The New Aggregates, Economic Activity, and Monetary Policy [1]

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For a number of decades, economists have questioned traditional distinctions between money and other liquid assets and between commercial banks and other financial intermediaries. Over time these distinctions have become increasingly blurred. Yet there are fundamental differences in regulatory treatment of commercial banks and other financial intermediaries.

The high market rates of interest in the 1970s have created strong incentives for holders of money balances to economize on demand deposits and for the creation of money-like, interest-bearing instruments. Many of these instruments are offered by competing intermediaries operating outside the regulations governing commercial banks. As a result, a number of financial instruments (both new and existing) have been added to the variety of money-like assets available in the marketplace. Examples of these include automatic-transfer savings (ATS), credit-union share drafts, negotiable orders of withdrawal (NOWs), and money-market mutual funds (MMFs).

Although financial innovations and more efficient cash management have expanded the investment opportunities available to the public, they pose problems for policymakers. Since 1970, monetary policy has been formulated in terms of money-supply growth rates thought to be consistent with ultimate goals of economic policy (for example, growth in output and employment and reduced inflation). Using targets for money growth to guide policy action presumes a dependable relationship between measures of money and ultimate policy objectives. Substitution of new forms of monetary assets for existing ones has changed the historical relationship between the policy objectives and the various monetary aggregates, which, as previously defined, did not include the new assets. Improved cash-management practices, resulting from advanced technology and greater incentives

to implement this technology, also have distorted this relationship.

Aggregates as Measures of Money

Although the concept of money is familiar to everyone, it is difficult to define. Perhaps the most widely used definition of money is *anything generally accepted as a medium of exchange*. A broader concept, also popular but one that implies more than one function, defines money as *anything that serves as a temporary abode for purchasing power*. No definition claims universal acceptance; consequently, any definition of money is somewhat arbitrary.

Traditionally, the two criteria—medium of exchange and temporary abode of purchasing power—have been associated with M-1 and M-2, the two most widely used money-supply measures. As previously defined, M-1 included currency and demand deposits held by the nonbank public (see table 1). Until the advent of the new payments-related instruments, M-1 was a fairly comprehensive measure of transactions balances. M-2, as previously defined, included M-1 and time and savings deposits at commercial banks, except for negotiable CDs at large banks. While not as widely used as M-2, the M-3, M-4, and M-5 aggregates provided progressively broader measures of money. The proliferation of monetary aggregates during the past decade reflects the ongoing measurement problems, both conceptual and empirical.

As previously defined, M-1 and M-2 were distinguished by the fact that their noncurrency components were limited to deposit liabilities of commercial banks. As long as banks were the only financial institutions offering checkable accounts, M-1 was consistent with the means of payment criterion.[2] Although thrifts long have offered deposit instruments quite similar to certain types of bank deposits in M-2, these instruments were treated conceptually as being less money-like. However, as the distinctions between thrifts and commercial banks have blurred, so have the

distinctions between many of their deposits, particularly time and savings deposits.

Beginning in the 1970s, nonbank financial intermediaries began to offer various interest-bearing instruments with check-writing features—NOWs, share drafts, MMF shares, and, at some thrifts, ATS accounts. Some of the instruments gained wide acceptance and use as substitute means of payment for demand deposits, which are by law prohibited from bearing interest.[3] In addition, interest-rate ceilings have made time and savings deposits less attractive relative to unrestricted alternatives currently bearing high market rates of interest. High interest rates have greatly weakened the competitive position of banks as suppliers of monetary assets. In many instances, the nonbank competitors are not required to hold as high

Table 1 Components of Monetary Aggregates

Previously Defined Aggregates		New Aggregates	
M-1:	Currency held by nonbank public	**M-1A:**	Previously defined M-1
+	demand deposits at all commercial banks, held by nonbank public	−	demand deposits of foreign commercial banks and official institutions
M-2:	Previously defined M-1	**M-1B:**	M-1A
+	savings deposits at commercial banks	+	other checkable deposits (NOWs, ATS, share drafts, and demand deposits at thrifts)
+	time deposits at commercial banks other than negotiable CDs at large banks	**M-2:**	M-1B
		+	noncheckable savings and small time deposits at all depository institutions
M-3:	Previously defined M-2	+	overnight RPs at commercial banks
+	nonbank thrift institution deposits (savings and time deposits)	+	overnight Eurodollars at Caribbean branches
		+	money-market mutual fund shares
M-4:	Previously defined M-2	**M-3:**	New M-2
+	negotiable CDs (greater than $100,000) at large commercial banks	+	large-denomination time deposits at all depository institutions
		+	term RPs at commercial banks and S&Ls
M-5:	Previously defined M-3		
+	negotiable CDs at large commercial banks	**L:**	New M-3
		+	other liquid assets (term Eurodollars, bankers acceptances, commercial paper, liquid Treasury obligations, savings bonds)

SOURCE: "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, vol. 66 (February 1980).

levels of reserves against these deposits, thus adding further to the incentives to divert funds outside of the traditional channels.

The design of the new aggregates attempts to redress the implications of this problem (see description in box). Because M-1B includes all checkable deposits regardless of the issuing institution, it is a more comprehensive measure of transactions balances.[4] M-2 now includes time and savings deposits of thrift institutions; furthermore, it includes very liquid nondeposit items—specifically MMF shares, overnight RPs, and overnight Eurodollars at Caribbean branches.

Money Measures and Economic Activity

There are additional considerations in choosing a measure of money. If money is to be a useful target for monetary policy, it

must be observable on a timely basis and subject to control by the monetary authority. More importantly, the measure must have a stable and predictable relationship with ultimate policy objectives. This relationship can be summarized in a simplified way by the ratio of GNP to money stock, a concept known as the income velocity of money. In recent years, the velocities of previously defined M-1 and M-2 have increased sharply (see charts 1 and 2); that is, income (GNP) has risen much more rapidly than money as measured and more rapidly than past experience would suggest. The deterioration in the money-income relationship may be caused by many factors, but two stand out: rapid substitution of new instruments for demand and savings deposits and the adoption of new cash-management techniques.

The widespread substitution of checkable alternatives for demand deposits has depressed the growth rates of commercial-bank demand deposits (and hence previously defined M-1) relative to income. The velocity growth of M-1A, which also excludes checkable alternatives, is not significantly different from that of M-1. However, the velocity growth of M-1B, which includes the alternatives, is somewhat slower, especially since 1975 (see chart 1). This reflects, in

part, substitution from demand deposits to the new instruments in M-1B.

Although velocity growth of M-1B is somewhat slower than that of M-1A, it has been, nevertheless, rapid since mid-1974 and can be attributed largely to the adoption of cash-management techniques. Corporations, in a formal sense at least, do not have the interest-bearing, checkable-deposit opportunities available to individuals. Hence, in periods of high-interest rates, corporations have strong incentives to economize on noninterest-bearing transactions balances. Developments in cash-management technology, however, have enabled firms to minimize their demand-deposit holdings. Overnight RPs and MMF shares are very liquid investment media that are particularly well-suited to absorb, temporarily, excess corporate money balances. Growth in these buffer-like assets, together with new deposit instruments, has mirrored the shortfall in M-1 growth relative to what was expected, based on estimated demand relationships.[5]

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1. For a more thorough discussion of the new monetary aggregates, see "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, vol. 66 (February 1980); and Henry C. Wallich and Warren T. Trepeta, "The Redefinition of the Official Monetary Aggregates," *Case Western Reserve Journal of International Law*, forthcoming in vol. 12, no.2 (Spring 1980).

2. None of the previously defined aggregates included demand deposits at mutual savings banks. Prior to 1970, these holdings totaled less than $100 million. The current total is roughly $1 billion or 0.4 percent of demand deposits at commercial banks.

3. On November 1, 1978, the Federal Reserve permitted commercial banks to offer to individuals ATS accounts, allowing these customers to earn interest on balances normally held as demand deposits. In April 1979 an appeals court ruled these accounts illegal. However, temporary authority has been extended pending enactment of the requisite legislation.

4. Some economists argued that the narrower measures should also include both MMF shares and overnight RPs. See John Wenninger and Charles M. Sivesind, "Defining Money for a Changing Financial System," *Quarterly Review*, vol. 4 (Spring 1979), pp. 1-8.

5. See Wenninger and Sivesind, "Defining Money for a Changing Financial System." The authors acknowledge that this mirrored shortfall is, to some extent, fortuitous in that some of these funds came from sources other than demand deposits.

Chart 1   Velocities of New and Previous M-1 Measures
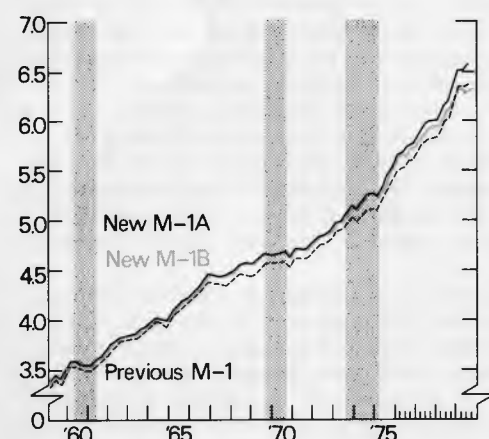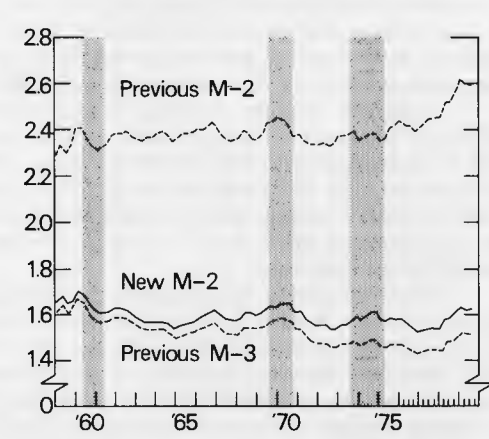Quarterly; saar

Chart 2   Velocities of New M-2 and Previous M-2 and M-3 Measures
Quarterly; saar

NOTE: Shaded areas designate periods of recession.
SOURCE: "The Redefined Monetary Aggregates," *Federal Reserve Bulletin,* vol. 66 (February 1980).

Table 2   Trend and Cyclical Behavior of Velocities of New and Old Measures of Money
Average annual rates of growth in percent

Period	New M-1A	New M-1B	Old M-1	New M-2	Old M-2	Old M-3	New M-3	Old M-4	Old M-5
1960–1969	2.9	2.9	2.9	-0.2	0.4	-0.3	-0.6	0.1	-0.5
1970–1979	3.6	3.1	3.5	0.0	0.6	-0.3	-1.1	0.0	-0.7
Peak to trough [a]									
1960:2–1961:1	-1.7	-1.7	-1.7	-6.3	-5.3	-6.8	-6.7	-5.5	-6.9
1969:4–1970:4	-0.3	-0.3	-0.3	-1.2	-2.6	-2.5	-4.1	-5.2	-4.3
1973:4–1975:1	1.5	1.4	1.3	-0.5	-1.5	-1.4	-2.4	-3.9	-3.0
Trough to peak [b]									
1961:1–1969:4	3.1	3.1	3.1	0.1	0.6	0.0	-0.2	0.3	-0.2
1970:4–1973:4	3.6	3.5	3.5	-0.4	0.3	-1.0	-2.4	-1.4	-2.0
1975:1–1979:4 [c]	4.9	4.1	4.9	0.6	2.1	0.9	0.6	3.0	1.5

a. Averages of annualized quarter-to-quarter rates of growth. The base quarter for each calculation is the quarter following the peak (peak is first quarter shown).
b. Averages of annualized quarter-to-quarter rates of growth. The base quarter for each calculation is the quarter following the trough (trough is first quarter shown).
c. Data for 1979:4 are most recent quarterly data available; this quarter may not be a cyclical peak.

SOURCE: "The Redefined Monetary Aggregates," *Federal Reserve Bulletin,* vol. 66 (February 1980).

ECONOMIC COMMENTARY

In this issue:

The New Aggregates, Economic Activity, and Monetary Policy

On February 7, 1980, the Board of Governors announced that it adopted redefined measures of the monetary aggregates. This **Economic Commentary** *describes the new aggregates and their historical relationships with GNP and reports proposed growth ranges for the measures for 1980.*

The velocity of new M-2 has shown virtually no trend over the last decade. The time path of new M-2 velocity closely resembles that of previous M-3 (see chart 2). In contrast, the velocity of previous M-2 has accelerated sharply since 1975, after drifting up very slowly over two decades. The recent rapid growth in velocity of previous M-2 is partly a consequence of the same factors affecting the narrower measures, that is, improved cash management. The more recent acceleration has been attributed to the weakened competitive position of banks, resulting in part from rising interest rates. Because most time and savings deposits are subject to interest-rate ceilings under Regulation Q, these deposits have become less attractive to higher-yielding liquid instruments not included in previous M-2, particularly MMFs.[6] Substitution of alternative instruments for commercial-bank deposits has depressed M-2 growth relative to income.

Although the velocity of new M-3 has increased slightly during the last expansion, it has trended downward over the past 20 years (see table 2). This trend may reflect an increased use of negotiable CDs and term RPs as investment assets. As interest rates have trended upward, these short-term instruments appear to have become relatively more attractive than other investment opportunities, especially to large corporations.

6. For a more detailed description of MMFs, see J.B. Carlson, "Money Market Funds and the Implications of Their Rapid Growth," *Economic Commentary,* Federal Reserve Bank of Cleveland, July 23, 1979.

Monetary Policy and the New Aggregates

The Humphrey-Hawkins Act of 1978 requires the Federal Reserve to report to Congress the annual growth ranges of money and credit for the coming year. These ranges are chosen by the Federal Open Market Committee (FOMC) to be consistent with its ultimate policy objectives. In February 1980 the Federal Reserve presented the money-growth targets in the form of the new aggregates.[7] These growth targets assume that nationwide NOW accounts will not be authorized this year.

The targets manifest the Federal Reserve's intention to seek a significant deceleration in the growth of money. For M-1A, the FOMC established a target range of 3.5 to 6.0 percent (QIV '79 to QIV '80). The midpoint of this range is 4.8 percent, below the 5.5 percent growth observed last year. This target range assumes a slowdown in 1980 in the substitution of checkable alternatives for demand deposits. In addition, a downturn in economic activity also is expected to slow M-1A velocity growth. Thus, a deceleration in M-1A growth may be associated with an even sharper deceleration in nominal-income growth.

The target range of M-1B is 4 to 6.5 percent for 1980. Its midpoint of 5.3 percent is markedly below the 7.3 percent expansion observed in 1979. M-1B is expected to grow

7. For a detailed description of the growth targets, see *Monetary Policy Report to Congress* (Board of Governors of the Federal Reserve System, February 19, 1980). This section summarizes that report.

marginally faster than M-1A, reflecting continued substitution of interest-bearing transactions accounts for demand deposits and ordinary savings accounts, but at a much slower pace than in 1979. Passage of legislation permitting nationwide NOW accounts would be expected to result in an acceleration of M-1B growth relative to that of M-1A and thus would necessitate reconsideration of the established growth ranges.

The target ranges for new M-2 and M-3 are 6 to 9 percent and 6.5 to 9.5 percent, respectively. The absence of trend in the velocity of new M-2 over the past two decades suggests that its behavior was not noticeably affected by the changing financial institutions. Historically, however, new M-2 velocity has declined during downturns in economic activity. Thus, the 7.5 percent midpoint of the new M-2 target range represents a significant slowdown from 8.8 percent in 1979. The 8 percent midpoint of the M-3 range is well below the 9.5 percent growth observed last year. This measure is believed to be closely associated with credit; hence, deceleration in M-3 may be associated with a moderation in credit for 1980.

Summary and Conclusions

Until recently, banks had a unique status among financial intermediaries in that they were the sole purveyors of checkable deposits. Furthermore, other bank deposits were considered closer substitutes for demand deposits than the instruments of other depositories. Restricting noncurrency components of M-1 and M-2 to deposits of

commercial banks was consistent both conceptually and pragmatically. Since 1970 especially, regulatory change, market forces, and financial innovation have produced a proliferation of new money-like instruments.

The redefinition of the aggregates is a pragmatic effort to reconstruct money-supply measures to incorporate the new instruments. The design of the new aggregates was guided by both conceptual and empirical criteria. The M-1B aggregate, for example, offers a comprehensive measure of a transactions money. Although it is expected to have a more predictable relationship with economic activity than other less comprehensive measures, M-1B behavior will not be impervious to future financial developments. Policymakers must continue to anticipate these changes and assess their impact when establishing appropriate growth targets of both M-1A and M-1B. The new M-2 aggregate is more consistent with the concept of money defined as a temporary abode of purchasing power. Although its relationship to income is less well understood than narrower measures, in practice it appears to have been less affected by financial developments.

The prohibition of interest payments on demand deposits and interest-rate ceilings on other depositary liabilities make these instruments less attractive than similar assets yielding market rates of interest. As long as regulations remain that enhance incentives for financial innovation, new monetary instruments may be created, especially during periods of high market rates of interest. Thus, further redefinition may prove desirable.