

Monetary aggregates redefined

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The Board of Governors has adopted four new money stock measures, plus a broad measure of liquid assets.¹ The following are now being used in the conduct of monetary policy.

- M-1A—Currency plus demand deposits at commercial banks, exclusive of demand deposits held by other domestic banks, foreign banks and official institutions, and the U.S. government.

- M-1B—New M-1A plus other checkable deposits, including NOW and ATS accounts at commercial banks and thrift institutions, credit union share draft accounts, and demand deposits at mutual savings banks.

- M-2—New M-1B plus savings and small-denomination time deposits at all depository institutions, overnight repurchase agreements (RPs) at commercial banks, overnight Eurodollars held by U.S. residents other than banks at Caribbean branches of member banks, and money market mutual fund shares.

- M-3—New M-2 plus large-denomination time deposits at all depository institutions and term RPs at commercial banks and savings and loan associations. Large time deposits are those in denominations of \$100,000 or more.

- L—New M-3 plus other liquid assets, including term Eurodollars held by U.S. residents other than banks, bankers' acceptances, commercial paper, Treasury bills and other liquid Treasury obligations, and U.S. savings bonds.

These measures replace five old measures that were losing their significance:

- M-1—Currency plus demand deposits at commercial banks other than deposits of other domestic banks and the U.S. Treasury,

but including demand deposits held by foreign banks and official institutions.

- M-2—Old M-1 plus savings and time deposits at commercial banks other than large negotiable CDs of weekly reporting banks.

- M-3—Old M-2 plus savings and time deposits at mutual savings banks, savings and loan associations, and credit unions.

- M-4—Old M-2 plus large negotiable CDs of weekly reporting banks.

- M-5—Old M-3 plus large negotiable CDs of weekly reporting banks.

Comparison of the aggregates—old and new

The new M-1A and M-1B are both narrow transactions measures of money. The new M-1A is essentially the same as the old M-1, the difference being that M-1A excludes demand deposits held by foreign banks and official institutions at commercial banks. The new M-1B is a broader measure than either M-1A or the old M-1. It includes M-1A plus other checkable deposits at all depository institutions—commercial banks and thrift institutions.

New M-2 is closer to old M-3 than old M-2. It differs from both by including money market mutual fund shares, overnight RPs, and certain overnight Eurodollars, none of which was in any of the old monetary aggregates. It also differs from old M-2 by excluding all commercial bank large time deposits. And it differs from old M-3 by excluding all large time deposits at both commercial banks and thrift institutions.

By including all large-denomination time deposits at both commercial banks and thrift institutions, the new M-3 is more like old M-5 than old M-4, which included only commercial bank deposits. Because new M-3 also

¹A more detailed description of the redefinition appears in "The Redefined Monetary Aggregates," *Federal Reserve Bulletin*, Vol. 66 (February 1980), pp. 97-114.

Monetary aggregate growth—old versus new measures

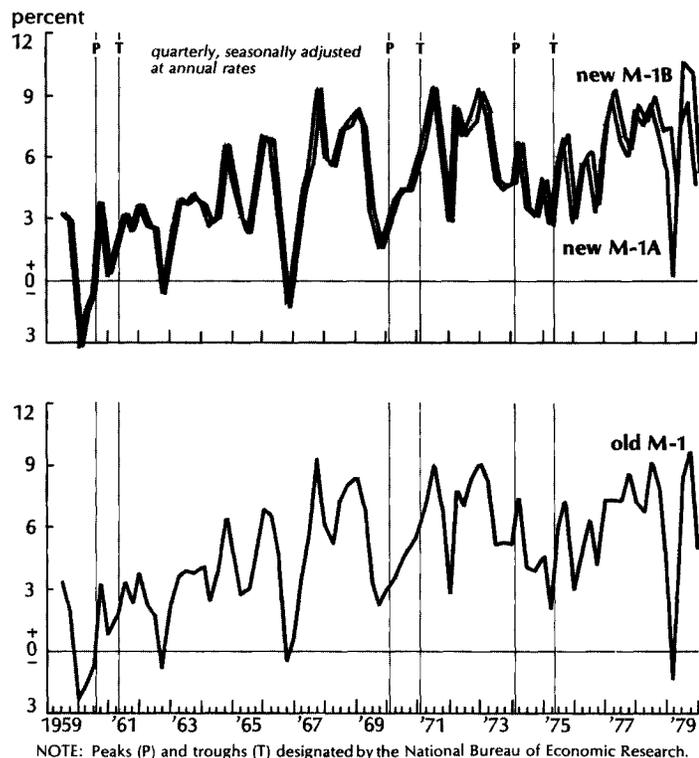
Growth rates in the transactions aggregates, whether old M-1 or new M-1A or M-1B, have been similar over the past 20 years. Growth in M-1A and M-1B was almost the same until 1976. More recently, with the increase in NOW and ATS accounts, M-1B has risen faster than either M-1A or old M-1. If NOW accounts were authorized nationwide, deviation in M-1A and M-1B growth would be likely for some time.

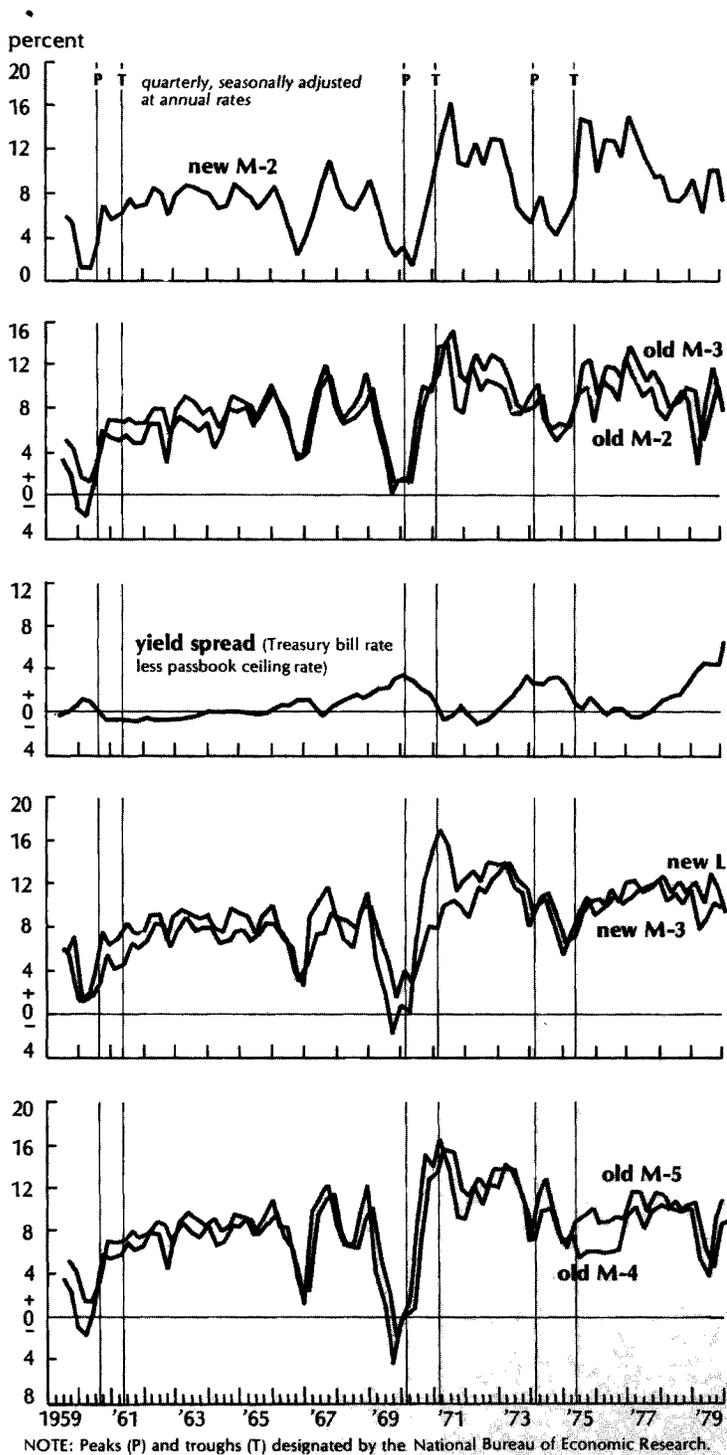
Growth in new M-2 has tended to vary with old M-3 and to some extent with old M-2. Growth in all three measures has been sensitive to the spread between the Treasury bill rate and the passbook savings ceiling rate, tending to slow as market rates rose above deposit ceiling rates. The interest sensitivity of new M-2 can be expected to moderate, however, if the proportion

of this aggregate accounted for by components with yields that vary with money market conditions continues to rise.

The new M-3, although similar to old M-5, has tended to expand somewhat faster than either old M-4 or M-5. This difference widened in the late 1970s with the growth in RPs, money market mutual fund shares, and overnight Eurodollars.

Growth in the broad liquid assets measure, L, has followed about the same pattern as new M-3, but has been somewhat less volatile. Moreover, there has been a tendency in recent years for L to grow faster than new M-3 and other broad measures. This reflects the increasing proportion of liquid assets generated by issuers other than depository institutions.





includes RPs, certain overnight Eurodollar deposits, and money market mutual fund shares, however, it is more inclusive than old M-5.

The new liquid asset measure, L, is even more inclusive. To the new M-3 are added asset holdings that represent short-term liabilities of all depositary institutions, non-financial corporations, and the government. In addition to providing a broad measure of the liquidity of holders, the L measure might be viewed as the aggregate that most closely approximates the volume of credit extended both directly and through financial intermediaries.

To avoid double counting the amounts in these aggregative measures, consolidation adjustments have been made to eliminate holdings by financial intermediaries of the obligations of other intermediaries. For example, the RPs, CDs, and commercial paper held by the money market mutual funds are eliminated in the measures that include both these obligations and the funds' shares.

Reasons for new definitions

Regulatory changes and financial innovations over the past decade have changed the character of the public's monetary assets. With the introduction of NOW and ATS accounts, credit union share drafts, and demand deposits at thrift institutions, the number of financial instruments that can be used in transactions increased, making the old M-1 a less com-

prehensive measure of transactions balances.

Moreover, savings accounts have become more liquid. Among the innovations making it easier for savings accounts to be used in transactions are preauthorized payments from savings accounts and transfers of funds from savings to checking accounts by telephone. Point-of-sale terminals allow S&L customers to withdraw funds from savings accounts and make deposits through terminals at retailers. Businesses and governmental

units can hold savings accounts at banks.

The number of investment alternatives has increased through the development of money market mutual funds, security repurchase agreements, and Eurodollar deposits. Changes in the ceiling rates that can be paid on time and savings deposits and the minimum deposit required for time accounts have opened a variety of alternatives, ranging from floating-rate six-month and 2½-year certificates to fixed rate certificates.

All this—especially with the rise in interest rates—has encouraged the public to reduce its holdings of noninterest-earning demand deposits. And with competition between banks and thrift institutions narrowing (if not eliminating) differences in the deposit services offered, concepts of money that, like old M-1 and M-2, include only commercial bank deposits, were no longer adequate representations of the public's monetary assets.

Criteria for choosing aggregates

The FOMC considers many factors in determining the thrust of monetary policy. Only a few, however, can be focused on in implementing policy. Focus for the past decade has been increasingly on the monetary aggregates, with primary attention given to the old M-1 and M-2 measures. Now, with the aggregates redefined, it is necessary to decide which of the new measures should be given primary

New measures of money and liquid assets		
Aggregate	Components	November 1979 (not seasonally adjusted) (billion dollars)
M-1A	Currency	372.2
	Demand deposits ¹	265.6
M-1B	M-1A	387.9
	Other checkable deposits ²	15.7
M-2		1,510.0
	M-1B	387.9
	Overnight RPs issued by commercial banks	20.3
	Overnight Eurodollar deposits held by U.S. nonbank residents at Caribbean branches of member banks	3.2
	Money market mutual fund shares	40.4
	Savings deposits at all depository institutions	420.0
	Small time deposits at all depository institutions ³	640.8
M-2 consolidation component ⁴	-2.7	
M-3		1,759.1
	M-2	1,510.0
	Large time deposits at all depository institutions ⁵	219.5
	Term RPs issued by commercial banks	21.5
L	Term RPs issued by savings and loan associations	8.2
		2,123.8
	M-3	1,759.1
	Other Eurodollar deposits of U.S. nonbank residents	34.5
	Bankers' acceptances	27.6
	Commercial paper	97.1
Savings bonds	80.0	
Liquid Treasury obligations ⁶	125.4	

NOTE: Components of M-2, M-3, and L measures generally exclude amounts held by domestic depository institutions, foreign commercial banks and official institutions, the U.S. government (including the Federal Reserve), and money market mutual funds. Exceptions are bankers' acceptances and commercial paper for which data sources permit the removal only of amounts held by money market mutual funds and, in the case of bankers' acceptances, amounts held by accepting banks, the Federal Reserve, and the Federal Home Loan Bank System.

¹Net of demand deposits due to foreign commercial banks and official institutions, domestic banks, and the U.S. government.

²Includes NOW, ATS, and credit union share draft balances and demand deposits at thrift institutions.

³Time deposits issued in denominations of less than \$100,000.

⁴In order to avoid double counting of some deposits in M-2, those demand deposits owned by thrift institutions (a component of M-1B) which are estimated to be used for servicing their savings and small time deposit liabilities in M-2 are removed.

⁵Time deposits issued in denominations of \$100,000 or more.

⁶Marketable Treasury obligations with less than 18 months remaining to maturity.

emphasis. This decision has to be based on a combination of criteria—which aggregate is conceptually desirable, closely related to other economic variables the FOMC wants to influence, highly controllable, and measurable on a current basis.

Money is usually defined by the functions it serves—a medium of exchange, a standard of value, a store of value or purchasing power. For policy purposes, money's role as the medium of exchange generally receives the greatest emphasis. But what counts as a medium of exchange is different from when old M-1 was introduced in 1960. Then, M-1 represented nearly all the funds that could be used for transactions. Now, however, assets that serve as money in transactions include not only currency and demand deposits at banks but also NOW and ATS accounts, credit union share drafts, and travelers checks. All these, except travelers checks issued by nonbanks, are included in the new M-1B measure.² Thus, it is a better measure of transactions balances than new M-1A or old M-1.

Other assets come close to serving the transactions function of money. Savings accounts other than NOW and ATS accounts, for example, can be easily converted into transactions balances, often with no more than a phone call. Many money market mutual funds offer check-writing privileges

²Travelers checks of nonbank issuers will be included once data from major nonbank issuers become available on a regular basis. Travelers checks issued by banks are included in all the new and old monetary measures.

Relationship between new and old monetary aggregates

Aggregate and component	November 1979 (not seasonally adjusted) (billion dollars)
Old M-1	382.6
Less demand deposits of foreign commercial banks and official institutions	10.4
Equals: New M-1A¹	372.2
Plus other checkable deposits	15.7
Equals: New M-1B	387.9
Old M-2	945.3
Plus savings and time deposits at thrift institutions	664.2
Equals: Old M-3	1,609.5
Plus overnight RPs and Eurodollars	23.4
Plus money market mutual fund shares	40.4
Plus demand deposits at mutual savings banks ²	1.0
Less large time deposits at all depository institutions in old M-3	151.2
Less demand deposits of foreign commercial banks and official institutions	10.4
Less consolidation component ³	2.7
Equals: New M-2	1,510.0
Plus large time deposits at all depository institutions	219.5
Plus term RPs at commercial banks and savings and loan associations	29.8
Equals: New M-3	1,759.1
Memo:	
Old M-2	945.3
Plus negotiable CDs at large commercial banks	95.9
Equals: Old M-4	1,041.2
Old M-3	1,609.5
Plus negotiable CDs at large commercial banks	95.9
Equals: Old M-5	1,705.4

¹Also includes a very small amount of M-1-type balances at certain U.S. banking offices of foreign banks outside New York City which were not in the old M-1 measure.

²Demand deposits at mutual savings banks were not included in any of the old monetary aggregates.

³Consists of an estimate of demand deposits included in M-1B that are held by thrift institutions for use in servicing their savings and small time deposit liabilities included in new M-2.

although the checks usually have to be fairly large, generally \$500 or more. Commercial bank RPs with customers often represent the investment of demand deposits that are only temporarily idle. This is especially true of overnight and continuing contracts.

These assets are added to M-1B, along with certain overnight Eurodollar deposits and small time deposits at banks and thrift institutions, to arrive at new M-2. But because the added components must usually be converted before they can be used in transactions, new M-2 is not as good a transactions measure of money as M-1B. The same is true for new M-3 and L, both even broader measures than new M-2.

Theoretical choice needs to be validated by empirical evidence. The more stable and

predictable the historical relationship between a monetary aggregate and a goal economic variable such as GNP, the more likely it is that changes in the supply of that aggregate will affect the economy in a predictable way in the future. Moreover, regardless of causation, if changes in a measure of money are similar to changes in GNP, current readings of that measure can provide insight as to what is happening to GNP long before actual GNP data become available. In this regard, several tests conducted at the Federal Reserve Board and Federal Reserve banks suggest a stronger relationship to GNP, on balance, for the new aggregates than for the old measures, especially in recent years. No one of the new measures, however, is better than other new measures in all tests. Such testing is an integral part of ongoing monetary

policy research work, and new evidence produced will have an important influence on the focus of policy implementation in the future.

The various money measures are not equally controllable by the Federal Reserve. The degree of control depends to some extent on operating procedures. If the Federal Reserve uses an interest rate, such as the federal funds rate, as an operating target, control over a particular aggregate depends primarily on the sensitivity of demand for that aggregate to changes in interest rates. If it uses a reserves operating target, such as total or nonborrowed reserves, control over the aggregate tends to be greater if the components of the aggregate are subject to reserve requirements. Under the operating procedure adopted last October, which uses

Annual growth rates—old and new money stock measures
(percent)

Year ¹	Old measures					New measures				
	M-1	M-2	M-3	M-4	M-5	M-1A	M-1B	M-2	M-3	L
1960	0.4	2.6	4.8	2.6	4.8	0.6	0.6	4.6	4.8	3.6
1961	2.8	5.4	7.1	6.5	7.9	2.8	2.8	7.1	7.7	6.2
1962	1.4	5.9	7.7	7.1	8.5	1.8	1.8	8.0	8.8	8.0
1963	4.0	7.0	8.7	8.3	9.6	4.0	4.0	8.6	9.5	8.4
1964	4.5	6.7	8.3	7.8	9.0	4.3	4.4	7.9	8.9	7.3
1965	4.3	8.6	8.6	9.5	9.1	4.4	4.4	8.0	9.2	8.0
1966	2.9	6.0	5.4	5.5	5.0	2.7	2.7	4.9	5.2	5.5
1967	6.4	9.9	9.7	10.7	10.3	6.4	6.3	9.3	10.4	8.5
1968	7.6	9.0	8.1	9.3	8.3	7.4	7.4	8.0	8.7	9.5
1969	3.9	3.2	3.6	0.1	1.5	3.8	3.8	4.2	1.5	4.4
1970	4.8	7.2	7.2	10.2	9.2	4.8	4.8	5.8	8.9	6.5
1971	6.6	11.3	13.5	12.8	14.3	6.6	6.6	13.5	14.8	10.4
1972	8.4	11.2	13.3	12.3	13.9	8.5	8.5	12.9	14.0	12.9
1973	6.2	8.8	9.0	12.0	11.0	5.7	5.8	7.3	11.7	12.3
1974	5.1	7.7	7.1	10.7	9.0	4.7	4.7	6.0	8.7	9.6
1975	4.6	8.4	11.1	6.6	9.7	4.7	4.9	12.3	9.4	9.8
1976	5.8	10.9	12.7	7.1	10.2	5.5	6.0	13.7	11.4	11.0
1977	7.9	9.8	11.7	10.1	11.7	7.7	8.1	11.5	12.6	12.6
1978	7.2	8.7	9.5	10.6	10.6	7.4	8.2	8.4	11.3	12.3
1979	5.5	8.3	8.1	7.5	7.6	5.5	8.0	8.8	9.5	11.5

¹Fourth-quarter average over fourth-quarter average growth rate, based on seasonally adjusted data.

reserves as the operating target, the efficacy of control of the new monetary measures depends on the degree to which the components are reservable under Federal Reserve regulations. Reserve requirements apply to a larger portion of M-1A than any of the other aggregates. This proportion diminishes as liabilities of nonmember institutions are added, but the coverage is only slightly more than for M-1B—perhaps on the order of one percentage point.

No matter how good in theory a particular aggregate may be, if it cannot be measured accurately and if knowledge of changes in it is not timely, it is not very useful for policy purposes. Data for all components of the new measures are available, and negotiations are under way to obtain data on travelers checks of nonbank issuers that will be included in M-1A when available. The quality and timeliness of the data vary, however. A major concern has been the delay in availability of data on transactions balances at thrift institutions.

Efforts have been made over the past year to improve data flows. The Federal Reserve, for example, has begun collecting data from credit unions, and more timely data are being collected on RPs and on deposits of nonmember banks, mutual savings banks, and S&Ls.

Estimates of weekly data are being published for the M-1A and M-1B aggregates and their components. Weekly estimates of some components of other measures are also being published. These include overnight and term RPs issued by commercial banks, certain overnight Eurodollar deposits, and commercial bank savings and time deposits. Monthly estimates for the new M-2 and M-3 measures will be published by the middle of the following month. Monthly data for L will be published with a six to eight-week lag.

Because some of the checkable deposits at institutions other than member banks have to be estimated, data may be less reliable for M-1B than for M-1A initially. But as data collection programs are refined, both the accuracy and timeliness of both M-1B and the broader aggregates are expected to improve.

Related issues

The debate over the proper definition of money has entailed much discussion of the role of money market mutual funds, security RPs, and credit cards.

Assets of money market mutual funds rose very rapidly last year, from \$10 billion at the end of 1978 to \$44 billion at the end of 1979. Although many of the funds offer check-writing privileges, the minimum amount for which a check can be written is high, limiting the transactions use of these shares to big ticket purchases. The funds are attractive primarily as liquid investments. Estimates of the turnover in these funds suggest that balances are used much like savings accounts and not primarily as transactions accounts. It is for this reason that money market mutual fund shares are included in new M-2 and not in either of the narrow transactions measures.

Banks have made more use of RP arrangements with their customers in recent years. In an RP, a bank sells a security to a customer and agrees to buy it back at a specific time at a specific price. Funds obtained through RPs in U.S. Treasury or agency securities are exempt from basic reserve requirements of member banks. Thus the RP resembles a loan from the customer to the bank, collateralized by government securities. In the case of an overnight RP, the funds in most instances come out of a demand balance one day and are restored to these balances and are available to spend the next day. Term RPs tie up the funds for a longer period, providing the customer with an interest-earning alternative to demand balances that are not needed for immediate transactions.

There is considerable disagreement on whether RPs are mostly liquid investments or transactions-type balances—close substitutes for demand deposits. Some analysts attribute the errors in predicting demand for old M-1 type balances in the late 1970s to the growing use of RPs as a cash management tool. Others regard RPs as an alternative to other investments such as short-term Treasuries, commercial paper, bankers' acceptances, or

CDs. The decision not to include RPs in M-1A or M-1B rested mainly on this difference in view as to whether RPs are basically transactions or investment instruments.

Although credit cards are sometimes called “plastic money,” they are not included in any measure of money. Every component of the whole array of monetary aggregates represents the public’s holdings of financial assets. A credit card is not a financial asset, meaning something that is *owned*. On the contrary, debt—something *owed*—is incurred by its use. Money balances must be used to liquidate this debt. The credit merely postpones the transfer of ownership of financial assets.

Nevertheless, the increase in the use of credit cards, does have implications for monetary policy. There are two elements in the relationship between money and GNP. One is the amount of money available for spending. This is the focus of concern in defining the monetary aggregates. The other is the rate at which money, however defined, is spent—its velocity. Spreading use of credit cards affects the velocity of money by allowing a smaller amount of transactions balances to support a given level of spending.

Why two M-1 measures?

As NOW accounts combine the features of transactions and savings accounts, it is expected that if these accounts were offered nationwide, funds would be shifted into them initially from household demand deposits, savings accounts, and other liquid assets. As it is difficult to estimate the extent of shifting that would be made, the Board of Governors expects the availability of both M-1A and M-1B to help in interpreting narrow money stock growth during a transition to NOWs.

During this start-up period, shifts to NOWs out of demand deposits would have the effect of slowing M-1A growth even though no change occurred in actual transactions balances. Such shifts would not affect M-1B because both demand and NOW accounts are components of that aggregate. Thus, a focus on M-1A in policy implementation would tend to understate the real growth

in narrow money. M-1B, on the other hand, may overstate the underlying trend growth of money to the extent that shifts to NOWs reflect initial transfers from noncheckable savings and other nontransactions balances.

The extent of any shifting from either or both sources will be greatly influenced by the pricing of NOW accounts and how the terms offered compare with service charges and interest paid on alternative liquid assets. Once the initial shifts are completed, reliable data flow and statistical procedures are well-established, and experience has provided further evidence of relationships between the new aggregates and the behavior of the economy, it may be more feasible to focus down to a single measure of transactions balances for purposes of policy implementation. The broader measures will, of course, be monitored and will provide guidance in setting growth objectives for narrow money.

M-1B seems the more likely choice in the foreseeable future. It is closer to meeting the theoretical criteria for a money concept since NOW and ATS-type balances can be spent directly. Most of the reasons for discontinuing old M-1 still apply to M-1A. The evidence suggests that the relationship of M-1B to GNP has been better in recent years than that of old M-1 or M-1A, and it is more controllable than the broader measures. Also, it is expected that information on M-1B soon will be as reliable as M-1A data and more timely than data for broader measures.

Given that no financial asset is viewed exclusively for either transactions or investment purposes, any choice from among the possible aggregations of financial assets entails some element of arbitrariness, and the same measures are not appropriate to serve various analytical needs. For this reason, the components of the new money measures are to be published separately to facilitate recombinations desired by users.

Moreover, continual innovations in the payments system are a fact of life. It should be expected, therefore, that even this new set of money measures may be subject to change as required to keep policy variables consistent with economic reality.