ECONOMIC COMMENTARY

M1A — M.I.A.?

by William T. Gavin
and Michael R. Pakko

Chart 1 Velocity of M1 and M1A

SOURCES: Board of Governors of the Federal Reserve System; and U.S. Department of Commerce.

Table 1 The Composition of M1 and M1A

	Levels in Dec. 1986*
Currency and Traveler's Checks	$189.9
+ Demand Deposits	308.3
= **M1A**	**498.2**
+ Other Checkable Deposits	232.3
= **M1**	**730.5**

*Billions of dollars, seasonally adjusted.
SOURCE: Board of Governors of the Federal Reserve System.

For many years, monetary policy has been implemented largely through the pursuit of monetary aggregate targets. The Federal Open Market Committee (FOMC), the policymaking arm of the Federal Reserve System, sets target ranges for the growth of various monetary aggregates, which are intended to be consistent with the broader objectives of policy.

While the Federal Reserve has maintained the need for multiple monetary targets, business and research economists have considered the M1 aggregate to be the most important of these various monetary targets. The Federal Reserve did not set a target range for M1 in 1987, however, citing "uncertainties about its underlying relationship to the behavior of the economy and its sensitivity to a variety of economic and financial circumstances ...."[1]

The uncertainty about M1's behavior is often described in terms of a breakdown in the growth trend of its *velocity*—the ratio of nominal GNP to M1 (see chart 1). M1 velocity rose at roughly a 3 percent annual rate for most of the post-World War II era, fluctuating slightly in response to changes in nominal interest rates. Since 1982, however, the velocity of M1 has shown much greater volatility and has, on average, *declined* at a 3.2 percent annual rate.

In light of M1's weakened status, economists inside and outside the Federal Reserve System have searched for an alternative policy target. One proposed solution is for the Federal Reserve to target an aggregate that would exclude interest-bearing checking accounts from the present definition of M1 (see table 1). The Federal Reserve reported statistics for this monetary measure from 1980 until 1983, referring to it as M1A.[2]

From 1982 through 1984, the velocity of M1A seemed to follow a growth trend similar to that which had previously characterized M1 velocity, providing support for the idea of an M1A target. During 1985 and 1986, however, M1 and M1A each grew much faster than expected given the rates of inflation and economic growth, resulting in unanticipated velocity declines for both measures. Despite this departure, support for greater reliance on M1A in the conduct of monetary policy has persisted.[3] In this *Economic Commentary*, we examine the behavior of M1 and M1A in the 1980s and discuss some issues relevant to the possibility of replacing M1 with M1A.

Most analysts who question the use of M1 as a policy target have focused on the contamination of M1 by savings-related balances in interest-bearing checking accounts. However, we suggest that the characteristics of demand deposits have also been altered by deregulation; specifically, that demand deposits are now dominated by commercial accounts. All else being equal, this change would tend to raise the growth rate of M1A velocity above that of pre-deregulation M1.

The similarity of M1A velocity growth in the 1980s to pre-1980 M1 velocity growth may, therefore, reflect a coincidence of offsetting influences. Thus,

William T. Gavin is an economic advisor at the Federal Reserve Bank of Cleveland, currently on leave of absence at the U.S. Department of State. Michael R. Pakko is an economic analyst at the Federal Reserve Bank of Cleveland.

The views stated herein are those of the authors and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

1. See "Monetary Policy Report to Congress," *Federal Reserve Bulletin*, vol. 73, no. 4 (April 1987), pp. 239-254.

2. See Thomas D. Simpson, "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, vol. 66, no. 2 (February 1980), pp. 97-114.

3. See John Paulus, "Monetarism: If It Ain't Broke, Don't Fix It," *Economic Perspectives*, Morgan Stanley, May 7, 1986, pp. 1-9; and more recently, Michael R. Darby, Angelo R. Mascaro, and Michael L. Marlow, "The Empirical Reliability of Monetary Aggregates as Indicators: 1983-1986," Research Paper No. 8701, U.S. Department of the Treasury, 1987.
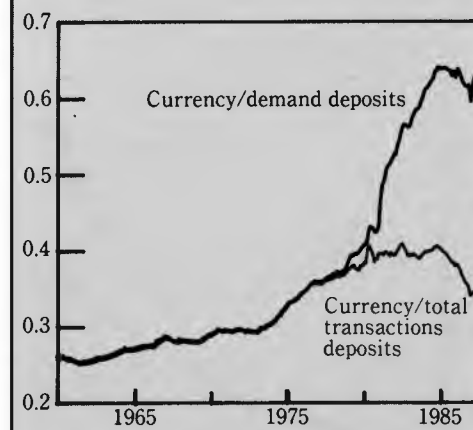

Chart 5 Currency/Deposit Ratios

SOURCE: Board of Governors of the Federal Reserve System.

shift as the deposit measure increases (and vice versa).

Chart 5 shows currency/deposit ratios for demand deposits and total transactions deposits. Like the turnover rates in chart 4, a striking feature of chart 5 is that total transactions deposits appear to be behaving more like pre-deregulation demand deposits than do demand deposits themselves.

The ratio of currency to demand deposits shows a protracted rise, which begins at about the same time as the introduction of NOW accounts, but

which goes far beyond the period usually identified with initial flows from demand deposits to OCDs.

Putting this evidence together, an interesting possibility emerges. As households switched transactions accounts from regular demand deposits to the new interest-bearing type, the demand deposits component was transformed. Both the turnover rates and currency/deposit ratios suggest that demand deposit behavior has changed dramatically since deregulation.

Within this scenario, we would expect to see the velocity of M1A rising faster during the early 1980s than did M1 velocity before deregulation. But, as noted earlier, the rate of M1A velocity growth from 1982 through 1984 was roughly comparable to that of pre-deregulation M1. This corresponds with the period in which the velocity of M1 was experiencing sharp declines. It seems possible that the relative stability of M1A velocity in the early 1980s merely reflected a coincidence of offsetting forces on the rate of velocity growth. While the changing composition of demand deposits would have tended to raise the average growth rate of M1A velocity through higher turnover rates, this tendency was offset by the velocity-depressing effects of disinflation. Thus, it is not the composition of transactions deposits that matters most, but the relationship of those deposits to nominal GNP.

Conclusion

In 1981, the nationwide introduction of NOW accounts caused a large shift of funds from demand deposits to OCDs, distorting the measured growth rates of both M1 and M1A. Since then, no other regulatory changes have had such distortive effects. Nevertheless, the velocity of M1 has departed from its previous growth trend to such an extent that the FOMC chose not to set an explicit target for M1 in 1987.

The apparent stability of M1A's velocity from 1982 through 1984 led some observers to suggest that this narrower measure of transactions money could be substituted for M1 as a target. However, data on demand deposit ownership shares, turnover rates, and currency/deposit ratios suggest that the observed stability of M1A's velocity in the early 1980s may represent a coincidence of offsetting forces.
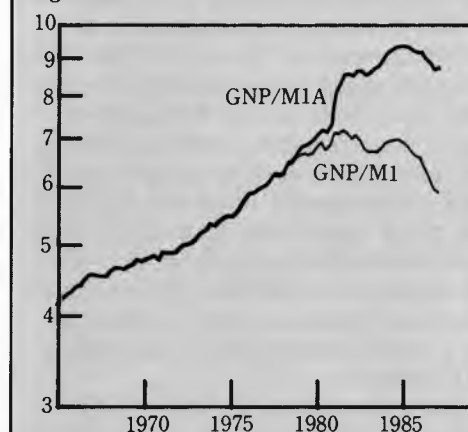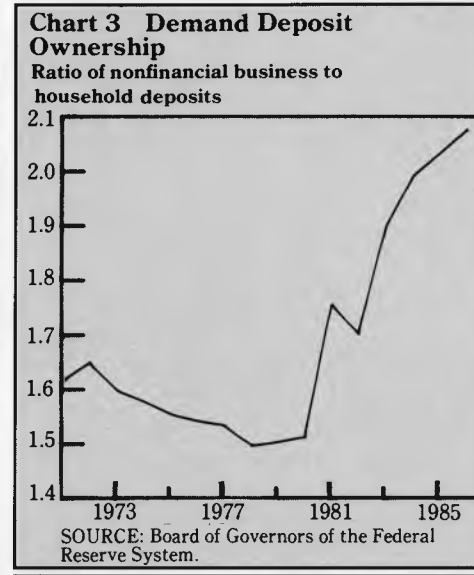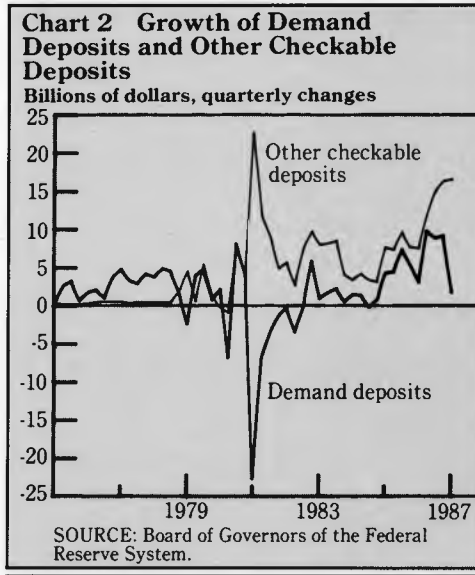
In the long run, the behavior of M1A velocity could be expected to be quite different from that of M1 prior to the 1980s. The same factors that have affected M1's behavior have also affected M1A, diminishing its usefulness as a potential policy target. The recent decline in M1A velocity provides preliminary evidence that its velocity may not, in fact, follow a growth pattern as predictable as M1's previous velocity trend.

Chart 2 Growth of Demand Deposits and Other Checkable Deposits

Billions of dollars, quarterly changes

SOURCE: Board of Governors of the Federal Reserve System.

Chart 3 Demand Deposit Ownership

Ratio of nonfinancial business to household deposits

SOURCE: Board of Governors of the Federal Reserve System.

Chart 4 Deposit Turnover Rates

Gross Turnover Rates

Final Sales Turnover Rates

SOURCE: Board of Governors of the Federal Reserve System.

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the source of the declines in M1A velocity in 1985 and 1986 is likely to be the same as for the earlier breakdown in M1's velocity: a fundamental realignment of the relationship between transactions deposits and nominal GNP in the new disinflationary environment.

M1 vs. M1A

M1 was previously considered the most important of the monetary targets for a variety of reasons. For many analysts, M1 was preferable on theoretical grounds, as the Federal Reserve's attempt to construct a comprehensive measure of assets that were held primarily for transactions. To others, M1 seemed to be the most controllable of the targeted aggregates. Finally, many economists preferred M1 because it seemed to be most predictably related to economic activity.

Since the deregulation of deposit rates in the early 1980s, it is increasingly difficult to argue that M1 represents a theoretically pure measure of transactions balances. It appears likely that at least a portion of the funds in new interest-bearing transactions accounts represent savings. Furthermore, many money market funds and accounts allow limited check-drafting privileges, making it probable that some transactions-related funds are in these non-M1 instruments.

Proponents of M1A as a policy target

have not generally claimed that M1A provides a comprehensive measure of transactions money, but that it is preferable to M1 because it excludes accounts contaminated by savings balances. Furthermore, because M1A is a subset of the relatively controllable M1, it might also be more controllable than either the broader aggregates or proposed weighted-average aggregates.

The most important rationale for an M1A target, though, is that its relationship to economic activity seems to have changed less than that of M1. However, recent declines in M1A velocity indicate that M1A is not as immune to velocity instability as the 1982 to 1984 experience suggested. If we are to consider M1A as a policy guidepost, it is important that we understand what has happened to the growth patterns of transactions deposits—interest-bearing and non-interest-bearing—in this era of deregulation and disinflation.

Deposit Rate Deregulation

The proposal to replace M1 with M1A may be appropriate if the deregulation of deposit-rate ceilings underlies the breakdown in M1 velocity. One of the important, and easily distinguishable, effects of deregulation has involved the flow of funds into newly authorized types of accounts. In fact, this type of distortion was behind the FOMC's 1982 decision to de-emphasize the M1 target temporarily.[4]

The element of deposit deregulation most relevant to M1 was the introduction of negotiable orders of withdrawal (NOW) accounts and automatic transfer services (ATS) accounts. These interest-bearing checking accounts—referred to as other checkable deposits or OCDs—were introduced on an experimental basis in Massachusetts and New Hampshire in 1974. OCDs spread to the rest of New England in 1976, to New York in 1978, and to New Jersey in 1979. They became available nationwide in 1981. While the behavior of M1 was measurably affected by early, limited introduction of NOW accounts, the effect on M1 velocity was not outside the range of uncertainty normally associated with velocity forecasts.

The nationwide authorization of NOW accounts at the end of 1980, however, triggered large transfers of funds into the new accounts. Although evidence suggests that a complex pattern of flows among various account types took place, chart 2 illustrates that the net effect was a large transfer of funds from demand deposits to OCDs.[5] This phenomenon is reflected in the velocity measures shown in chart 1 primarily as a sharp upward shift in the level of M1A velocity.

The introduction of Super-NOW accounts in 1983 and the elimination of rate ceilings and minimum balance requirements in 1986 did not seem to cause the same type of initial net deposit flows observed for the nationwide introduction of NOW accounts. One important reason may be simply that the ceilings had become nonbinding before they were eliminated. That is, rates were already below the maximum, so the elimination of that constraint did not result in deposit rate increases that would have attracted new funds.

Regardless of their initial effects, the new regulations have affected how people manage their savings and transactions balances. OCD growth has proved to be higher and more variable than demand deposit growth, past or present, given rates of economic growth and inflation.

Because the major difference in the two types of transactions accounts is the explicit interest rates paid on OCDs, it is often concluded that OCDs are unlike demand deposits because they have characteristics of savings accounts. To the extent this is true, an M1A aggregate might, in fact, represent a truer measure of the transactions role of money than M1.

Inflation

M1A may not resolve the problem with the monetary targeting process, however, if the drop in M1 velocity can be traced to recent disinflation, which has led to a prolonged and substantial drop in interest rates. The new interest-bearing transactions accounts would be expected to show a more pronounced response to the large changes in nominal interest rates, but the opportunity costs of all financial assets—including demand deposits—should be affected.

Between 1947 and 1979, the average level of inflation and interest rates doubled about every decade. As interest rates rose, both households and businesses looked for ways to reduce the relative amount of funds held in non-interest-bearing accounts. This behavior is reflected in the steadily rising velocity of M1.

As inflation and interest rates fell beginning in 1982, M1 generally grew more rapidly than expected. The incremental deregulation of deposit ceilings and somewhat sluggish response of the new floating-rate accounts resulted in gradual shifts into some of the newer accounts; but as interest rates continued to decline, the spread between rates paid on transactions deposits and alternative savings instruments narrowed.

This situation has reduced the incentive for careful economizing on transactions balances. As interest rates—and thus the opportunity cost of holding OCDs—have continued to fall, more and more people have changed banking habits; passbook accounts have been closed, and ever-larger balances have been allowed to accumulate in OCDs. If this accumulation in interest-bearing OCDs was the only source of M1 velocity declines, however, we would not expect non-interest-bearing demand deposits to follow the same pattern.

Hence, the declines in M1A velocity during 1985 and 1986 suggest that at least part of the upward trend in M1 velocity from 1947 to 1979 was related to the upward trend in inflation and interest rates. In the new period of declining interest rates, the impact of interest rate trends on demand deposits—and money demand in general—has been more clearly revealed.

The Changing Composition of M1A

The M1A velocity declines of 1985 and 1986 would seem to negate the assumption that the "purer" M1A aggregate can adequately fill the role that M1

once had as a policy target. Rather, an explanation that includes the effects of disinflation on the opportunity costs of financial assets seems necessary to explain the velocity behavior of both aggregates. This point becomes even more apparent when one considers how deregulation has altered the composition and characteristics of M1A.

Because OCDs can be owned by households but not by businesses, demand deposits have become increasingly dominated by business accounts. Chart 3 illustrates the stark change in the composition of demand deposits. After declining gradually through the 1970s, the ratio of business to household demand deposits has risen sharply since 1980.

Businesses tend to manage their transactions accounts much more intensively than do most households, so the increase in the share of demand deposits held by businesses has been reflected in a rise in the average turnover rate of demand deposits. This, in turn, affects the nature of M1A's behavior and will probably affect the velocity trend of M1A.

The turnover rate of an account is conceptually similar to velocity because it defines the relative intensity with which a particular type of account is used. As would be expected from the above discussion, the turnover rates compared in the upper panel of chart 4 show that an increase in the growth rate of regular demand-deposit turnover (as in M1A) has accompanied the change in ownership composition. Interestingly, though, the average turnover rate of total transactions deposits (as in M1) appears to have increased at roughly the same trend rate of growth as during the 1970s.

However, the turnover rates in the upper panel of chart 4 represent the use of deposits in ways unrelated to GNP, including intermediate and financial transactions. The lower panel of chart 4 shows turnover measures adjusted to reflect only transactions associated with final sales.[6] With this adjustment, sharp declines are evident for both demand deposits and total transactions deposits, although demand-deposit turnover remains higher than OCD turnover. After the adjustment has been made to turnover rates, neither the demand deposits measure nor the total transactions deposits measure appears very similar to the demand deposit component of M1 before 1980.
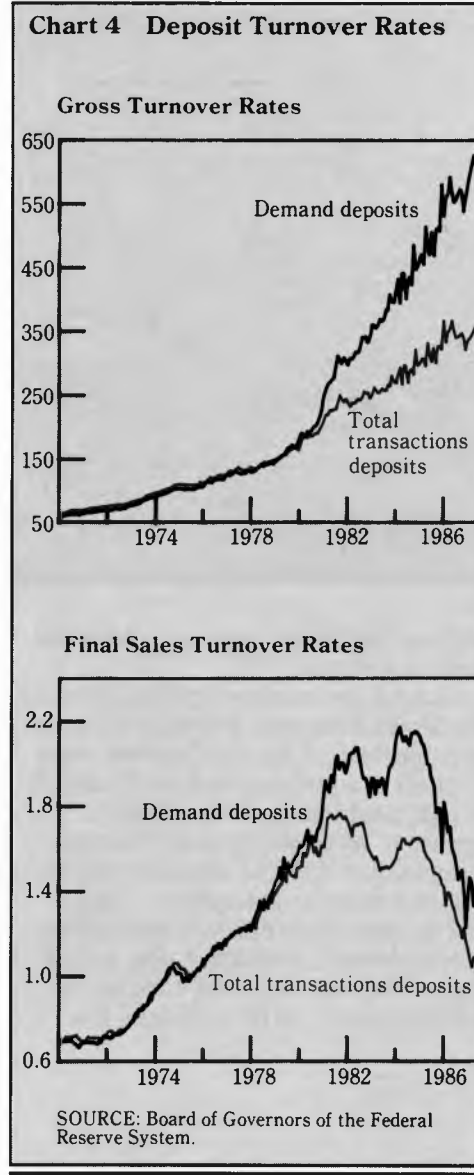
Similar evidence on the effects of M1A's compositional change can be seen in ratios of currency to deposits. The currency/deposit ratio is important because it reflects the relative usefulness of financial assets for financing transactions. Currency is primarily—if not exclusively—a transactions asset, so a stable trend in the currency/deposit ratio might indicate that the relative usefulness of the deposit measure was unchanged. On the other hand, if an increasing proportion of deposits are held for reasons unrelated to their usefulness as transactions, then the currency ratio should show a downward

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4. See "Remarks on Monetary Policy" by Paul A. Volcker in the *Federal Reserve Bulletin*, vol. 68, no. 11 (November 1982), pp. 691-692.

5. For a detailed analysis of the flows among alternative accounts, see Thomas D. Simpson and John R. Williams, "Recent Revisions in the Money Stock," *Federal Reserve Bulletin*, vol. 67,

no. 7 (July 1981), pp. 539-544. An alternative view can be found in John A. Tatom, "Recent Financial Innovations: Have They Distorted the Meaning of M1?" *Review*, Federal Reserve Bank of St. Louis, vol. 64, no. 4 (April 1982), pp. 23-32.

6. The adjusted turnover rates shown in the lower panel of chart 4 are derived in Appendix C of David E. Lindsey and Paul Spindt, "An Evaluation of Monetary Indexes," Special Studies Paper 195, Board of Governors of the Federal Reserve System.