**Monetary Trends**

**March 2006**

"Measured Pace" in the Conduct of Monetary Policy

A t the May 2004 meeting, the Federal Open Market Committee (FOMC) introduced the phrase "policy accommodation can be removed at a pace that is likely to be measured" into the statement it makes at the conclusion of each meeting. The "measured pace" language, which was repeated in the next 12 statements, became widely regarded as a signal that the FOMC would raise the funds rate target by 25 basis points at its next meeting. This language was modified at the December 2005 meeting and discontinued at this year's January meeting. Now that that experience is over, it is useful to consider the extent to which policymakers should signal their next policy action.

The "measured pace" language appears to be a product of the economic conditions that accompanied it. Beginning in January 2001, on evidence that the economy was weakening and that inflation was contained, the FOMC began to ease policy: The Committee reduced the federal funds target from 6.5 percent to 1.75 percent in 2001 and again in 2002 and 2003 to the historically low level of 1 percent. The 1 percent rate was well below anyone's estimate of the so-called "neutral" nominal rate—the real interest rate (which is independent of monetary policy) plus the FOMC's implicit objective for inflation. It was understood that a 1 percent funds rate was not sustainable. Faced with strong productivity growth and no evidence of deteriorating inflation expectations, the FOMC decided to increase the target at a "measured pace." While signaling the timing and magnitude of the next funds rate target change appears to have been useful under these unusual circumstances, it is unlikely to be useful in others, particularly when the difference between the target and estimated neutral rates is relatively small. The nominal neutral rate changes over time and is subject to considerable uncertainty. Consequently, it is difficult to determine or predict; furthermore, in circumstances where the difference between the target and estimated neutral rates is smaller than it has been in recent years, policymakers may be uncertain whether the target will need to be increased, decreased, or maintained at the next meeting. Indeed, it is not surprising that the measured pace language was phased out when the target rate got closer to a level that some analysts considered "neutral."

Signaling the policy action at the next meeting is further complicated by the fact that the current level of the policy rate incorporates policymakers' best guess of the future state of the economy. Even if policymakers' expectations are correct on average, what will occur by the time of any particular meeting is not perfectly foreseeable. This could make policymakers understandably reluctant to decide on the action they'll take at the next meeting before they receive information about the accuracy of their current expectations.

There may be situations where policymakers believe they can achieve a particular objective by increasing or decreasing the funds rate by a percentage point over a period of time and, thereby, signal the direction and magnitude of the policy action at the next meeting. For example, fearing recession, policymakers might believe that the target may be reduced slowly by some cumulative amount. In such a circumstance, the direction of the next move might be predictable, but the magnitude would likely be less so. Moreover, the further the target gets below the estimated neutral rate, the more wary policymakers will be of signaling a reduction at the next meeting, preferring instead to examine the behavior of inflation indicators between meetings before deciding whether a further reduction is advisable.

That the FOMC may find it difficult, and consequently unadvisable, to signal the next policy action does not prevent the Committee from providing "forward guidance"—a statement of the Committee's thinking based on the information available at the time of the meeting and the Committee's expectation of what might happen. Forward guidance is not a commitment. The Committee would act in accordance with its forward guidance only if the Committee's expectation of what might happen actually occurred. Indeed, as argued in Pods (1999), transparency of this sort likely enhances the efficacy of monetary policy.

—Daniel L. Thornton


Notes expressed do not necessarily reflect official positions of the Federal Reserve System.
Monetary and Financial Indicators at a Glance
Monetary Aggregates and Their Components
Monetary Aggregates: Monthly Growth
Reserves Markets and Short-Term Credit Flows
Measures of Expected Inflation
Interest Rates
Policy-Based Inflation Indicators
Implied Forward Rates, Futures Contracts, and Inflation-Indexed Securities
Velocity, Gross Domestic Product, and M2
Bank Credit
Stock Market Index and Foreign Inflation and Interest Rates
Reference Tables
Definitions, Notes, and Sources

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: \[ \frac{[x(t) - x(t-1)]}{100} \] 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 prior year. For example, the percent change from year ago in x between month t-12 and the current month t is: \[ \frac{[x(t) - x(t-12)]}{100} \] 

We welcome your comments addressed to:
Editor, Monetary Trends
Research Division
Federal Reserve Bank of St. Louis
PO. Box 442
St. Louis, MO 63166-0442
or to:
stlsFRED@stls.frb.org

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

Definitions
M1: The sum of currency held outside the vaults of depository institutions, Federal Reserve Banks, and the U.S. Treasury; traveler’s checks; and demand and other checkable deposits issued by financial institutions (except demand deposits due to the Treasury and depository institutions), minus cash held in process of collection and Federal Reserve float.
M2: The sum of 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: The sum of M2 plus large-denomination ($100,000 or more) time deposits; repurchase agreements issued by depository institutions; Eurodollars; deposits, specifically, dollar-denominated deposits due to nonbank U.S. addresses held 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, states and local governments, households, and nonfinancial firms. End-of-period basis.
Adjusted Monetary Base: The sum of currency 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 depository institutions. This is a simple chain index; see Anderson and Rasche (1996a, 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 depository institutions. This is a simple chain index; see Anderson and Rasche (1996a, 2001, 2003).
Monetary Service 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 Neum르 (1997). Indexes are shown for the assets included in M2, with additional data at research.stlouisfed.org/washington/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 the Monetary Statistics Supplement to the Federal Reserve Bulletin, tables 1.21 and 1.26. M2, M3, and Monetary Service 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 distorted by total sweep programs that reclassify transactions deposits (demand deposits and other checkable deposits as savings deposits) initially by reducing bank’s required reserve; see Anderson and Rasche (2003) and research.stlouisfed.org/archived/idw/2003.html. Primary Credit Rate, Discount Rate, and Effective Federal Funds Rate shown in the chart Financial Markets Rates are plotted as of the date of the change, while the Effective Federal Funds Rate shown is plotted as of the end of the month in the table are monthly averages from the Board of Governors H15 Statistical Release. The Treasury Yield Curve and Real Treasury Yield Curve show convexity neutrality 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/idw/idwr4.html. See also Statistical Supplement to the Federal Reserve Bulletin, table 1.35. The X-12-ARIMA seasonal 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 deposits. Time Deposits is all those deposits other than demand deposits and large deposits. Small Time Deposits are deposits of $100,000 or less. 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: Reserve Balances 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-term and intermediate-term credit extended to individuals. See Statistical Supplement to the Federal Reserve Bulletin, table 1.35.
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 Survey 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 expenditure (PCE) price index to report its inflation forecast; the FOMC 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-Indicated 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 press on bank reserve positions. In recent years, the FOMC has not set an explicit target for the federal funds rate.
Page 10: Federal Funds Rate and Inflation Targets show the observed federal funds rate, quarterly, and the level of the funds rate implied by applying Taylor’s (1993) equation:
\[ x = 2.5 + 0.125y_t + \frac{\sigma_x}{\sigma_y} \frac{x}{y} \]

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Monetary Trends

M1 M2 M3
Percent change at an annual rate
2001 3.33 15.88 8.77 11.47
2002 4.92 12.96 7.88 8.03
2003 6.48 7.42 6.94 6.38
2004 5.57 3.93 4.55 5.10
2005 1.77 2.14 4.24 6.02

2003
1 7.88 7.90 6.65 6.77
2 11.05 5.87 7.94 5.48
3 8.11 10.42 7.98 7.54
4 1.70 -2.73 -1.07 -0.95

2004
1 5.89 2.60 3.28 5.43
2 6.23 9.28 8.54 9.75
3 4.09 1.88 3.69 4.05
4 4.83 1.93 4.07 3.43

2005
1 0.24 0.66 3.60 5.73
2 -0.35 0.25 2.59 5.95
3 -0.55 3.53 4.40 7.80
4 0.74 4.94 5.17 9.53

2004 Jan 1.58 2.43 1.76 7.83
Feb 12.91 8.15 8.64 9.42
Mar 8.83 9.58 9.01 10.71

Apr 8.80 9.41 8.53 9.12
May -2.60 13.37 12.30 12.36
Jun 4.27 0.66 1.57 4.15

Jul 2.00 -1.54 1.26 0.90
Aug 5.54 2.17 4.16 4.10
Sep 5.63 2.80 5.63 4.83

Oct 0.27 -0.31 4.22 0.67
Nov 11.74 4.58 6.55 4.63
Dec -1.73 1.75 3.36 4.89

2005 Jan -4.46 -0.68 2.68 7.16
Feb 2.13 -0.22 3.59 5.61
Mar 3.09 0.31 3.73 4.25

Apr -6.34 0.07 1.28 6.94
May 4.37 -1.20 1.75 5.48
Jun -1.07 4.07 4.83 7.40

Jul -6.11 2.78 3.72 4.55
Aug 6.93 5.14 5.59 12.63
Sep -2.59 6.07 5.69 10.57

Oct 1.53 5.56 5.37 9.88
Nov 0.75 2.17 4.04 6.05
Dec -1.12 6.04 5.14 9.63

2006 Jan 12.03 11.21 11.25 10.86

M2 and M3
Billions of dollars

Adjusted Monetary Base
Percent change at an annual rate

Reserve Market Rates

Inflation-Indexed Treasury Yield Spreads
Percent

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M2M3
Percent change from year ago

Monetary Services Index - M2
Percent change from year ago

Monetary Trends

updated through 02/08/06

Federal Funds
Primary
Prime
Prime
CDs
3-mo
2-yr
10-yr
Treasury Yields
Corporate
S & L
Bonds
Bonds
Conventional

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<th>Year</th>
<th>3-yr</th>
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*All values are given as a percent at an annual rate.

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<tr>
<th>Year</th>
<th>Money Stock</th>
<th>Bank Credit</th>
<th>Adjusted Monetary Base</th>
<th>Reserves</th>
<th>M3 M2</th>
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<tr>
<td>2001</td>
<td>5434.99</td>
<td>641.157</td>
<td>86.172</td>
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<td>88.156</td>
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<td>776.706</td>
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<td>2006</td>
<td>5954.723</td>
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<td>91.199</td>
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<th>Year</th>
<th>Domestic Nonfinancial Debt</th>
<th>Time Deposits</th>
<th>Checkable and Savings Deposits</th>
<th>Money Market Mutual Fund Shares</th>
<th>Repurchase Agreements and Eurodollars</th>
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<td>1523.517</td>
<td>177.212</td>
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<td>2545.506</td>
<td>227.912</td>
<td>431.436</td>
<td>510.000</td>
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*All values are given in billions of dollars.
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

Excess Reserves plus RCB Contracts
Billions of dollars

Nonfinancial Commercial Paper
Percent change from year ago

Consumer Credit
Percent change from year ago

*Actual value for September 2001 is $3.4 billion.

*Actual value for September 2001 is $28.43 billion.
Inflation and Inflation Expectations

The shaded region shows the Humphrey-Hawkins CPI inflation range. Beginning in January 2003, 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

10-Year less 3-Month T-Bill

3-Year less 3-Month T-Bill

Real Interest Rates

Percent, Real rate = Nominal rate less CPI inflation

1-Year Treasury Yield

Federal Funds Rate

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.