

Proposed redefinition of money stock measures

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This article summarizes proposals by the staff of the Board of Governors for redefining the monetary aggregates that were presented in the January 1979 Federal Reserve Bulletin. The proposals raise important issues regarding the payments system, the evolving role of depository institutions, and the basis on which the public chooses to hold various financial assets. To aid in further consideration of these proposals, comments are invited from the public. Please address comments to Office of the Staff Director for Monetary and Financial Policy, Board of Governors of the Federal Reserve System, Washington, D.C. 20551.

“Money” is generally defined in terms of the functions it serves—medium of exchange, standard of value, and store of purchasing power. And because the Federal Reserve has primary responsibility for regulating the volume of money available to meet demands of the public, it devotes significant resources to measuring “money.” Recognizing that different financial assets serve different money functions and that no one measure of money is adequate for all purposes, the Federal Reserve currently publishes six measures of the money stock.

The current measures, however, have become less meaningful as a result of recent regulatory changes and financial innovations that have changed the character of the public’s monetary assets. And as a result, the staff of the Board of Governors has proposed a redefinition of the monetary aggregates to replace those currently published.¹ The proposed redefinitions take into account the

changing character of the public’s financial assets, as well as some of the recommendations of the Advisory Committee on Monetary Statistics (the Bach Committee).² This article summarizes the staff’s proposal.

Evolution of the current monetary aggregates

While many financial assets serve the standard of value and store of purchasing power functions of money, only a few are accepted as a means of payment—that is, for making transactions. When introduced in 1960,³ the measure of money based on daily average data published now as M-1 represented financial assets that could be used directly in transactions. Although refinements and revisions to the data have been made since, current M-1 is still defined in basically the same way, as the public’s holdings of currency, coin, and demand deposits at commercial banks. The “public” means exclusive of holdings by commercial banks and the U.S. government.

It has long been recognized that various savings instruments provide potential purchasing power. They were not originally included in the measured concept of money, however, because they usually had to be converted first into cash or demand deposits before the funds could be used for transactions. Nevertheless, related data on all commercial bank time deposits, also measured on a daily average basis, were published

²*Improving the Monetary Aggregates: Report of the Advisory Committee on Monetary Statistics*, (Board of Governors of the Federal Reserve System, June 1976).

³“A New Measure of the Money Supply,” *Federal Reserve Bulletin*, October 1960, pp. 1102-21. Monetary data published prior to late 1960 was as of a single day.

¹“A Proposal for Redefining the Monetary Aggregates,” *Federal Reserve Bulletin*, January 1979, pp. 13-42.

separately beginning in 1962.

It was often argued that a broader measure of money was sometimes more appropriate. And while broader measures could be constructed from data published by the Federal Reserve, not until 1971 was more than one money supply measure, labeled as such, published. That was when M-2 and M-3 were added.

Then, as now, M-2 was defined as M-1 plus commercial bank time and savings deposits other than large negotiable CDs issued by large banks. As first introduced, M-3 included M-2 plus mutual savings bank deposits and savings and loan shares. In 1975, when the number of published monetary aggregate measures was increased to five, M-3 was redefined to also include credit union shares.

The two additional money stock measures introduced in 1975 were M-4 and M-5, defined by adding large negotiable CDs to M-2 and M-3, respectively. Thus, current M-4 represents public holdings of currency, coin, and all deposits at commercial banks, while current M-5 represents public holdings of currency, coin, and all deposits at banks and thrift institutions.

Because of the uncertainties associated with the introduction of prearranged automatic transfers from savings to checking accounts (ATS), a sixth monetary aggregate measure, M-1+, was introduced in late 1978. Current M-1+ includes M-1 plus savings deposits at commercial banks and transactions accounts at thrift institutions. Although M-1 is affected by deposit shifts between demand and savings accounts subject to ATS, such shifts do not change M-1+. The introduction of ATS and the development and growth of transactions accounts outside the commercial banking system are two factors leading to the proposed redefinition of the monetary aggregates.

Changing character of the public's monetary assets

As a result of regulatory changes and financial innovations, the character of the

public's monetary assets has undergone basic alteration in the 1970s. In some cases, certain types of deposits have become more alike. Others have become more dissimilar. In addition, distinctions between deposits at different depository institutions have become blurred.

Some developments have increased the number of financial instruments that can be used for making transactions. These include the authorization of negotiable orders of withdrawal accounts (NOWs) in some states, credit union share drafts, and demand deposits at thrifts. If adopted, the Federal Home Loan Bank Board's proposal to allow federally chartered S&Ls to offer payment order accounts would introduce still another transactions instrument.

With ATS and the development of these alternative forms of payment, current M-1 has become a less comprehensive measure of transactions balances. Furthermore, other developments have also greatly increased the liquidity of savings accounts, making it much easier for savings accounts at commercial banks and at thrift institutions to be used for transactions purposes.

In addition to ATS, preauthorized payments can be made from savings accounts, and funds can be transferred from savings accounts to checking accounts by telephone. Point-of-sale (POS) terminals allow S&L customers to withdraw funds from their savings accounts and make deposits through use of remote terminals at retailers. And businesses and domestic governmental units can hold savings accounts at commercial banks, a development that allows them to hold highly liquid interest-earning deposits instead of demand balances.

While savings deposits have become more liquid, small time deposits at commercial banks and thrift institutions have generally become less liquid. As the regulatory ceiling rates on four, six, and eight-year time deposits were increased, depository institutions were able to issue longer-term, less liquid time deposits, lengthening the average maturity of their time deposits. The recent introduction of six-month money market cer-

Chronology of developments in the 1970s affecting the character of the public's monetary assets

I. Developments leading to new transactions instruments

June 1972 State-chartered MSBs began offering negotiable orders of withdrawal (NOWs) accounts in Massachusetts.

Sept 1972 State-chartered MSBs began offering NOWs in New Hampshire.

Jan 1974 Depository institutions in Massachusetts and New Hampshire authorized to offer NOWs.

Oct 1974 Temporary experimental share draft programs first approved for federal CUs.

Mar 1976 Depository institutions in Connecticut, Maine, Rhode Island, and Vermont authorized to offer NOWs.

May 1976 State-chartered MSBs and S&Ls in New York State authorized to offer consumer demand deposits. (Prior to this time they could offer payment orders of withdrawal (POW) deposits. In addition, thrift institutions in some states have been permitted to offer noninterest-earning transactions balances to households. State-chartered S&Ls in Illinois, for example, have been able to offer noninterest-bearing negotiable orders of withdrawal (NINOWs) accounts since Oct. 1975.)

Mar 1978 Final regulations for permanent share draft programs at federal CUs became effective.

Nov 1978 Depository institutions in New York State authorized to offer NOWs.

Nov 1978 Federal Home Loan Bank Board proposed authorizing federally chartered S&Ls to offer payment order accounts (POAs).

II. Developments increasing liquidity of savings accounts

Sept 1970 S&Ls permitted to make preauthorized nonnegotiable transfers from savings accounts for household-related expenditures.

Jan 1974 Point-of-sale (POS) terminals permitting remote withdrawal of deposits from savings balances at S&Ls allowed.

Apr 1975 Telephone transfers from savings balances at CBs permitted. (Telephone transfers from savings balances at thrift institutions have been allowed since the 1960s.)

Apr 1975 S&Ls permitted to make preauthorized third-party nonnegotiable transfers from savings accounts for any purpose.

Sept 1975 CBs permitted to make preauthorized third-party nonnegotiable transfers from savings accounts for any purpose.

Nov 1978 Prearranged automatic transfer services (ATS) from savings balances at CBs and thrifts having transactions balances authorized.

III. Developments expanding liquid investment alternatives available

Early 1974 Money market mutual funds came into existence on a large-scale basis. (These funds, which invest in money market instruments, allow their shareholders to redeem shares by checks drawn on accounts established at designated banks, by wire transfer, or by mail.)

Nov 1974 Savings accounts at CBs for domestic government units permitted.

Nov 1975 Savings accounts at CBs for businesses, up to \$150,000 per account per customer, permitted.

IV. Developments affecting nature of time deposits

Jan 1970 Increase in interest rate ceilings on two-and-one-half year deposit approved.

Jun 1970 Interest rate ceilings on time deposits of \$100,000 or more maturing in less than 90 days suspended.

May 1973 Interest rate ceilings on time deposits of \$100,000 or more maturing in 90 days or more suspended.

Jul 1973 Increase in interest rate ceilings on four-year deposit approved.

Jul 1973 Substantial penalty on early withdrawal of time deposits imposed.

Jul 1973 Interest rate ceilings on multiple maturity time deposits of \$100,000 or more suspended.

Dec 1974 Increase in interest rate ceilings on six-year deposit approved.

Jun 1978 Increase in interest rate ceilings on eight-year deposit approved.

Jun 1978 Six-month money market certificates with ceiling rate tied to 6-month Treasury bill rate authorized.

CBs: commercial banks.

CUs: credit unions.

MSBs: mutual savings banks.

S&Ls: savings and loan associations.

tificates (MMCs) has tended to shorten the average time deposit maturity, but the liquidity of MMCs as well as other small time deposits has been lessened by the imposition of penalties for early withdrawal.

Also included in current M-2 and M-3 are some large time deposits, negotiable and nonnegotiable, that are more like the excluded large negotiable CDs of weekly reporting banks than either the savings or small time deposit components of current M-2 and M-3. Since the regulatory ceiling rates on time deposits of \$100,000 or more were suspended, banks and thrifts have tended to issue these large deposit liabilities in order to offset cyclical movements in other deposit liabilities.

Banks have also intensified use of non-deposit sources of funds in recent years. In particular, they have increased their reliance on security repurchase agreements (RPs) with customers. These RPs give a customer a highly liquid and earning asset as a safe alternative to holding deposits.

The public's more intensive use of cash management techniques has reduced the level of demand deposits needed to conduct transactions. Through use of such techniques as lock boxes, wire transfers, information-retrieval systems, and cash-concentration accounts, businesses especially have been able to invest funds in RPs, commercial paper, and treasury bills that would otherwise have been held as demand deposits. The incentive to make use of these techniques has increased with the rise in interest rates.

Because of these changes, the meaning of the monetary aggregates as they are now defined has been altered, making movements in the aggregates difficult to interpret. The experience of the past few years further suggests that relationships between the current monetary aggregates and GNP may have also changed. It appears, therefore, that new definitions are needed. Furthermore, as regulatory changes and financial innovations will most likely continue, further refinements in the definitions of the monetary aggregates may be needed in the future.

Proposed monetary aggregates

Four redefined monetary aggregates have been proposed to replace those currently published. Because no one measure of money is adequate for all purposes, the separate components of the proposed monetary aggregates and such related financial assets as RPs would also be published.

In the proposed money stock measures, similar types of deposits are aggregated across depository institutions. In developing these measures, two questions were asked. First, do the assets in the aggregate serve as mediums of exchange—that is, as transactions balances? Second, can the assets be readily converted into transactions balances?

Once these questions were answered, other considerations were taken into account in proposing definitions. One was the availability of data. Another was the relationship of the proposed measures to other variables, particularly GNP. Still another was the ability of the Federal Reserve to control the proposed aggregates.

The proposed M-1 measure was designed to measure domestic transactions balances more adequately than current M-1. Proposed M-1 adds to current M-1 the new transactions-related savings deposits at commercial banks and thrift institutions—NOW accounts, ATS balances, credit union share drafts, demand deposits at such thrifts as mutual savings banks, and, if approved, S&L payment order accounts. In line with a recommendation of the Bach Committee, demand deposits of foreign commercial banks and official institutions are excluded. This is because foreign deposits are used primarily for international transactions and international reserves.⁴

Thus far, the new transactions balances to be added are smaller than the foreign-related demand deposits to be excluded so that proposed M-1 is smaller than current M-1. And while growth rates for the two series have been quite similar, they are likely to diverge in the future as transactions-related savings

⁴*Improving the Monetary Aggregates: Report*, p. 4.

balances are used more widely.

Proposed M-1+ adds savings accounts at commercial banks other than ATS and NOWs to proposed M-1. As a result, except for the exclusion of demand deposits of foreign commercial banks and official institutions, proposed M-1+ is basically the same as current M-1+. Recognizing the increased liquidity of commercial bank savings deposits, the Bach Committee had suggested that an aggregate like proposed M-1+ be considered.⁵

There is some evidence suggesting that savings accounts at commercial banks have been more liquid than those at thrift institutions.⁶ But as the public adjusts to ATS, developments could limit the usefulness of proposed M-1+ to a transitional role.

The third redefined aggregate is proposed M-2, which adds savings balances at all depository institutions to proposed M-1. Unlike current M-2, which adds the increasingly dissimilar savings and time deposits at commercial banks to current M-1, proposed M-2 aggregates similar deposits across depository institutions. Like proposed M-1+, an aggregate like proposed M-2 had been suggested by the Bach Committee.⁷ And while commercial bank savings accounts may be slightly more liquid, there is evidence that savings accounts at different institutions are good substitutes for one another.⁸

The fourth redefined measure is proposed M-3, made up of proposed M-2 plus all time deposits at all depository institutions regardless of denomination, maturity, or negotiability. As with proposed M-1 and proposed M-2, similar deposits are summed across all depository institutions. By including all deposit liabilities of all depository institutions, proposed M-3 represents the

⁵*Improving the Monetary Aggregates: Report*, p. 11.

⁶William A. Barnett, "A Fully Nested System of Monetary Quantity and Dual User Cost Price Aggregates," (Board of Governors of the Federal Reserve System, Division of Research and Statistics, Econometric and Computer Applications Section, November 1978: processed), p. 2.

⁷*Improving the Monetary Aggregates: Report*, p. 11.

⁸Barnett, p. 2.

In the proposed monetary aggregates, similar types of deposits are aggregated across depository institutions

Proposed aggregate	Components	Amount June 1978 (billions of dollars, not seasonally adjusted)
1. M-1 ...	Current M-1	351.7
	PLUS: NOW balances	3.3 ¹
	Credit union share drafts	.6
	Demand deposits at thrifts	.9
	ATS savings	0 ²
	LESS: Demand deposits of foreign commercial banks and official institutions	11.3
	Total ³	345.0
2. M-1+ ...	Proposed M-1	345.0
	PLUS: Savings balances at commercial banks ⁴	221.6
	Total	566.6
3. M-2 ...	Proposed M-1	345.0
	PLUS: Savings balances at all depository institutions ⁵	495.3
	Total	840.3
4. M-3 ...	Proposed M-1	345.0
	PLUS: All time and savings deposits (including large time deposits) at all depository institutions ⁵	1,154.6
	Total	1,499.7

¹Consists of NOW balances in New England states. In November 1978, NOW accounts were authorized in New York State and by March 7, 1979, the stock of NOW balances at depository institutions in New York is estimated to have been \$1.0 billion.

²Would also include payment order accounts (POA) at savings and loans, if the current Federal Home Loan Bank Board proposal is adopted. ATS savings were first offered on November 1, 1978, and by March 7, 1979, estimated ATS balances were \$5.7 billion.

³Total does not equal the sum of the components because of other miscellaneous adjustments to the total.

⁴Excludes NOW and ATS savings balances at commercial banks.

⁵Excludes all NOW, ATS, POA (if introduced), and credit union share draft balances.

SOURCE: "A Proposal for Redefining the Monetary Aggregates," *Federal Reserve Bulletin*, January 1979, p. 17. Data in the table do not reflect the benchmark revision to the money stock data announced in the February 1979 *Bulletin*.

broadest of the suggested monetary aggregates.

Because of the growing importance of nondeposit sources of funds, particularly RPs, a monetary aggregate that also included non-deposit liabilities of depository institutions might be useful. Data limitations, however, impede construction of such an aggregate at this time.

Data availability

In theory, concepts of money that satisfy the user's criteria can be developed. In practice, however, lack of data or availability of only poor data can hamper construction of a series corresponding to theoretical spec-

ifications. Furthermore, construction of a series based on data that are not timely can limit its usefulness for policy purposes.

An example is the poor quality of data on RP liabilities of banks held by the nonbank public. Without good data, these liabilities cannot be included in the proposed redefinitions of the monetary aggregates. Similarly, some transactions balances, such as money market mutual funds and traveler's checks issued by nonbanks, are excluded from proposed M-1 primarily because sufficient data are not available.⁹

Given current data sources, monthly estimates of the proposed aggregates can be made. However, the first published monthly data are apt to be less reliable than current data and subject to greater revision. This is primarily because of the lag in obtaining information on transactions and ordinary savings balances at thrift institutions. Weekly estimates of commercial bank deposits are available, but lack of weekly information on deposits at thrift institutions would introduce greater uncertainty into estimates of the proposed monetary aggregates. Publication of data on the proposed aggregates could be delayed, of course, or, in line with the recommendation of the Bach Committee, more timely information could be gathered from institutions that are not members of the Federal Reserve System.¹⁰ Indeed, efforts are under way to obtain better data from non-member institutions.

⁹In addition, infrequency or unavailability of data has precluded complete implementation of all of the Bach Committee's recommendations that interinstitution deposits be consolidated. (*Improving the Monetary Aggregates: Report*, pp. 12-14.) The committee recommended that deposits held by depository institutions at other institutions for the purpose of servicing the deposits included in an aggregate be consolidated rather than combined. To combine the interinstitution deposits results in double-counting and, therefore, in an overstatement of the public's monetary assets. Where possible, the proposed aggregates were constructed with these consolidation principles in mind. Insufficient data, however, resulted in a "not negligible" amount of interinstitution deposits being combined rather than consolidated. See "A Proposal for Redefining the Monetary Aggregates," p. 32. See also the appendix to the above article "Appendix: Data Sources and Construction of the Proposed Monetary Aggregates," pp. 40-41.

¹⁰*Improving the Monetary Aggregates: Report*, p. 3

Empirical evidence

One criterion that is often used in choosing between alternative definitions of money is the relative strength of the relationship between the various money measures and other variables, particularly GNP. The staff of the Board of Governors prepared several econometric studies investigating the empirical relationships between primarily GNP and both current and proposed monetary aggregates.¹¹ The evidence from these studies is somewhat inconclusive. The proposed aggregates appear neither substantially better nor worse than the current aggregates. But some of the evidence for the most recent period tends to indicate a marginally stronger relationship between GNP and the proposed aggregates.

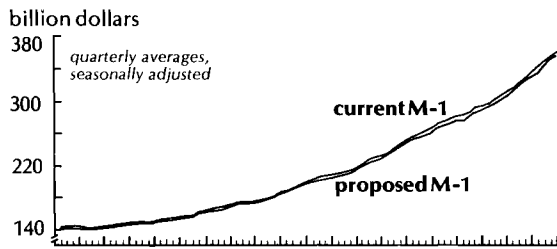
However, empirical studies comparing current and proposed aggregates should be analyzed with caution. Use of a monetary measure whose meaning has changed limits the usefulness of econometric evidence based on the measure. Because the character of monetary assets has changed, current monetary aggregate relationships that once held are not likely to be as strong in the future. Likewise, recent changes may lead to stronger relationships between the proposed aggregates and other variables than in the past.

Controllability

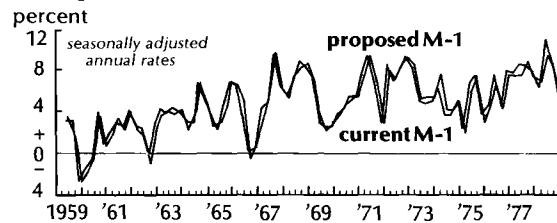
A final consideration is the ability of the Federal Reserve to influence the levels of the various monetary aggregates and their rates of growth. For implementation of monetary

¹¹Richard D. Porter, Eileen Mauskopf, David E. Lindsey, and Richard Berner, "Current and Proposed Monetary Aggregates: Some Empirical Issues," (Board of Governors of the Federal Reserve System, Division of Research and Statistics, Econometric and Computer Applications Section, January 1979; processed); P. A. Tinsley, P. A. Spindt, with M. E. Friar, "Indicator and Filter Attributes of Monetary Aggregates: A Nit-Picking Case for Disaggregation," (Board of Governors of the Federal Reserve System, Division of Research and Statistics, Special Studies Section, October 1978; processed); and Barnett. The results of these studies are summarized in "A Proposal for Redefining the Monetary Aggregates."

Proposed M-1 level is lower than current M-1 due to exclusion of foreign deposits



Rates of growth, however, are quite similar



policy, it is not enough for an aggregate to be closely related to the ultimate objectives of policy. The Federal Reserve must also be able to influence an aggregate through available instruments of monetary policy. The extent of control over a particular aggregate depends largely on the operating procedures the Federal Reserve uses.¹²

If the Federal Reserve uses a reserves operating target, control over a particular monetary aggregate is increased if the deposits in that aggregate are subject to reserve requirements set by the Federal Reserve.¹³ Under a reserves operating procedure, the Federal Reserve is likely to have less direct control over the proposed monetary aggregates than over the current aggregates. This is because deposits at thrift

institutions are not covered by Federal Reserve requirements.

If the Federal Reserve uses an interest rate operating target, control over a monetary aggregate depends primarily on the sensitivity of demand for that aggregate to changes in interest rates. Empirical estimates of demand for the various monetary aggregates, proposed and current, suggest that if the Federal Reserve uses an interest rate operating target, control over the proposed aggregates would be about the same as that over the current aggregates.

Summary

Four redefined measures have been proposed to replace the six monetary aggregate measures the Federal Reserve currently publishes. All the proposed monetary aggregates would include similar deposits at all depository institutions. By including transactions accounts at thrift institutions as well as commercial banks, proposed M-1 would be a more accurate measure of the public's transactions balances than current M-1.

Adoption of the proposed aggregates would have several implications for monetary policy. Unless new information sources were developed, information on the proposed monetary aggregates would not be as timely as now or as reliable on a current basis. More uncertainty about the amount of "money" available could impair implementation of monetary policy. Similarly, given its current range of reserve requirement authority, the Federal Reserve could have less control over the proposed aggregates than over the current aggregates, depending on operating procedures used.

The proposed monetary aggregates, however, are conceptually closer to theoretical "money" than the current measures. Instead of rejecting the proposed aggregates because of data availability or controllability problems, it would seem more appropriate to continue seeking ways of improving both the timeliness and quality of the data and the extent of Federal Reserve control over the proposed measures.

¹²Kenneth J. Kopecky, "The Relationship between Reserve Ratios and the Monetary Aggregates under Reserves and Federal Funds Rate Operating Targets," Staff Economic Studies 100 (Board of Governors of the Federal Reserve System, December 1978).

¹³Monetary control over a particular aggregate is further enhanced the more similar and higher the reserve requirement ratios are against the various deposits included in the aggregate, assuming a reserves operating target.