and Interest Rate Spread

Ratio Scale



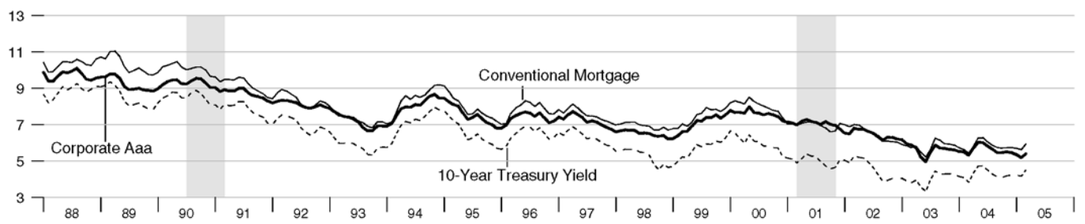
Short-Term Interest Rates

Percent



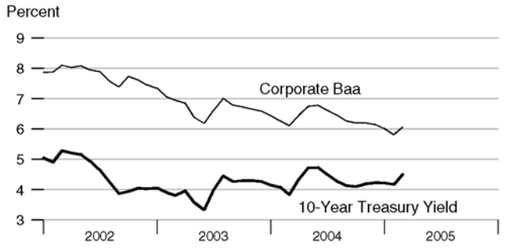
Long-Term Interest Rates

Percent



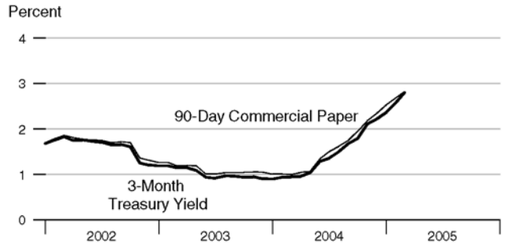
Long-Term Interest Rates

Percent



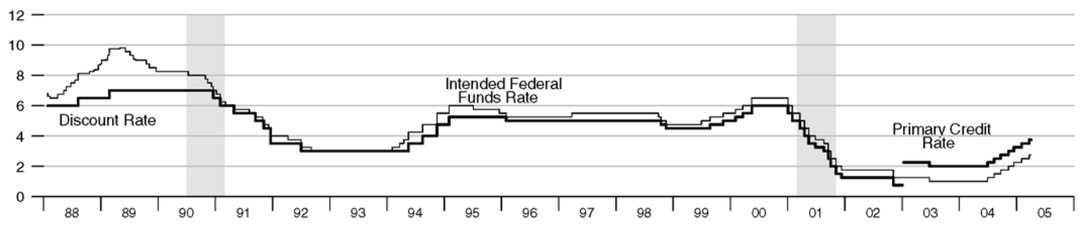
Short-Term Interest Rates

Percent

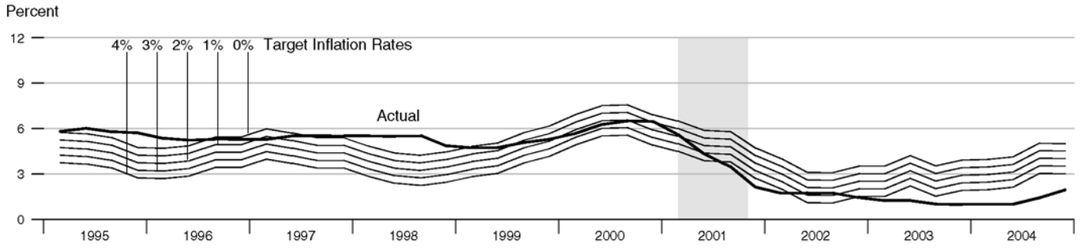


FOMC Intended Federal Funds Rate, Discount Rate, and Primary Credit Rate

Percent



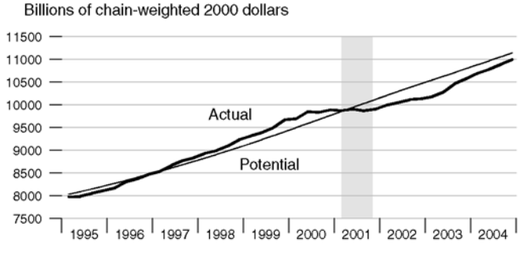
Federal Funds Rate and Inflation Targets



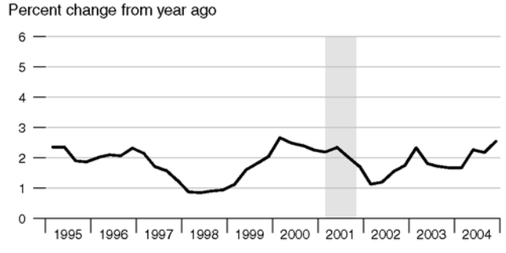
Calculated federal funds rate is based on Taylor's rule. See notes on page 19.

Components of Taylor's Rule

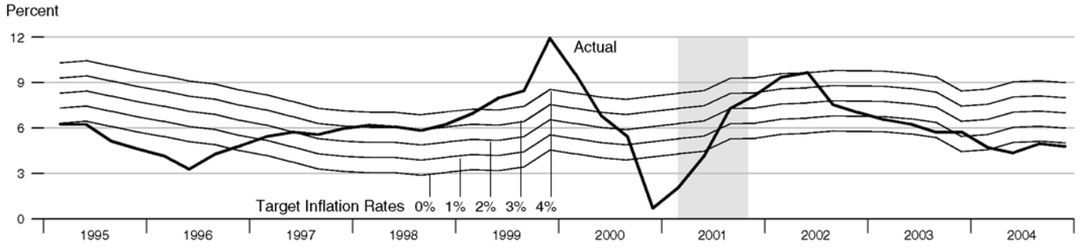
Actual and Potential Real GDP



PCE Inflation



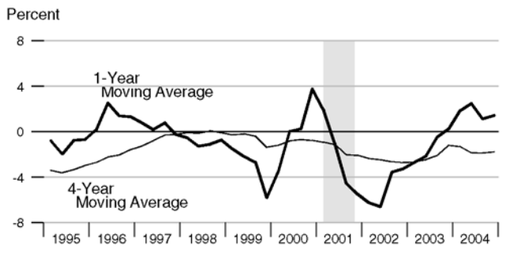
Monetary Base Growth* and Inflation Targets



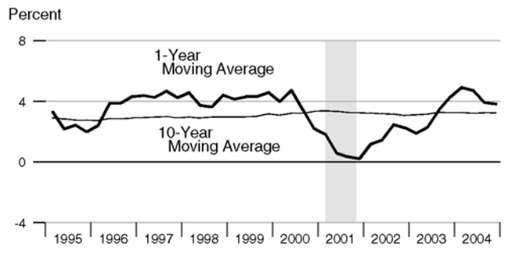
*Modified for the effects of sweeps programs on reserve demand.
Calculated base growth is based on McCallum's rule. Actual base growth is percent change from year ago. See notes on page 19.

Components of McCallum's Rule

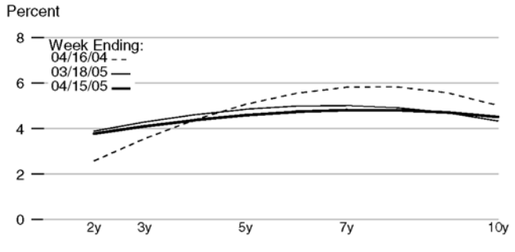
Monetary Base Velocity Growth



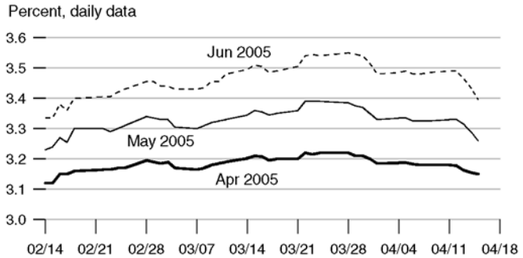
Real Output Growth



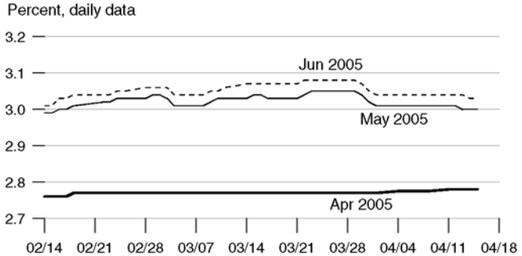
Implied One-Year Forward Rates



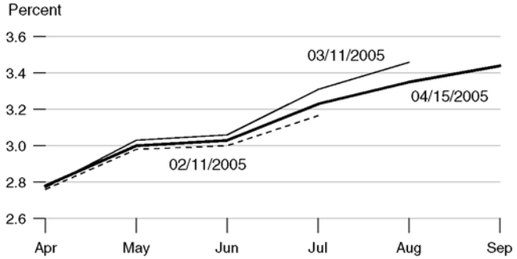
Rates on 3-Month Eurodollar Futures



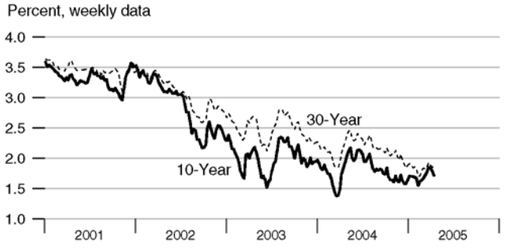
Rates on Selected Federal Funds Futures Contracts



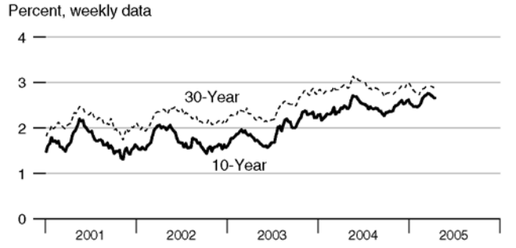
Rates on Federal Funds Futures on Selected Dates



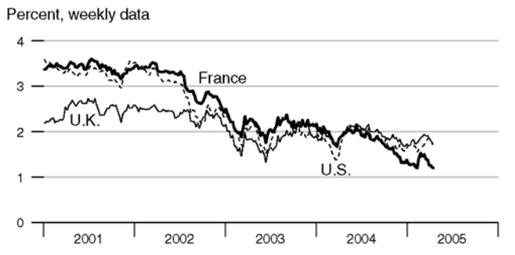
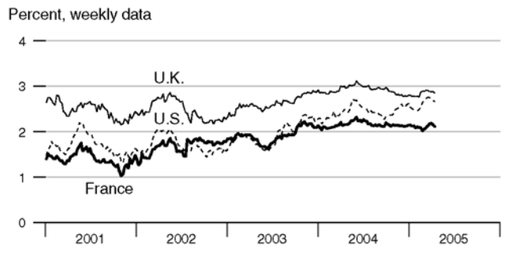
Inflation-Indexed Treasury Securities



Inflation-Indexed Treasury Yield Spreads



Inflation-Indexed 10-Year Government Notes



Inflation-Indexed 10-Year Government Yield Spreads