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 $m = 1,..., 10$ years to maturity are obtained by linear interpolation between 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 and Yield Spreads** are those plotted on page 3. **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 7/25/2015, the current U.K. note has a maturity date of 8/16/2013, and the current U.S. note has a maturity date of 7/15/2017. **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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Taylor, John B. (1993). "Discretion versus Policy Rules in Practice," *Carnegie-Rochester Conference Series on Public Policy*, vol. 39, pp. 195-214.

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

Monetary Trends

May 2008

New Monetary Policy Tools?

Since the summer of 2007, financial market turmoil has increased the demand for riskless, liquid assets and dried up liquidity in key markets. Market-determined short-term interest rates, normally close to the federal funds rate, have risen sharply. The bid-ask interest rate spread—the difference between what lenders will charge and buyers will pay—has widened. In short, financial institutions have found it increasingly difficult to borrow money against collateral.

The Federal Reserve has intervened repeatedly to ease liquidity pressures in financial markets. In a sequence of developments beginning in December 2007, the Fed introduced three new policy instruments: the Term Auction Facility (TAF), the Term Securities Lending Facility (TSLF), and the Primary Dealer Credit Facility (PDCF).

The TAF is a credit facility that allows depository institutions (e.g., commercial banks) to borrow from the Fed for 28 days against a wide variety of collateral.[1] For the period of the loan, this action increases the Fed's assets and liabilities by the same amount. (See the examples in black in the table's second column.) These actions, though, would have the secondary effect of increasing bank reserves and ultimately also the monetary base.[2] In general, the Fed conducts open market operations (OMOs) to counteract unwanted increases (or decreases) in the monetary base; in this case, it has sold Treasury securities to exactly offset this increase. (See the examples in green in the table's second column.)

The TSLF permits primary dealers to borrow Treasury securities against other securities as collateral for 28 days. The range of securities that can be used as collateral is wider than for the TAF. For example, it includes some mortgage-backed securities. The TSLF is a "bond-for-bond" form of lending and it affects only the composition of the Fed's assets without increasing total reserves.

The PDCF is an overnight loan facility that provides funding for up to 120 days to primary dealers in exchange for collateral. The PDCF accepts a broader range of securities than the TSLF and is a "cash-for-bond" form of lending. As mentioned, to prevent PDCF operations from increasing the monetary base, the Fed offsets the increase with a sale of Treasury securities.

In short, the differences in these instruments are types of acceptable collateral, duration of the loan, which financial institutions have access, and the cost to the borrower. All these actions distribute liquidity to the segments of the financial markets facing shortages; but, because they merely change the composition of the Fed's assets, they do not increase the monetary base.

On the other hand, this re-allocation of assets may reduce banks' demand for excess reserves, and thereby encourage banks to lend more; this would effectively increase the broader monetary aggregates that include deposits without changing the monetary base. Therefore, these instruments may indeed be tools of monetary policy.

—Riccardo DiCecio and Charles S. Gascon

[1] For more details, see David C. Wheelock, "Another Window: The Term Auction Facility," Federal Reserve Bank of St. Louis *Monetary Trends*, March 2008.

[2] See page 19 in this publication for definitions of monetary aggregates.

A Hypothetical Federal Reserve Balance Sheet

	OMOs*	TAF	TSLF	PDCF
Treasury securities	+1 bil	**–1 bil**	–1 bil	**–1 bil**
Repos (net of reverse repos)				
TAF credit		+1 bil		
Discount window credit				
PDCF				+1 bil
Other assets			+1 bil	
Total assets	+1 bil	0	0	0
Reserves	+1 bil	+1 bil		+1 bil
Currency		**–1 bil**		**–1 bil**
Total liabilities	+1 bil	0	0	0

NOTE: *The Fed uses open market operations as its standard tool for implementing monetary policy: The first column shows the Fed purchasing $1 billion in Treasuries and thus increasing the monetary base by the same amount.

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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On March 23, 2006, the Board of Governors of the Federal Reserve System ceased the publication of the M3 monetary aggregate. It also ceased publishing the following components: large-denomination time deposits, RPs, and eurodollars.

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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** and **Real Treasury Yield Curve** show constant maturity yields calculated by the U.S. Treasury for securities 5, 7, 10, and 20 years to maturity. **Inflation-Indexed Treasury Yield Spreads** are a measure of inflation compensation at those horizons, and it is simply the nominal constant maturity yield less the real constant maturity yield. 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 year-over-year 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

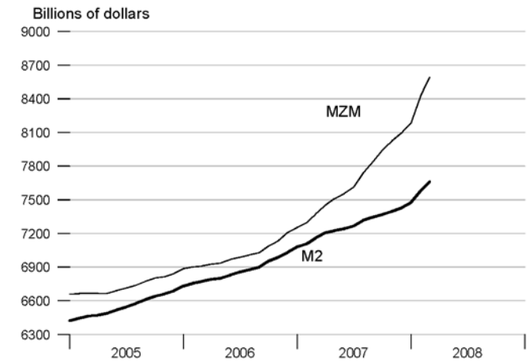
$$\Delta MB_t^* = \pi^* + (\text{10-year moving average growth of real GDP}) - (\text{4-year moving average of base velocity growth})$$

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.

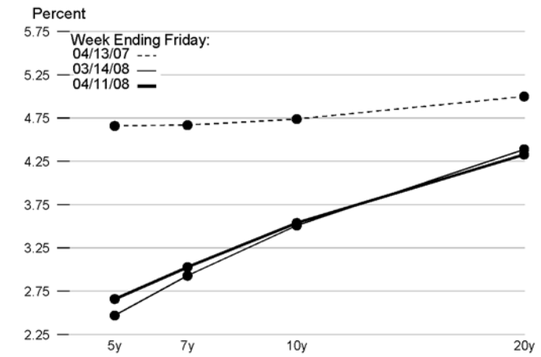
		M1	MZM	M2	M3*
Percent change at an annual rate					
2003		6.46	7.41	6.99	6.40
2004		5.57	3.97	4.72	5.09
2005		2.03	2.23	4.45	5.97
2006		0.19	4.07	4.79	4.95
2007		-0.37	9.18	5.90	
2006	1	1.98	4.69	5.45	
	2	-0.55	2.60	3.22	
	3	-3.68	3.69	4.11	
	4	0.36	7.71	6.57	
2007	1	0.31	9.26	7.14	
	2	0.86	10.81	6.13	
	3	-1.35	11.99	4.72	
	4	-0.23	14.96	4.79	
2008	1	0.85	18.96	9.45	
2006	Mar	3.70	1.32	2.69	
	Apr	-4.22	2.83	3.34	
	May	3.41	1.91	1.85	
	Jun	-7.64	5.43	5.12	
	Jul	-4.12	3.19	4.48	
	Aug	-0.49	3.73	3.63	
	Sep	-8.01	3.28	4.08	
	Oct	6.13	10.21	9.13	
	Nov	2.70	7.76	6.19	
	Dec	-3.91	12.47	7.22	
2007	Jan	4.93	7.76	8.52	
	Feb	-4.42	7.09	4.60	
	Mar	1.98	12.58	8.51	
	Apr	6.89	12.57	7.94	
	May	-2.10	9.49	3.37	
	Jun	-8.17	7.52	2.76	
	Jul	2.24	8.80	3.96	
	Aug	1.30	20.15	8.53	
	Sep	-2.95	15.52	4.49	
	Oct	2.71	15.50	3.78	
	Nov	-3.01	12.62	4.61	
	Dec	0.48	10.27	4.86	
2008	Jan	0.65	13.35	7.97	
	Feb	2.83	35.61	16.75	
	Mar	2.07	23.33	12.56	

*See table of contents for changes to the series.

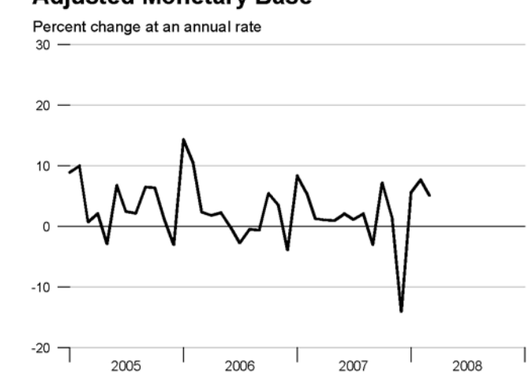
M2 and MZM



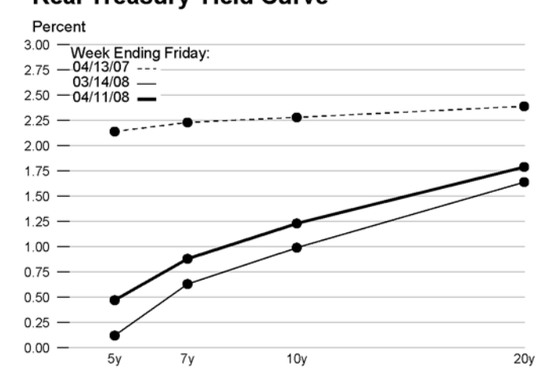
Treasury Yield Curve



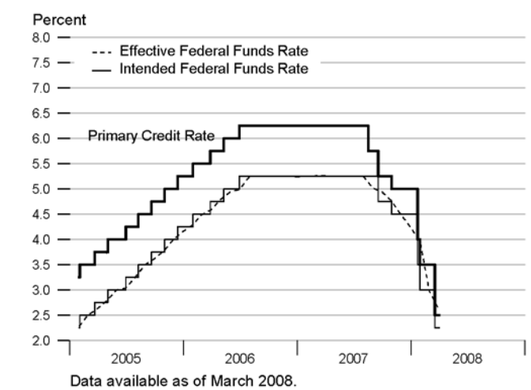
Adjusted Monetary Base



Real Treasury Yield Curve

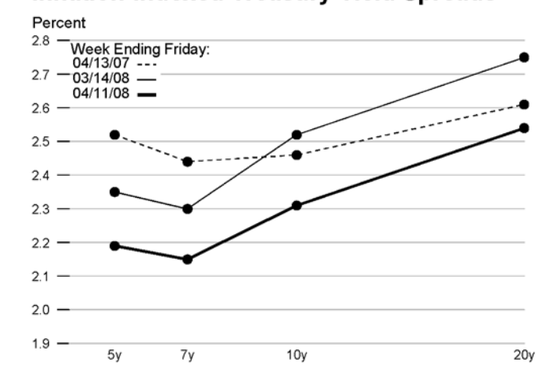


Reserve Market Rates



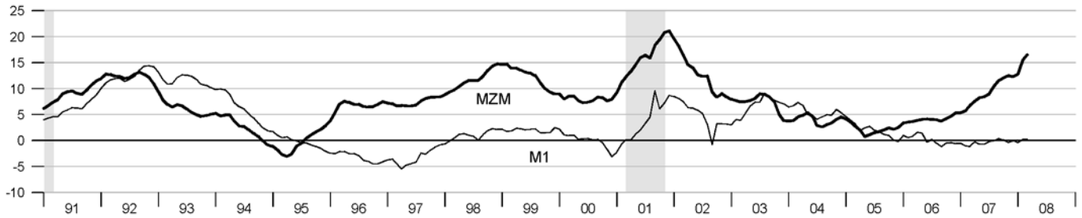
Data available as of March 2008.

Inflation-Indexed Treasury Yield Spreads



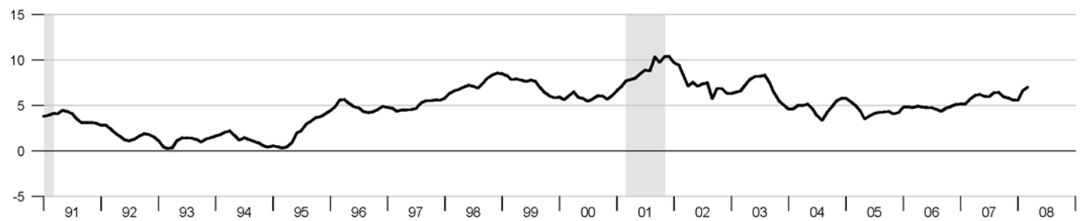
MZM and M1

Percent change from year ago



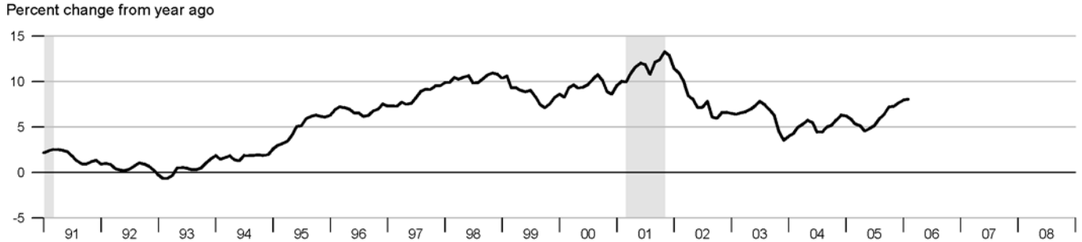
M2

Percent change from year ago



M3*

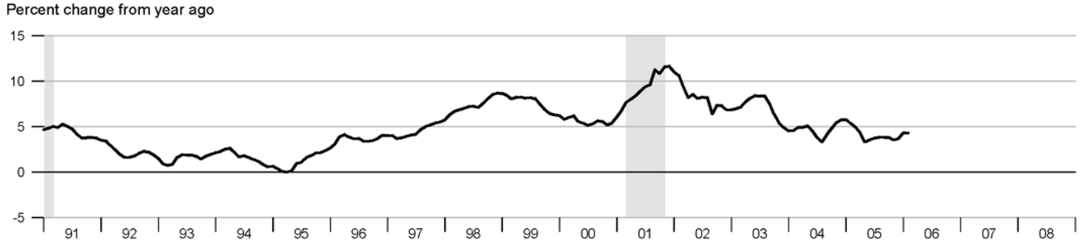
Percent change from year ago



*See table of contents for changes to the series.

Monetary Services Index - M2**

Percent change from year ago



**We will not update the MSI series until we revise the code to accomodate the discontinuation of M3.

		Federal Funds	Primary Credit Rate	Prime Rate	3-mo CDs	Treasury Yields 3-mo	3-yr	10-yr	Corporate Aaa Bonds	Municipal Aaa Bonds	Conventional Mortgage
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
2005		3.21	4.19	6.19	3.51	3.21	3.93	4.29	5.23	4.28	5.86
2006		4.96	5.96	7.96	5.15	4.85	4.77	4.79	5.59	4.15	6.41
2007		5.02	5.86	8.05	5.27	4.47	4.34	4.63	5.56	4.13	6.34
2006	1	4.46	5.43	7.43	4.72	4.50	4.58	4.57	5.39	4.29	6.24
	2	4.91	5.90	7.90	5.18	4.83	4.98	5.07	5.89	4.36	6.60
	3	5.25	6.25	8.25	5.39	5.03	4.87	4.90	5.68	4.13	6.56
	4	5.25	6.25	8.25	5.32	5.03	4.65	4.63	5.39	3.82	6.24
2007	1	5.26	6.25	8.25	5.31	5.12	4.68	4.68	5.36	3.91	6.22
	2	5.25	6.25	8.25	5.32	4.87	4.76	4.85	5.58	4.13	6.37
	3	5.07	5.93	8.18	5.42	4.42	4.41	4.73	5.75	4.27	6.55
	4	4.50	5.02	7.52	5.02	3.47	3.50	4.26	5.53	4.24	6.23
2008	1	3.18	3.67	6.21	3.23	2.09	2.17	3.66	5.46		5.88
2006	Mar	4.59	5.53	7.53	4.88	4.63	4.74	4.72	5.53	4.29	6.32
	Apr	4.79	5.75	7.75	5.03	4.72	4.89	4.99	5.84	4.36	6.51
	May	4.94	5.93	7.93	5.15	4.84	4.97	5.11	5.95	4.38	6.60
	Jun	4.99	6.02	8.02	5.35	4.92	5.09	5.11	5.89	4.35	6.68
	Jul	5.24	6.25	8.25	5.46	5.08	5.07	5.09	5.85	4.41	6.76
	Aug	5.25	6.25	8.25	5.38	5.09	4.85	4.88	5.68	4.10	6.52
	Sep	5.25	6.25	8.25	5.34	4.93	4.69	4.72	5.51	3.87	6.40
	Oct	5.25	6.25	8.25	5.33	5.05	4.72	4.73	5.51	3.91	6.36
	Nov	5.25	6.25	8.25	5.32	5.07	4.64	4.60	5.33	3.81	6.24
	Dec	5.24	6.25	8.25	5.32	4.97	4.58	4.56	5.32	3.76	6.14
2007	Jan	5.25	6.25	8.25	5.32	5.11	4.79	4.76	5.40	3.89	6.22
	Feb	5.26	6.25	8.25	5.31	5.16	4.75	4.72	5.39	3.95	6.29
	Mar	5.26	6.25	8.25	5.30	5.08	4.51	4.56	5.30	3.88	6.16
	Apr	5.25	6.25	8.25	5.31	5.01	4.60	4.69	5.47	3.99	6.18
	May	5.25	6.25	8.25	5.31	4.87	4.69	4.75	5.47	4.04	6.26
	Jun	5.25	6.25	8.25	5.33	4.74	5.00	5.10	5.79	4.36	6.66
	Jul	5.26	6.25	8.25	5.32	4.96	4.82	5.00	5.73	4.24	6.70
	Aug	5.02	6.01	8.25	5.49	4.32	4.34	4.67	5.79	4.30	6.57
	Sep	4.94	5.53	8.03	5.46	3.99	4.06	4.52	5.74	4.26	6.38
	Oct	4.76	5.24	7.74	5.08	4.00	4.01	4.53	5.66	4.20	6.38
	Nov	4.49	5.00	7.50	4.97	3.35	3.35	4.15	5.44	4.26	6.21
	Dec	4.24	4.83	7.33	5.02	3.07	3.13	4.10	5.49	4.25	6.10
2008	Jan	3.94	4.48	6.98	3.84	2.82	2.51	3.74	5.33	4.13	5.76
	Feb	2.98	3.50	6.00	3.06	2.17	2.19	3.74	5.53	4.42	5.92
	Mar	2.61	3.04	5.66	2.79	1.28	1.80	3.51	5.51		5.97

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

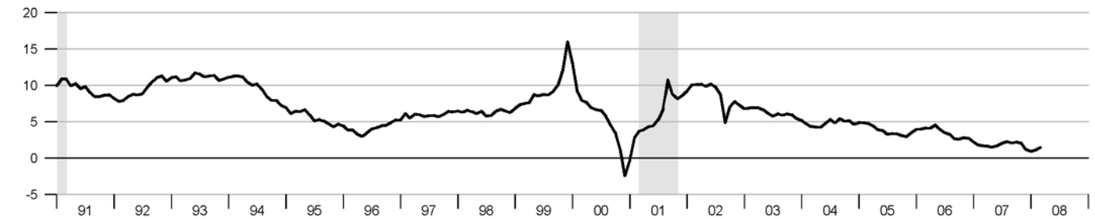
		Money Stock				Bank	Adjusted		
		M1	MZM	M2	M3*	Credit	Monetary Base	Reserves	MSI M2**
	2003	1273.483	6327.287	5983.784	8787.321	6119.399	740.938	93.325	315.192
	2004	1344.422	6578.703	6266.365	9234.718	6603.699	776.768	96.129	329.873
	2005	1371.780	6725.613	6545.085	9786.477	7248.859	806.627	96.558	343.539
	2006	1374.386	6999.334	6858.660	10270.74	7961.382	835.013	94.887	
	2007	1369.240	7642.088	7263.033		8749.390	850.600	94.221	
2006	1	1381.849	6899.983	6754.643		7632.631	830.533	96.494	
	2	1379.956	6944.762	6809.058		7885.014	836.330	95.026	
	3	1367.253	7008.767	6879.015		8036.772	834.533	94.752	
	4	1368.486	7143.822	6991.922		8291.111	838.655	93.275	
2007	1	1369.533	7309.163	7116.741		8441.889	846.370	94.184	
	2	1372.487	7506.636	7225.787		8571.707	849.946	93.585	
	3	1367.856	7731.690	7311.064		8830.602	852.275	95.434	
	4	1367.082	8020.864	7398.541		9153.360	853.811	93.681	
2008	1	1369.971	8401.104	7573.345		9378.467	856.316	96.253	
2006	Mar	1385.142	6910.684	6773.551		7703.601	834.035	95.826	
	Apr	1380.275	6926.955	6792.390		7809.244	835.307	95.578	
	May	1384.201	6937.962	6802.872		7918.352	836.887	94.200	
	Jun	1375.391	6969.370	6831.913		7927.446	836.797	95.299	
	Jul	1370.673	6987.919	6857.402		7985.009	834.900	94.811	
	Aug	1370.114	7009.620	6878.140		8052.876	834.570	94.649	
	Sep	1360.973	7028.763	6901.504		8072.431	834.130	94.796	
	Oct	1367.925	7088.562	6954.006		8229.125	837.900	93.971	
	Nov	1371.000	7134.390	6989.866		8281.471	840.382	94.764	
	Dec	1366.533	7208.513	7031.894		8362.736	837.684	91.091	
2007	Jan	1372.152	7255.101	7081.835		8405.949	843.515	94.206	
	Feb	1367.098	7297.940	7108.978		8469.648	847.350	94.518	
	Mar	1369.349	7374.448	7159.410		8450.070	848.244	93.829	
	Apr	1377.216	7451.674	7206.758		8515.704	848.994	93.636	
	May	1374.805	7510.575	7227.001		8573.931	849.681	92.838	
	Jun	1365.441	7557.659	7243.601		8625.486	851.164	94.281	
	Jul	1367.993	7613.110	7267.487		8702.605	851.985	94.730	
	Aug	1369.473	7740.934	7319.168		8836.789	853.486	96.694	
	Sep	1366.103	7841.026	7346.537		8952.413	851.353	94.877	
	Oct	1369.193	7942.290	7369.681		9055.350	856.425	93.489	
	Nov	1365.753	8025.804	7397.978		9185.950	857.523	95.763	
	Dec	1366.299	8094.499	7427.963		9218.779	847.485	91.792	
2008	Jan	1367.035	8184.565	7477.315		9285.817	851.448	95.123	
	Feb	1370.257	8427.444	7581.693		9350.729	856.918	96.249	
	Mar	1372.622	8591.302	7661.026		9498.856	860.583	97.388	

Note: All values are given in billions of dollars. *See table of contents for changes to the series.

**We will not update the MSI series until we revise the code to accommodate the discontinuation of M3.

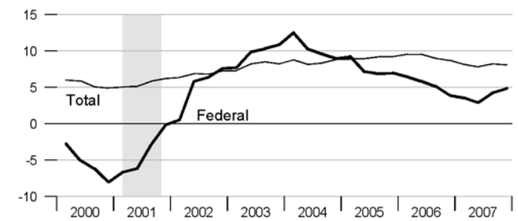
Adjusted Monetary Base

Percent change from year ago



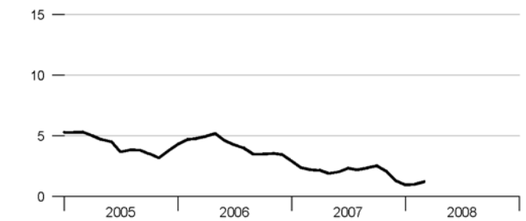
Domestic Nonfinancial Debt

Percent change from year ago



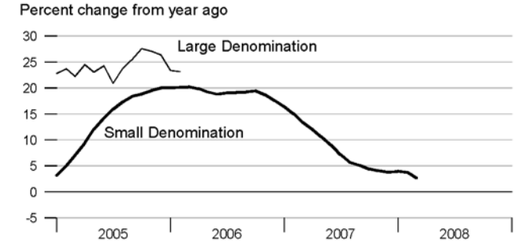
Currency Held by the Nonbank Public

Percent change from year ago



Time Deposits*

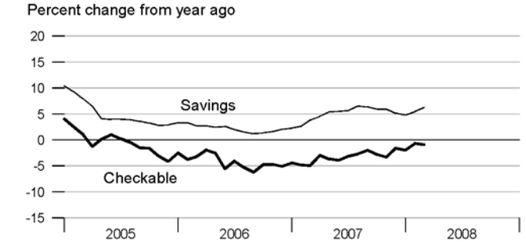
Percent change from year ago



*See table of contents for changes to the series.

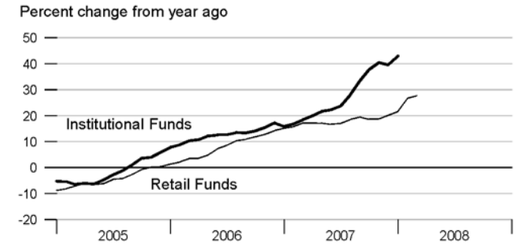
Checkable and Savings Deposits

Percent change from year ago



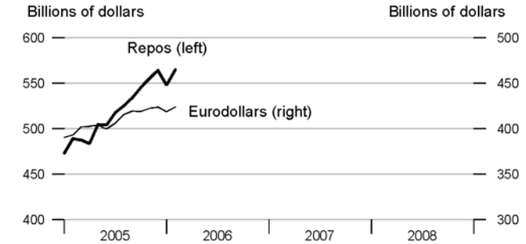
Money Market Mutual Fund Shares

Percent change from year ago



Repurchase Agreements and Eurodollars*

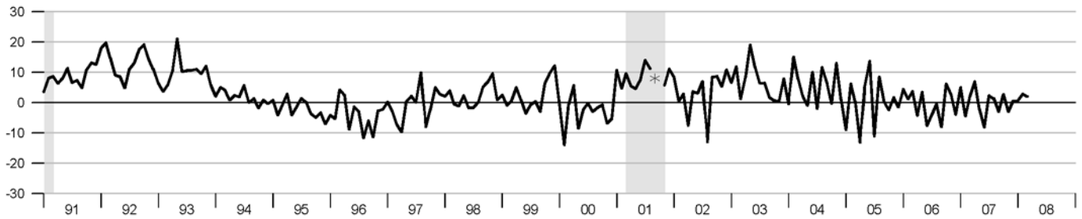
Billions of dollars | Billions of dollars



*See table of contents for changes to these series.

M1

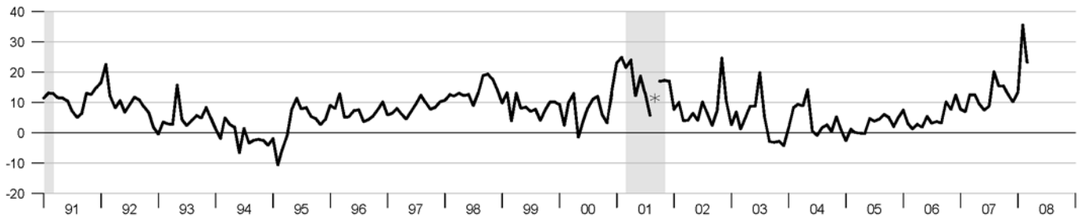
Percent change at an annual rate



*Actual values for September and October 2001 are 55.87 and -38.35 percent rate, respectively.

MZM

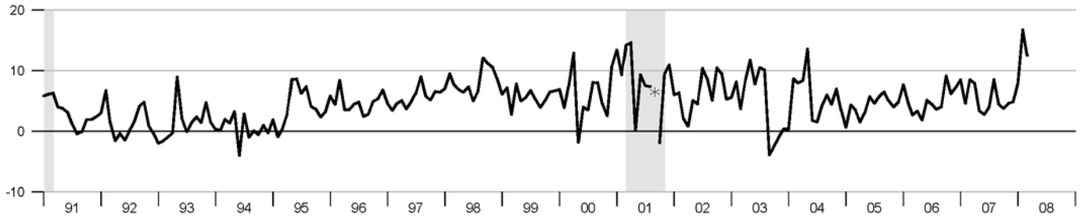
Percent change at an annual rate



*Actual value for September 2001 is 39.41 percent rate.

M2

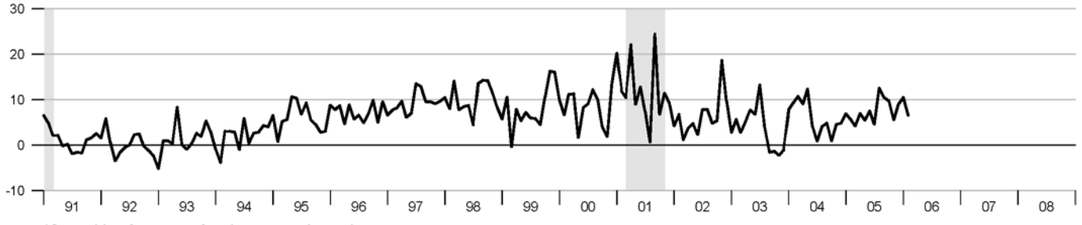
Percent change at an annual rate



*Actual value for September 2001 is 24.90 percent rate.

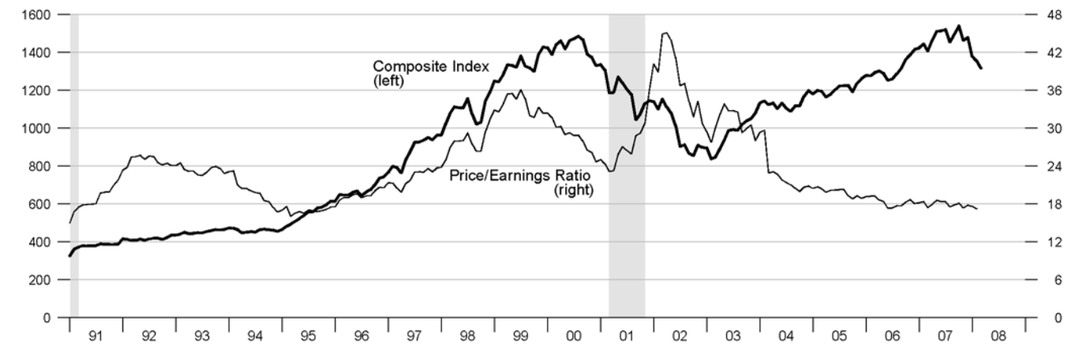
M3*

Percent change at an annual rate



*See table of contents for changes to the series.

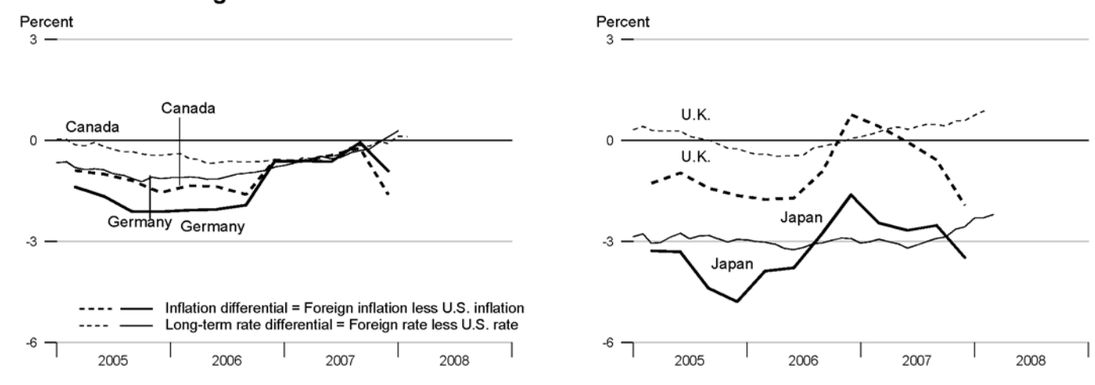
Standard & Poor's 500



Recent Inflation and Long-Term Interest Rates

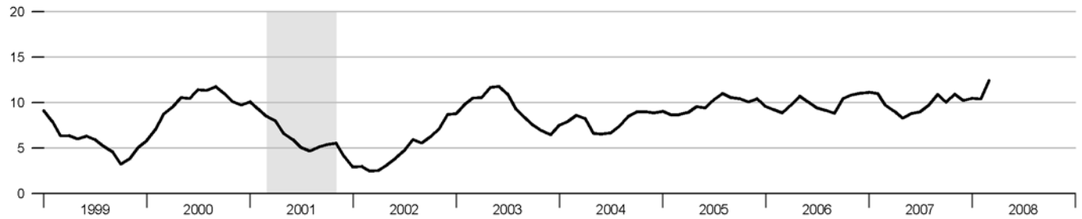
	Consumer Price Inflation Rates (Percent change from year ago)				Long-Term Government Bond Rates (Percent)			
	2007Q1	2007Q2	2007Q3	2007Q4	Dec07	Jan08	Feb08	Mar08
United States	2.42	2.63	2.36	4.01	4.10	3.74	3.74	3.51
Canada	1.81	2.19	2.13	2.41	4.01	3.87	3.85	.
France	1.16	1.18	1.27	2.34	4.35	4.15	.	.
Germany	1.81	2.00	2.30	3.11	4.21	4.03	.	.
Italy	1.73	1.59	1.64	2.36	4.54	4.40	4.35	.
Japan	-0.03	-0.03	-0.16	0.53	1.54	1.44	1.45	1.31
United Kingdom	2.84	2.58	1.78	2.09	4.69	4.49	4.62	.

Inflation and Long-Term Interest Rate Differentials



Bank Credit

Percent change from year ago

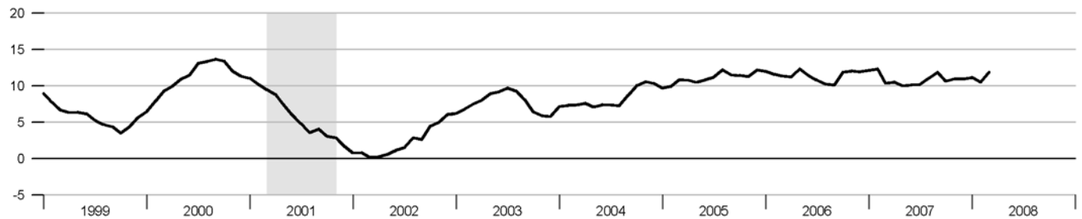


Investment Securities in Bank Credit at Commercial Banks

Percent change from year ago

Total Loans and Leases in Bank Credit at Commercial Banks

Percent change from year ago

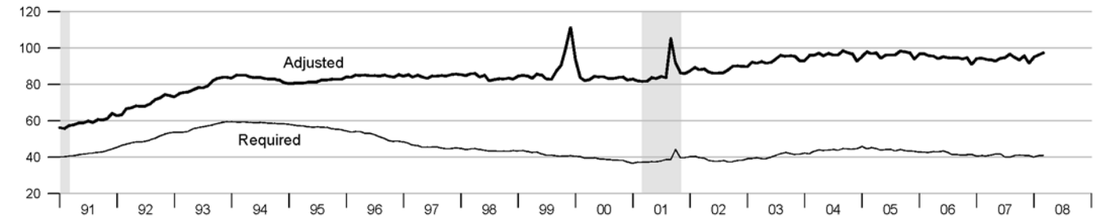


Commercial and Industrial Loans at Commercial Banks

Percent change from year ago

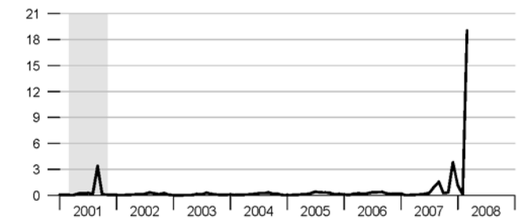
Adjusted and Required Reserves

Billions of dollars



Total Borrowings, nsa

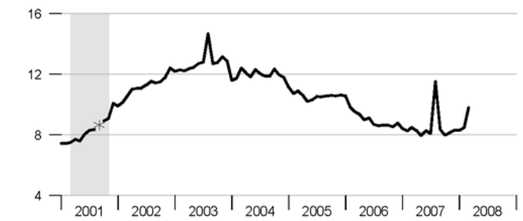
Billions of dollars



* Total borrowings include loans to depository institutions for primary, secondary, seasonal credit, primary dealer credit facility, and other credit extensions, but exclude term auction credit.

Excess Reserves plus RCB Contracts

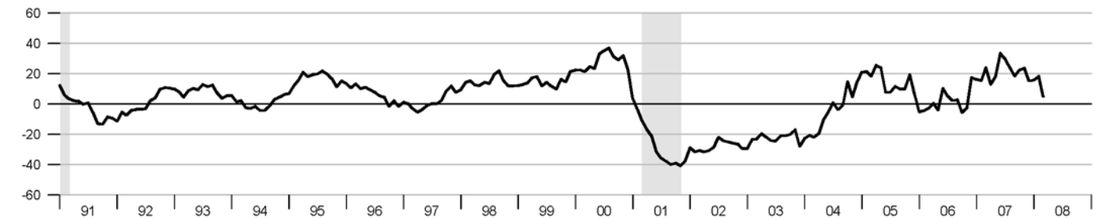
Billions of dollars



*Actual value for September 2001 is $26.43 billion.

Nonfinancial Commercial Paper

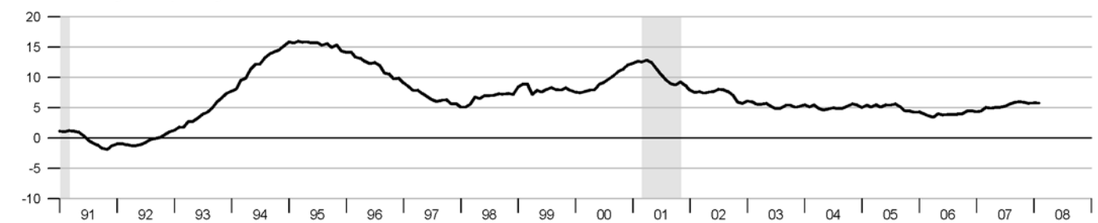
Percent change from year ago



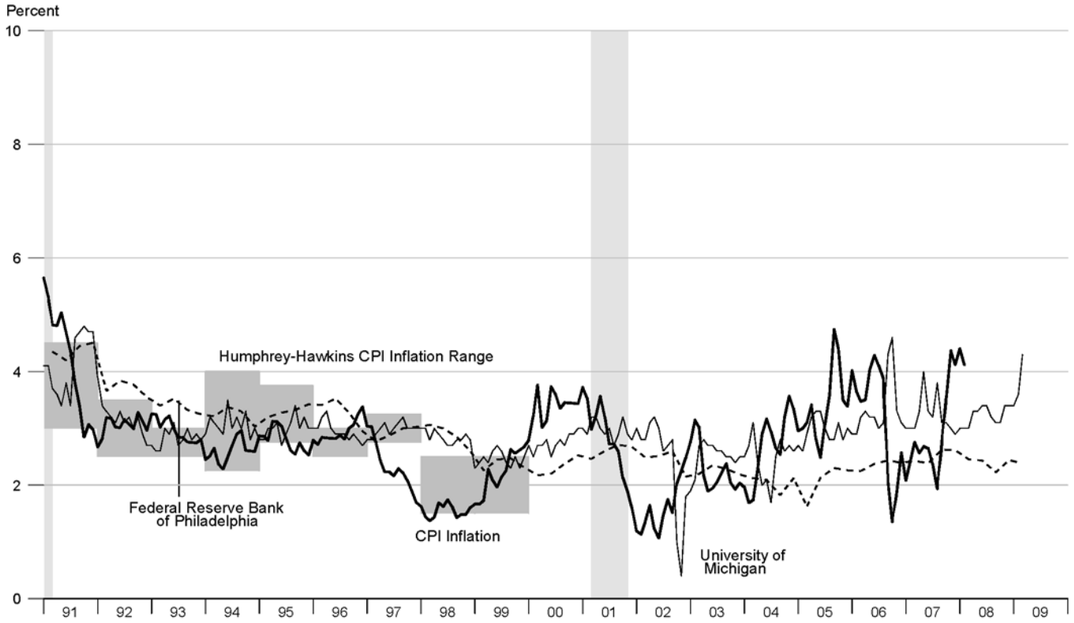
As of April 10, 2006, the Federal Reserve Board made major changes to its commercial paper calculations. For more information, please refer to http://www.federalreserve.gov/releases/cp/about.htm.

Consumer Credit

Percent change from year ago



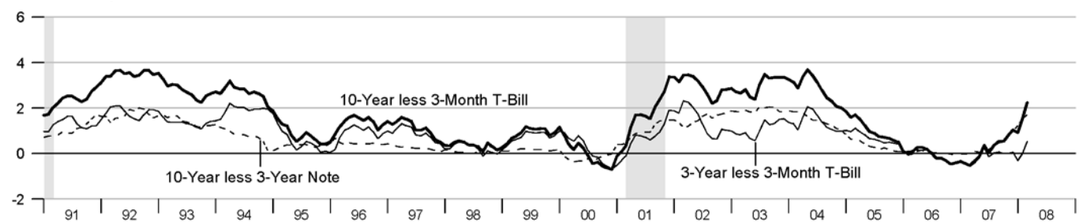
Inflation and 1-Year-Ahead Inflation Expectations



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.

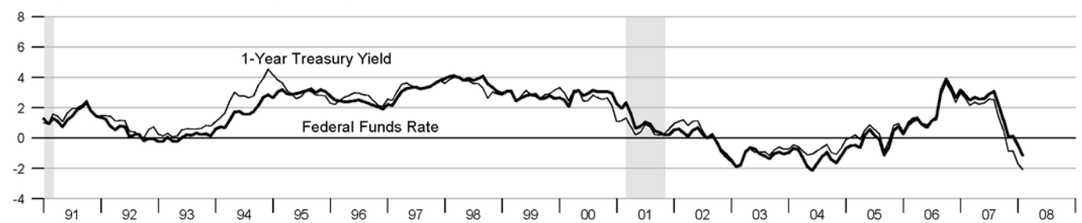
Treasury Security Yield Spreads

Yield to maturity



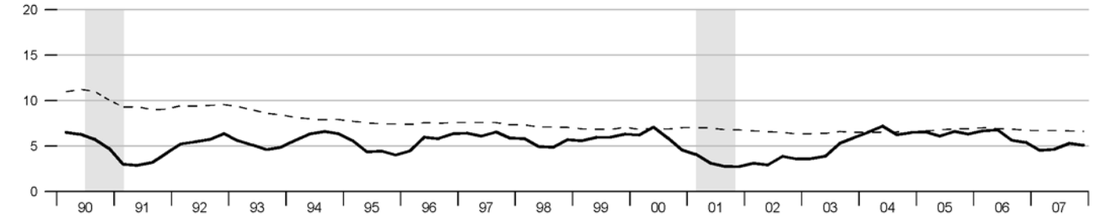
Real Interest Rates

Percent, Real rate = Nominal rate less year-over-year CPI inflation



Gross Domestic Product

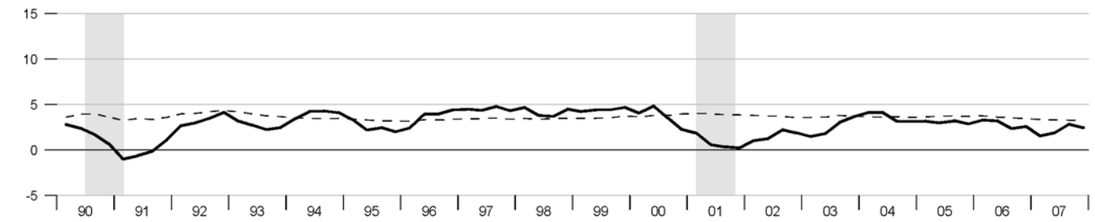
Percent change from year ago



Dashed lines indicate 10-year moving averages.

Real Gross Domestic Product

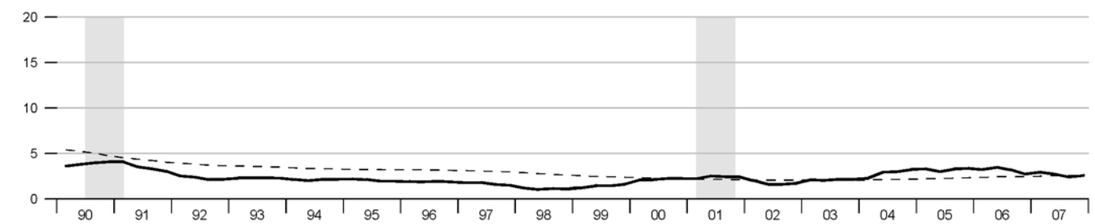
Percent change from year ago



Dashed lines indicate 10-year moving averages.

Gross Domestic Product Price Index

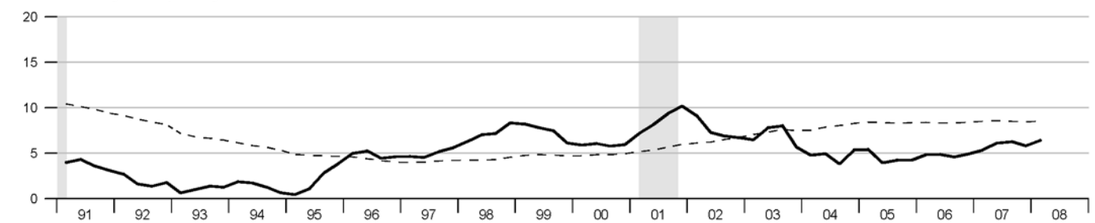
Percent change from year ago



Dashed lines indicate 10-year moving averages.

M2

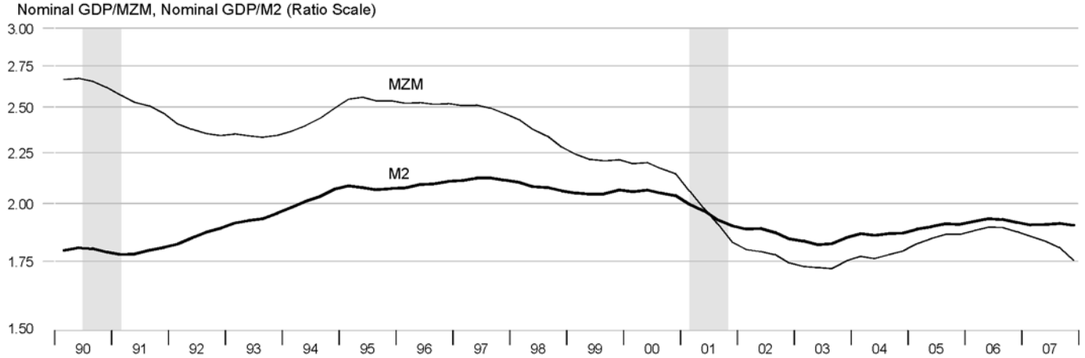
Percent change from year ago



Dashed lines indicate 10-year moving averages.

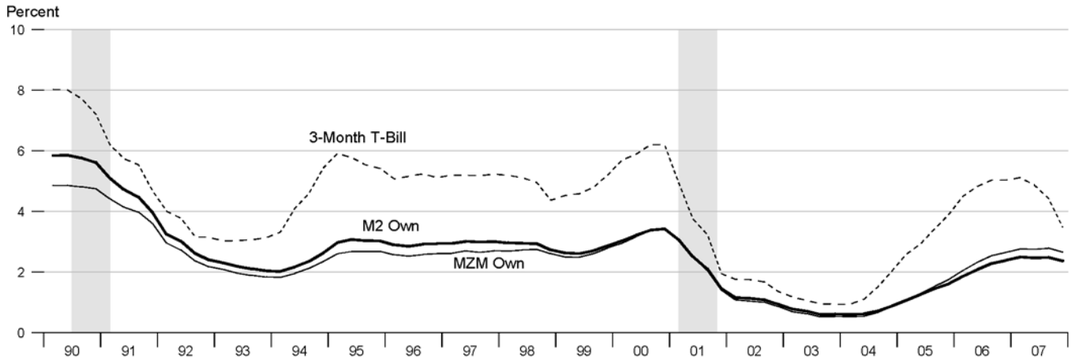
Velocity

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



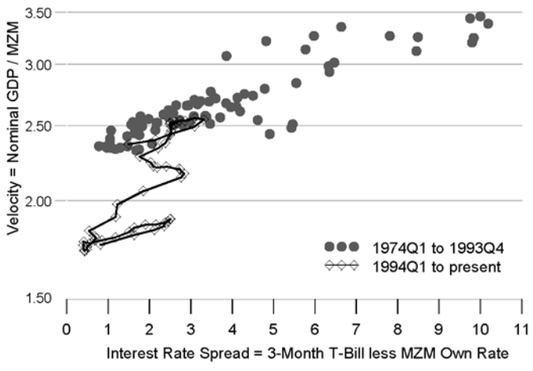
Interest Rates

Percent



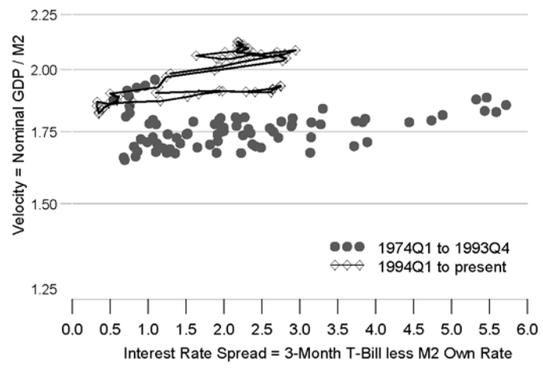
MZM Velocity and Interest Rate Spread

Ratio Scale



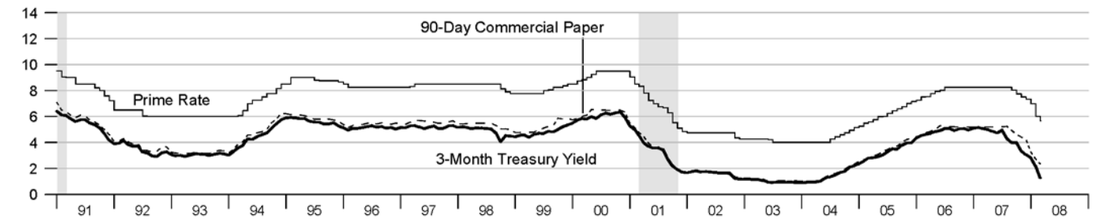
M2 Velocity and Interest Rate Spread

Ratio Scale



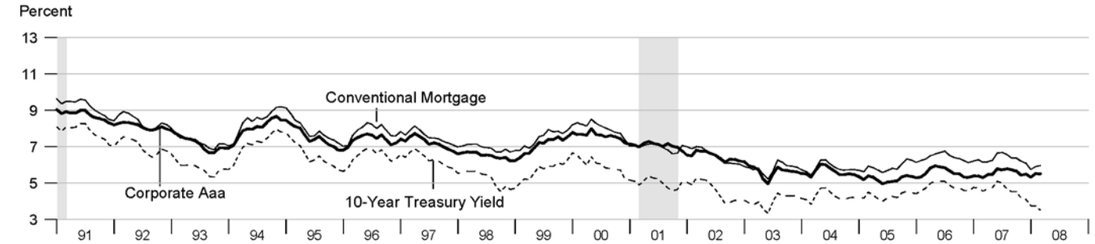
Short-Term Interest Rates

Percent



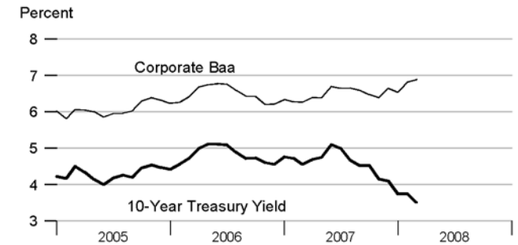
Long-Term Interest Rates

Percent



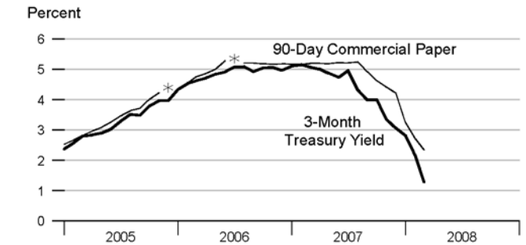
Long-Term Interest Rates

Percent



Short-Term Interest Rates

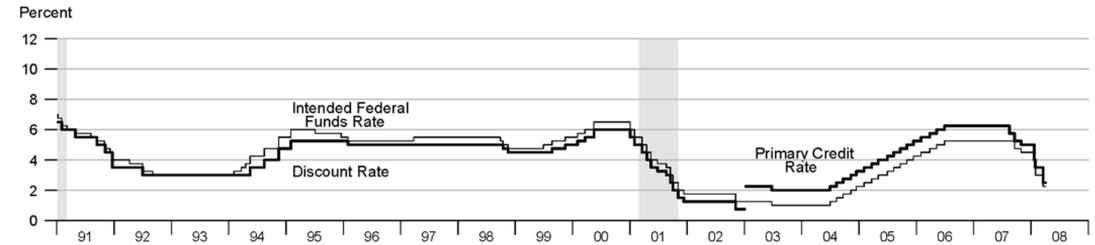
Percent



*90-Day Commercial Paper data are not available for December 2005, January 2006, and July 2006.

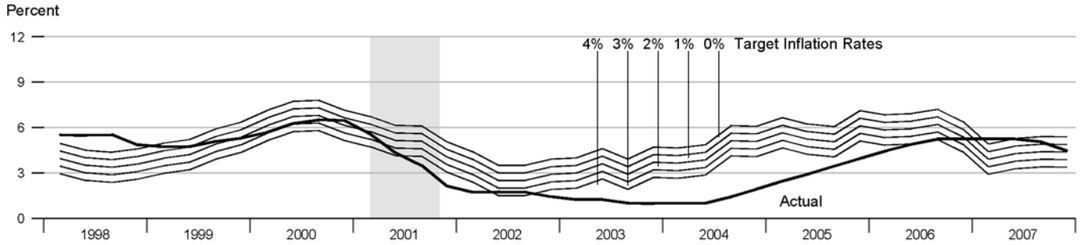
FOMC Intended Federal Funds Rate, Discount Rate, and Primary Credit Rate

Percent



Data available as of March 2008.

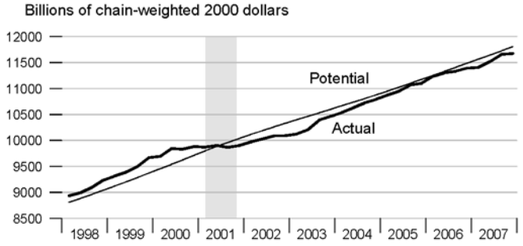
Federal Funds Rate and Inflation Targets



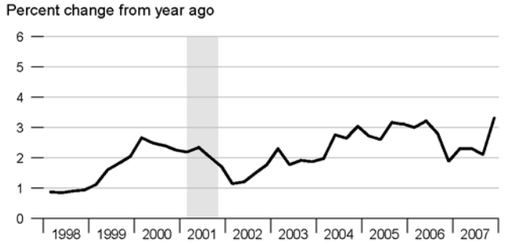
Calculated federal funds rate is based on Taylor's rule. See notes on page 19.

Components of Taylor's Rule

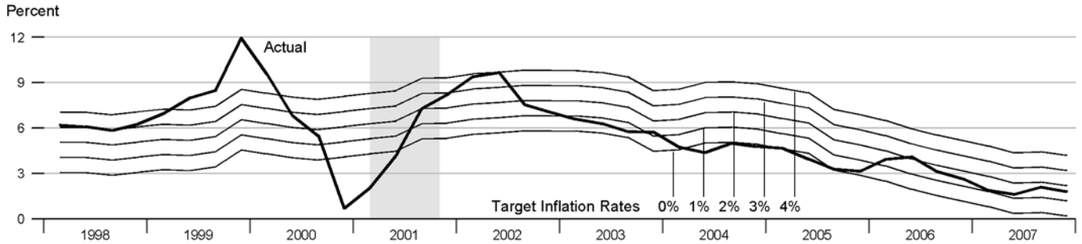
Actual and Potential Real GDP



PCE Inflation



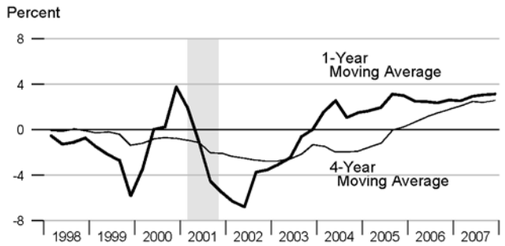
Monetary Base Growth* and Inflation Targets



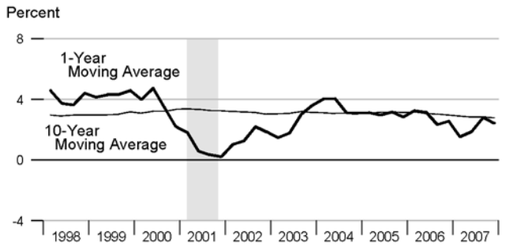
*Modified for the effects of sweeps programs on reserve demand.
Calculated base growth is based on McCallum's rule. Actual base growth is percent change from year ago. See notes on page 19.

Components of McCallum's Rule

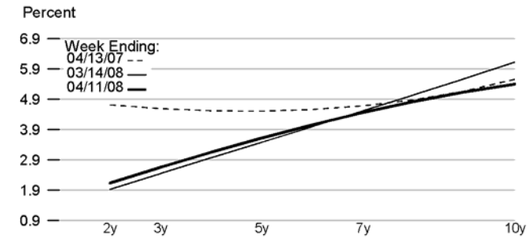
Monetary Base Velocity Growth



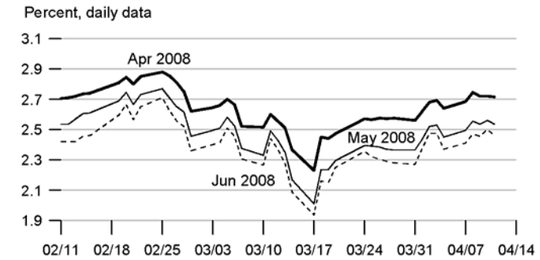
Real Output Growth



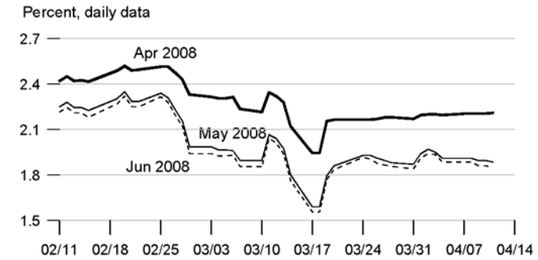
Implied One-Year Forward Rates



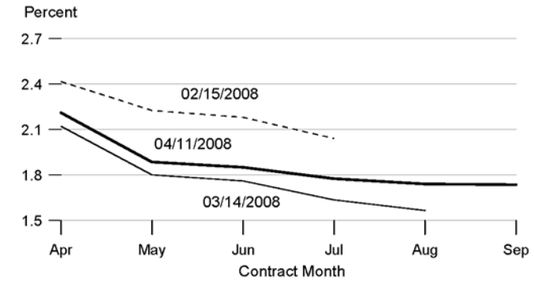
Rates on 3-Month Eurodollar Futures



Rates on Selected Federal Funds Futures Contracts

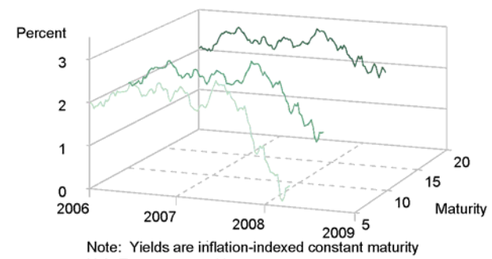


Rates on Federal Funds Futures on Selected Dates



Inflation-Indexed Treasury Securities

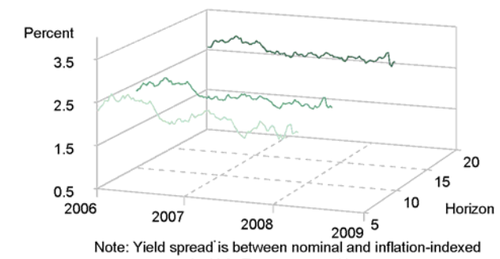
Weekly data



Note: Yields are inflation-indexed constant maturity U.S. Treasury securities

Inflation-Indexed Treasury Yield Spreads

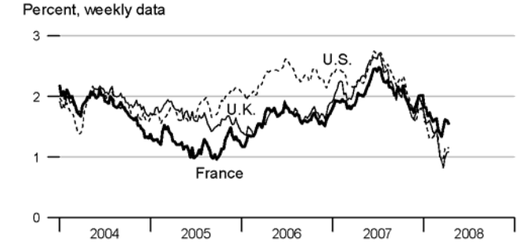
Weekly data

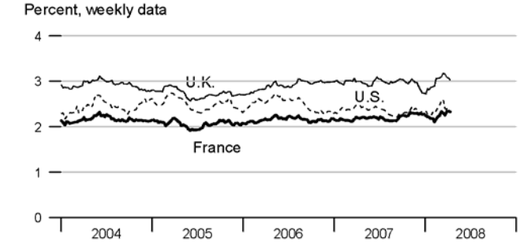


Note: Yield spread is between nominal and inflation-indexed constant maturity U.S. Treasury securities.

Inflation-Indexed 10-Year Government Notes

Percent, weekly data



Inflation-Indexed 10-Year Government Yield Spreads

Percent, weekly data