Monetary Trends

March 2009

Introduction

Some economists, policymakers, and pundits view the financial turmoil that began in August 2007 as the worst financial shock to the U.S. economy since the end of World War II. Some even assert that it amounts to the worst financial crisis since the 1930s. Accordingly, the Federal Reserve and other government agencies have taken aggressive actions to support the financial system and spur economic growth. Other economists and analysts, citing continued modest loan growth and relatively few bank failures last year (compared with, say, the late 1980s and early 1990s), do not share this view. Regardless, many banks have announced sharp earnings declines, and the possibility of further financial losses remains large.

To characterize the financial system's importance to the flow of capital to the markets or the supply and demand for bank loans, a 52 percent drop in the S&P 500 stock index from October 9, 2007, to November 20, 2008, accompanied the oil shock and fall in house prices. Accordingly, household net worth (financial and tangible net worth) fell by about $7 trillion between 2007:Q2 and 2008:Q4. Another key factor has been the simultaneous slowing in economic growth in most of the world's largest economies, which is important because exports were a key source of U.S. economic growth in 2004-07.

The U.S. Department of the Treasury provided the following estimates of the change in the number of bank failures.

References


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

Putting the Financial Crisis and Lending Activity in a Broader Context

Sources

Agence France-Presse; French note yields.

Bank of Canada: Canadian note yields.


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 is in time t-1 between t-1 and the current month t is: [(x_t - x_{t-1})/x_{t-1}] x 100. Note that this differs from National Economic Trends. In that publication, monthly percent change 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 between month t-12 and the current month t is: [(x_t - x_{t-12})/x_{t-12}] x 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 deposit institutions). Includes cash in transit.

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 mutual savings banks (with initial investments under $50,000). Excludes time deposits at banks.

M3: M2 plus large-denomination ($100,000 or more) time deposits; repurchase agreements issued by depositary institutions; Eurodollar deposits; and deposits issued by foreign banks.

Bank Credit: Includes 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, and nonprofit institutions.

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 changes in monetary reserve requirements on the quantity of base money held by depositary institutions. This series is a scaled chain index; see Anderson and Raskie (1996a, 2001, 2003).

Adjusted Reserves: The sum of vault cash and Federal Reserve Bank deposits held by depository institutions and an adjustment for the changes in monetary reserve requirements on the quantity of base money held by depository institutions. This series is a scaled chain index that is numerically larger than the Board of Governors’ measures, which includes vault cash not used to satisfy monetary reserve requirements and Federal Reserve Bank deposits used to satisfy required reserves, and previously excludes contract deposits. See Anderson and Raskie (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 Neumark (1997). Indices are shown for the assets included in M2, with additional data available at research.stls.frb.org/mis/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 1.2.1 and 1.2.6. M3, Adjusted Monetary Base, and Monetary Services Indices 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 M3 have been depressed by a number of sweep programs that rationally transactions deposits (demand deposits and other checkable deposits) as savings deposits overnight, thereby reducing banks’ required reserve; see Anderson and Raskie (2000) and research.stls.frb.org/agregidata.html. Primary Credit Rate, Discount Rate, and Intended Federal Funds Rate show in the chart the 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 FLSR Statistical Release. The Treasury Yield Curve and Real Treasury Yield Curve show current maturity yields calculated by the U.S. Treasury for securities 5, 7, 10, and 30 years to maturity. Inflation-Indexed Treasury Yield Spreads are a measure of inflation adjustment at these horizons, and it is simply the nominal constant maturity yield less the real constant maturity yield. Daily data and descriptions are available at research.stls.frb.org/fred2. See also Statistical Supplement to the Federal Reserve Bulletin, table 1.3.5. The 30-year constant maturity series was discontinued by the Treasury as of February 18, 2002.

Page 5: Checkable deposits in the 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 measures the 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 1.3.5.

Page 8: Inflation Expectations measures include the quarterly Federal Reserve Board 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 expenditures (PCE) price index to report its inflation range; the FOMC then switched to the PCE chain-type price index including food and energy prices ("core") beginning July 2004. Actually, 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 as posted measures, equal to nominal rates minus year-over-year CPI inflation.

From 1993 to the present the source of the longer-term PCE inflation expectations data is the Federal Reserve Board of Philadelphia’s Survey of Professional Forecasters. Prior to 1993, these data were obtained from the Board of Governors of the Federal Reserve System. Realized (nominal) inflation is the annualized rate of change for the 4-quarter period that corresponds to the forecast horizon (the current quarter through the next 3 quarters). The PCE annualized in the FOMC forecast for the next 4 quarters was expected to average 2 percent. In annual, the annualized average of change measured 4.8 percent from 1965Q1 to 1975Q4. Thus, the vertical distance between the two lines in the chart at any point is the forecast error.

Page 9: FOMC-Intended Federal Funds Rate is the level of 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 show the observed federal funds rate quarterly, and the level of the funds rate implied by applying Taylor’s (1993) equation:

\[ r = \frac{\pi^*}{\phi} - \frac{\phi}{2} \ln \left( \frac{1 + \pi^*}{1 + \pi} \right) \]

where \( \pi^* \) is the implied federal funds rate, \( \pi \) is the previous period’s inflation rate, \( \phi \) measures the lag over a year-on-year basis, \( \pi^* \) is the lag of the previous period’s level of real gross domestic product (GDP), and \( \pi^* \) is the lag of the estimate of the previous period’s level of potential output. Potential Real GDP is estimated by the Congressional Budget Office.

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

\[ MB^* = \pi \times (10 - \text{moving average growth of real GDP}) \]

where MB is the implied growth rate of the adjusted monetary base. The 10-year moving average growth of real GDP for a quarter is calculated as the average quarterly growth during the previous 4 quarters, at an annual rate, by the formula.

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Monetary Trends

updated through 02/17/09

M1 M2 M3*
Percent change at an annual rate
2004 5.57 4.73 5.09
2005 2.03 4.28 5.97
2006 0.19 5.02 4.95
2007 -0.35 5.74
2008 3.94 6.81

2006 1 1.76 4.73 5.72
2 0.25 2.79 3.59
3 -4.02 4.49 4.46
4 0.62 8.07 6.68
2007 1 0.13 7.63 5.06
2 1.49 9.84 5.73
3 -2.12 13.46 5.34
4 0.17 16.60 5.58
2008 1 0.93 16.53 8.10
2 1.81 13.40 5.36
3 10.98 5.23 4.81
4 33.05 10.56 14.85

2007 Jan 7.00 7.52 8.21
Feb 4.62 2.40 1.13
Mar 1.87 9.35 6.03
Apr 9.35 12.34 8.26
May 0.82 10.50 4.77
Jun -13.24 8.57 3.86
Jul 1.80 11.05 4.51
Aug 1.84 10.58 8.00
Sep -1.92 19.72 5.76
Oct 4.79 16.91 4.06
Nov -4.38 14.02 5.15
Dec -1.88 9.85 5.34

2008 Jan 3.38 11.58 7.49
Feb 2.36 20.00 12.13
Mar 1.72 19.95 9.78
Apr 0.64 9.79 3.08
May 0.04 7.90 2.81
Jun 8.68 5.96 1.67
Jul 14.30 7.73 7.89
Aug -6.81 -1.99 -1.92
Sep 51.84 7.91 16.99
Oct 19.09 6.22 18.46
Nov 39.68 15.84 8.58
Dec 56.63 29.87 27.26

2009 Jan -15.67 23.07 13.05

*See table of contents for changes to the series.
**Monetary Trends**

**M2**
Percent change from year ago

**M3**
Percent change from year ago

**Monetary Services Index - M2**
Percent change from year ago

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

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**Table:**

<table>
<thead>
<tr>
<th>Year</th>
<th>M2</th>
<th>M3</th>
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<td></td>
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**Monetary Trends**

**Table:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Federal Funds</th>
<th>Primary Credit Rate</th>
<th>Prime Rate</th>
<th>3-mo CD</th>
<th>3-mo Treasury Yields</th>
<th>3-yr Treasury Yields</th>
<th>10-yr Treasury Yields</th>
<th>Corporate Bonds</th>
<th>Municipal Bonds</th>
<th>Conventional Mortgage</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>1.35</td>
<td>2.34</td>
<td>3.43</td>
<td>1.56</td>
<td>1.40</td>
<td>2.78</td>
<td>4.27</td>
<td>5.63</td>
<td>4.50</td>
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<td>4.18</td>
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<td>8.05</td>
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<td>2009</td>
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<td>1.95</td>
<td>5.09</td>
<td>2.97</td>
<td>1.39</td>
<td>2.24</td>
<td>3.67</td>
<td>6.63</td>
<td>4.58</td>
<td>6.04</td>
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**Note:** All values are given as a percent at an annual rate.
### Money Stock

<table>
<thead>
<tr>
<th>Year</th>
<th>M1</th>
<th>M2M</th>
<th>M2</th>
<th>M3</th>
<th>Bank Credit</th>
<th>Adjusted Monetary Base</th>
<th>Reserves</th>
<th>MSI M3**</th>
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</thead>
<tbody>
<tr>
<td>2004</td>
<td>1344.482</td>
<td>6559.088</td>
<td>6966.406</td>
<td>10245.718</td>
<td>6595.815</td>
<td>776.769</td>
<td>96.129</td>
<td>329.875</td>
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<tr>
<td>2005</td>
<td>1373.752</td>
<td>6811.530</td>
<td>7051.975</td>
<td>10656.477</td>
<td>7347.856</td>
<td>906.829</td>
<td>96.560</td>
<td>343.539</td>
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<td>2006</td>
<td>1374.358</td>
<td>6996.483</td>
<td>8142.973</td>
<td>10670.74</td>
<td>7958.671</td>
<td>835.039</td>
<td>94.913</td>
<td>343.539</td>
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<td>2007</td>
<td>1369.575</td>
<td>7619.062</td>
<td>8730.304</td>
<td>10099.788</td>
<td>8742.766</td>
<td>850.627</td>
<td>94.200</td>
<td>343.539</td>
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<tr>
<td>2008</td>
<td>1423.574</td>
<td>8986.158</td>
<td>7727.788</td>
<td>10009.761</td>
<td>9555.792</td>
<td>1009.761</td>
<td>232.104</td>
<td>343.539</td>
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### Domestic Nonfinancial Debt

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<th>Year</th>
<th>Total</th>
<th>Federal</th>
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<tr>
<td>2007</td>
<td>7205.940</td>
<td>2482.832</td>
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<td>2008</td>
<td>7534.377</td>
<td>2547.823</td>
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### Time Deposits*

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<th>Year</th>
<th>Large denomination</th>
<th>Small denomination</th>
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<td>2007</td>
<td>8703.713</td>
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<tr>
<td>2008</td>
<td>9041.630</td>
<td>1932.008</td>
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### Money Market Mutual Fund Shares

<table>
<thead>
<tr>
<th>Year</th>
<th>Institutional funds</th>
<th>Retail funds</th>
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<tbody>
<tr>
<td>2007</td>
<td>1301.067</td>
<td>2451.093</td>
</tr>
<tr>
<td>2008</td>
<td>1398.067</td>
<td>2591.093</td>
</tr>
</tbody>
</table>

### Repurchase Agreements and Eurodollars*

<table>
<thead>
<tr>
<th>Year</th>
<th>Repurchase (left)</th>
<th>Eurodollars (right)</th>
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<tbody>
<tr>
<td>2007</td>
<td>430.067</td>
<td>430.067</td>
</tr>
<tr>
<td>2008</td>
<td>435.067</td>
<td>435.067</td>
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</table>

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**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.

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**Updated through:**
02/17/09
Monetary Trends

M1
Percent change at an annual rate

M2
Percent change at an annual 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

Inflation and Long-Term Interest Rate Differentials
CPI Inflation and 1-Year-Ahead CPI Inflation Expectations

Percent

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.

10-Year Ahead PCE Inflation Expectations and Realized Inflation

Percent

See the notes section for an explanation of the chart.

Treasury Security Yield Spreads

Yield to maturity

Real Interest Rates

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

M2

Percent change from year ago

Dashed lines indicate 10-year moving averages.