Research Department
Federal Reserve
Bank of
San Francisco

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Counting Money

A current dilemma facing the Federal Reserve is how best to control the money supply when information on this aggregate is subject to so much uncertainty and measurement error. The problem reached the headlines recently, when the annual revision of the money-supply series raised the 1973 growth rate from 5.0 to 5.7 percent, mostly because of the largest nonmember-bank adjustment in the history of the series. Adjustments of this size bring into question what can be done to gain greater control of the money supply.

In its monthly deliberations, the Federal Open Market Committee (FOMC) establishes desired longer-run growth rates for the monetary aggregates. Short- and long-run targets for the money supply, bank credit and other aggregates are written into the monthly operating instructions to the Manager of the System Open Market Account. Given the fact that the Manager has only a rough knowledge of what the money supply is on any particular day, open-market operations in the government-securities market must be carried out in a day-to-day environment of uncertainty. In addition, because the Federal Reserve obtains weekly money-supply observations on member banks, but only four annual observations on nonmember commercial banks, one must wait until at least the end of each year to discover what the year's money supply really was.

Revisions

There are a variety of concepts of the money supply, or money stock. In recent years, the FOMC generally has given most attention to the narrowly defined money supply, M_1, defined to include demand deposits (other than U.S. Government and domestic interbank deposits, less cash items in process of collection), plus currency in the hands of the nonbank public. Broader concepts include M_2, defined as M_1 plus commercial-bank time deposits (other than large certificates of deposit), and M_3, composed of M_2 plus thrift-institution deposits.

Nonmember banks today hold about 25 percent of total private demand deposits, compared with only about 18 percent of the total in the early 1960's. This rising nonmember-bank share has increased the problem of obtaining accurate and timely money-supply statistics. Serious measurement errors arise because nonmember-bank data are usually available only several times a year, at "call dates," and at other times are simply estimated as a fraction of data for member banks of comparable size.

Other major data revisions occur in series arising from the check-clearing process—cash items in process of collection, plus Federal Reserve float—which must be subtracted from gross demand deposits in the computation process. In some years substantial revisions occur because of problems in measuring cash items associated with international dealings—Eurodollar borrowing, plus the operations of Edge Act corporations and foreign-bank agencies in the U.S. (Revisions of this type were substantial in 1969 and 1970.) Revisions also arise because of

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annual changes in seasonal factors; although such changes in seasonals are generally minor, they can produce monthly and quarterly growth rates different from those generated by the original seasonally adjusted series.

More revisions

Movements in the money supply may sometimes be caused by rapid changes in Treasury demand deposits at commercial banks. Although Treasury deposits are not included in the money supply, shifts between Treasury and private demand deposits can cause erratic movements in the basic series. Because the flows of Treasury receipts and expenditures are irregular, they can wreak havoc with seasonal adjustment factors.

The changing nature of financial institutions also causes some ambiguity in data measurement and interpretation. Specifically, the rise of one-bank holding companies has moved some activities normally associated with commercial banks to affiliated organizations, often bringing about reductions in bank demand deposits. An example is the shifting of travelers' check operations from commercial banks to bank affiliates. If travelers' checks are issued by a bank, total deposits remain unchanged; the issuance is simply the exchange of a regular demand deposit (or cash) for another form of demand deposit. However, if travelers' checks are issued by a bank affiliate, the money supply is understated; demand deposits (or cash) decline for the purchaser, but there is no offsetting demand-deposit increase on the other side of the transaction.

Measuring policy

In its deliberations during the last several years, the FOMC has given increased emphasis to the control of the monetary aggregates, such as the money supply, although it has continued to consider conditions in the money and capital markets. This shifting emphasis in monetary policy has been influenced by the weight of the academic evidence, which suggests that "money" has a very substantial effect on the major output and price variables. In the short run, inflationary pressures can develop from temporary market-clearing mechanisms, such as the adjustment of the internal price level to a change in world prices—witness the petroleum price upsurge. But for the long run, most schools of thought agree that inflation is a monetary phenomenon.

The question of money control involves the selection of the appropriate time frame over which the monetary authorities desire to control the stock of money. Most evidence appears to point to a minimum desirable control period of about six months. Most large econometric models of the U.S. economy indicate that variations in the money supply within a six-month period have little effect on aggregate output and prices, so long as money returns to some "normal" rate of growth after this period. It would follow from this that there is

no need to control money very closely on a monthly basis.

Indeed, there is some danger in attempting to control money on a month-to-month basis because of the uncertain quality of the monthly data. Some studies indicate a rather low correlation between preliminary and finally revised money-supply data, thus suggesting the hazards involved in basing a major policy change on a single month's data. Since short-term data are fraught with measurement error, the safest method of determining money-supply behavior would appear to be the use of quarterly average data.

What measure to choose?

Different observers choose different indicators in attempting to analyze the future direction of the money supply. Some watch interest rates; some watch bank reserve figures, such as nonborrowed reserves and net free reserves (the difference between excess reserves and member-bank borrowing); and others choose the monetary base (essentially, Federal Reserve assets).

According to the latter view, too many observers pay excessive attention to short-run movements in the money supply, and not enough attention to movements in the basic source of money growth, the monetary base. Over long time periods, this aggregate shows a more stable relationship with the narrowly defined money supply than any other reserve aggregate. Indeed, recent changes in the monetary base appear to be a better indicator of the underlying movements in money than even the currently available money-supply data.

Supporters of this particular measure also point to its statistical reliability. There are relatively few measurement problems with the monetary base, compared with those in weekly and monthly money-supply data. The monetary base is compiled from daily figures from the Federal Reserve and Treasury balance sheets, while even the preliminary money-supply data are available only with a two-week lag. It is worth repeating that the "money multiplier," the ratio of the money supply to the monetary base, shows a very stable long-run relationship.

Whatever the virtues of the various monetary indicators, Federal Reserve policymakers are determined to improve the quality of current money-supply data. This helps account for the proposal to extend the present system of reserve requirements to all institutions issuing deposits that perform any type of checking-account function. Under the present system of reporting, money-supply estimating is quite difficult, as can be seen from the size of the changes in nonmember-bank data in the latest revisions. More frequent reporting of nonmember-bank deposits, in accordance with the Fed's proposal, would improve the accuracy of monetary data and thereby help in monetary-policy formulation.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 1/30/74	Change from 1/23/74	Change from year ago Dollar	Change from year ago Percent
Loan gross adjusted and investments*	78,897	+ 188	+9,049	+ 12.96
Loans gross adjusted—total*	59,930	+ 94	+8,985	+ 17.64
Securities loans	1,069	+ 66	− 349	− 24.61
Commercial and industrial	20,719	+ 3	+2,702	+ 15.00
Real estate	18,447	+ 27	+3,162	+ 20.69
Consumer instalment	9,156	+ 11	+1,203	+ 15.13
U.S. Treasury securities	6,054	− 99	−1,379	− 18.55
Other Securities	12,913	+ 193	+1,443	+ 12.58
Deposits (less cash items)—total*	75,218	+ 375	+7,582	+ 11.21
Demand deposits adjusted	21,478	− 103	+1,113	+ 5.47
U.S. Government deposits	1,158	+ 254	− 67	− 5.47
Time deposits—total*	51,457	+ 263	+6,707	+ 14.99
Savings	17,648	− 33	− 632	− 3.46
Other time I.P.C.	23,762	+ 286	+6,111	+ 34.62
State and political subdivisions	7,411	+ 12	+ 823	+ 12.49
(Large negotiable CD's)	12,019	+ 998	+5,325	+ 79.55

Weekly Averages of Daily Figures	Week ended 1/30/74	Week ended 1/23/74	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves	− 2	− 12	+ 14
Borrowings	331	120	248
Net free (+) / Net borrowed (−)	− 333	− 132	−234
Federal Funds—Seven Large Banks			
Interbank Federal funds transactions			
Net purchases (+) / Net sales (−)	+1,137	+1,864	+230
Transactions: U.S. securities dealers			
Net loans (+) / Net borrowings (−)	+ 134	+ 206	− 4

*Includes items not shown separately.

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