FRBSF Weekly Letter

March 13, 1987

Downgrading M1

On February 19th, Federal Reserve Chairman Paul Volcker testified before the Senate Banking Committee about the Fed's 1987 plans for monetary policy. An important element of these plans consists of the target ranges chosen by the Federal Open Market Committee (FOMC) — the Fed's main policymaking body — for growth in the monetary aggregates. The FOMC chooses target ranges that will help it achieve macroeconomic goals such as economic growth and stable prices.

In this testimony, the Chairman reported that the FOMC had reaffirmed the 5½ to 8½ percent 1987 target ranges for growth in the broader monetary aggregates, M2 and M3, that had tentatively been set last July. Those broader aggregates include, in addition to the currency and fully checkable deposits in M1, various time and savings deposits and certain other liquid investments.

The Committee decided not to set a target range for the narrow aggregate M1. However, the FOMC stated that it will closely monitor the behavior of M1 ". . . in light of other information, including whether or not changes in that aggregate tend to reinforce or negate concerns arising from movements in M2 and M3."

Thus, for the time being, M1 has been given a subordinate role in the formulation and implementation of monetary policy where, traditionally, it has received greater emphasis than the broader monetary aggregates. The downgrading of M1's role in monetary policy for 1987 reflects concern about that aggregate's reliability as an indicator of monetary policy, concern that has arisen because of M1's highly unusual behavior over the past two years.

Recent "track record"

In 1985, extremely rapid growth in M1 was associated with moderate economic activity and subdued inflation, instead of the rising pace of activity and inflation one would have expected based on earlier experiences. M1 grew by nearly 12 percent that year, while real (inflation-adjusted) GNP rose by a moderate 3 percent and inflation came in at just under 3½ percent. In 1986, M1 growth increased to a very rapid 15¼ percent, while both real GNP and prices rose by only about 2 percent. These figures mean that the velocity of M1 — the speed at which money is spent on goods and services, calculated by dividing GNP by M1 — *declined* by 5½ and 9½ percent in 1985 and 1986, respectively.

This decline represents a dramatic departure from the roughly 3 percent trend rate of *increase* in the velocity of M1 in the 1960s and 1970s. Given the velocity declines in the past two years, it was necessary for the Fed to permit rapid M1 growth to prevent monetary policy from becoming highly restrictive and possibly sending the economy into a recession.

By contrast, the velocities of M2 and M3, although declining over the past two years, have behaved much more according to previous trends. M2 velocity declined at 2¼ and 4¼ percent rates in 1985 and 1986, which compares with a roughly flat trend over the period 1960-80. M3 velocity dropped at rates of 1¼ and 3¼ percent in 1985 and 1986 — compared with the ¾ percent trend rate of decline over 1960-1980.

Formal statistical tests confirm that movements in M2 and M3 in 1985-86 have been more predictably related to developments in the economy than has M1. Predictions from relationships between the quantities of M1, M2, and M3, and the levels of income, prices, and a representative market interest rate, estimated with data up to the end of 1984, suggest that M1 growth over 1985 and 1986 was well above what would have been expected from historical relationships with these macroeconomic variables. In contrast, growth in M2 and M3 fell within a normal range of deviation from past relationships.

Portfolio substitution
In the past, M1 has been considered a primary policy indicator in part because it had the desirable property of containing most of the media of exchange in the economy — currency and checkable deposits. Since M1 offered unique transactions services, the public's demand to hold M1 was not highly responsive to the kinds of portfolio considerations — for example, relative interest yields and terms-to-maturity — that determine demand for the savings-type instruments in M2 and M3. Because M1 had few close substitutes, its behavior was not substantially affected by difficult-to-predict portfolio substitutions, and, as a consequence, movements in M1 were dominated by changes in macroeconomic variables, such as income and prices, that are the concerns of Fed policy.

In the past two years, portfolio substitutions appear to have disturbed M1 growth, as illustrated in the accompanying chart. In that chart, we divided M3 into two components — instruments that have fixed terms to maturity and those that do not. The "nonterm" component includes M1 as well as other highly liquid instruments such as money market deposit accounts, passbook savings accounts, and money market mutual fund shares. The term component consists of accounts, such as small denomination (less than $100,000) and large denomination time deposits, that carry fixed terms to maturity.

As can be seen in the top panel, the nonterm and term components of M3 tended to move in opposite directions in 1985-1986, offsetting each other to an important extent. Just as importantly, as the lower panel shows, **both** M1 and the other nonterm instruments tended to move in the opposite direction from the term instruments. In other words, it appears that the public, when it wanted to shift in or out of fixed term accounts, was just as likely to make the switch with M1 as with other liquid accounts such as savings deposits.

Formal statistical analysis (using vector autoregressions) suggests that M1's susceptibility to portfolio substitutions is not new. Since the early 1980s, deviations in M1 growth from what would have been predicted on the basis of that aggregate's historical relationship with income, prices, and market interest rates were inversely related to movements in term accounts. Moreover, throughout this period, these unpredicted movements in M1 were positively correlated with movements in the other nonterm component of M3.

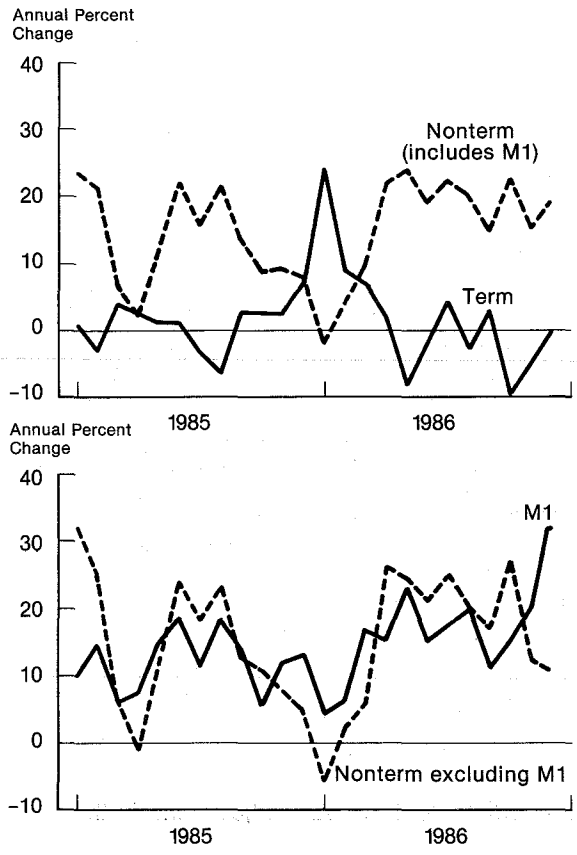
In contrast, in the latter half of the 1970s, M1 appeared to be far less susceptible to disturbances caused by portfolio shifting. That is, M1 showed no systematic correlation with movements either in other nonterm accounts or term accounts. Thus, M1 appears to have become more like a savings-type aggregate and less like a pure transactions aggregate during the 1980s.

Deposit rate deregulation
The deregulation of interest rates on deposits, which began in earnest in 1981 with the introduction of nationwide NOW accounts, is a commonly advanced explanation for the apparent change in the character of M1. With some of the checkable deposits in M1 now paying market or near-market rates of return, the public may have transferred some of its liquid savings balances into that aggregate. Such transfers would cause unpredictable downward adjustments in the velocity of M1, and might leave that aggregate permanently more sensitive to portfolio shifting.

While this argument explains the sensitivity of M1 to portfolio shifting, it does not explain the timing of the surge in M1, and the associated drop in velocity. The bulk of the evidence suggests that, before 1985, the velocity of M1 did *not* undergo sustained downward shifts related to deregulation, despite several episodes of major deregulation in the early 1980s. The earlier decline in the velocity of M1, in 1982-83 can be explained mainly as a predictable response to the decline in inflation, and thus interest rates, that occurred in 1982. Our analysis indicates that 1985-86 is the first time that the velocity of M1 dropped for a sustained period because of a portfolio disturbance — the disturbance being a large unexpected decline in the public's holdings of term accounts in M3.

One possible explanation for this disturbance is the recent narrowing of the spreads between yields on deposits in M1 and those on other instruments in M3. The drop in market rates relative to rates on NOWs throughout 1985-86 has made these spreads extremely small. Moreover, because these spreads have declined steadily since late 1984, the public may believe that low spreads are likely to persist. In response, the public may have shifted some savings balances

Growth Rates of M3 Components



in instruments with terms to maturity into the checkable deposits in M1, since the differential yield lost by shifting to these more liquid deposits has become small.

Higher interest-responsiveness of M1?
The extraordinary growth in M1 is far faster than would have been expected on the basis of the historical relationship between interest rate changes and M1 growth. As the growth has occurred after deregulation, it is tempting to conclude that the interest-responsiveness of the public's demand for M1 may have permanently increased. Nevertheless, it may be premature to predict from developments in 1985-86 that M1 will remain so highly responsive to interest rate changes in the future.

One way to interpret recent events is that the narrowing of interest rate differentials has reduced the rewards to active cash management so much that many savings balances have been mixed in with the transactions balances in the checkable deposits in M1. Thus the transfer of savings balances into M1 may represent a transitional adjustment rather than a permanent change in the interest-rate responsiveness of M1. In fact, less active cash management would imply that the responsiveness of M1 to changes in interest rates may actually have declined.

It is difficult to tell whether the interest-responsiveness of M1 has changed permanently because we do not as yet have enough experience with the behavior of that aggregate in an environment with such small spreads between open market interest rates and rates on NOWs. Predicting or even interpreting movements in M1 will therefore continue to be difficult in the foreseeable future. M1, as a result, is not likely to be very useful for policy purposes.

The broader monetary aggregates
What of the two broader aggregates, M2 and M3? Our analysis suggests that since M3 includes both term and nonterm components, it is likely to internalize the portfolio shifts that have disturbed M1 in recent years. Thus, M3 has a relatively good chance of having a stable relationship with macroeconomic developments in the face of portfolio adjustments. Our evidence on portfolio substitution suggests that M2 is likely to be more stable than M1, but possibly less so than M3 because, unlike M3, it does not include all term accounts.

Our analysis above supports the FOMC's decision not to set a target range for M1. At present, there do not appear to be any means of obtaining reliable estimates of M1 growth rates that are likely to be consistent with desired developments in the economy. Our analysis also suggests that the portfolio-shifting that appears to have interfered with M1's ability to serve as a monetary policy indicator should be internalized within M3 and, possibly to a lesser extent, M2. Thus, while there are good reasons to downgrade M1, as the FOMC recently did, developments in recent years provide no reason to alter the established pattern of setting target ranges for the broader aggregates.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 2/18/87	Change from 2/11/87	Change from 2/19/86 Dollar	Change from 2/19/86 Percent[7]
Loans, Leases and Investments[1] [2]	205,183	− 177	2,493	1.2
Loans and Leases[1] [6]	184,532	198	1,151	0.6
Commercial and Industrial	54,622	186	1,703	3.2
Real estate	67,859	11	1,644	2.4
Loans to Individuals	37,752	− 91	− 2,583	− 6.4
Leases	5,449	− 10	− 220	− 3.8
U.S. Treasury and Agency Securities	13,579	− 369	2,575	23.4
Other Securities[2]	7,071	− 7	− 1,236	− 14.8
Total Deposits	208,210	1,473	5,326	2.6
Demand Deposits	52,884	2,307	3,680	7.4
Demand Deposits Adjusted[3]	33,623	− 2,185	2,177	6.9
Other Transaction Balances[4]	19,237	− 32	4,242	28.2
Total Non-Transaction Balances[6]	136,090	199	− 2,596	− 1.8
Money Market Deposit Accounts—Total	47,178	269	1,485	3.2
Time Deposits in Amounts of $100,000 or more	32,361	− 79	− 6,325	− 16.3
Other Liabilities for Borrowed Money[5]	24,473	− 234	− 1,776	− 6.7

Two Week Averages of Daily Figures	Period ended 2/9/87	Period ended 1/26/87
Reserve Position, All Reporting Banks		
Excess Reserves (+)/Deficiency (−)	111	67
Borrowings	6	15
Net free reserves (+)/Net borrowed(−)	106	52

[1] Includes loss reserves, unearned income, excludes interbank loans
[2] Excludes trading account securities
[3] Excludes U.S. government and depository institution deposits and cash items
[4] ATS, NOW, Super NOW and savings accounts with telephone transfers
[5] Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources
[6] Includes items not shown separately
[7] Annualized percent change