Research Department
Federal Reserve
Bank of
San Francisco

September 11, 1981

FRB SF Weekly Letter

Innovation and Monetary Policy: I

The Federal Reserve increasingly has focused its monetary policy on the problem of bringing inflation under control. The Fed's anti-inflation plan involves gradually reducing the rates of growth of the monetary aggregates—especially M-1B, the measure of transaction balances—over a number of years. However, innovations in the financial markets over the past decade (and especially in 1975-76) have distorted the influence of monetary policy, thereby making it more difficult for the Federal Reserve to achieve its goals for the economy. In 1981, two such changes in the financial markets again threaten to distort policy—the rapid growth in money-market mutual funds, and the introduction of NOW accounts on a nationwide basis.

Financial innovations complicate monetary policy by making the public's demand to hold money balances less "stable" or predictable. Money demand is important to monetary policy because a lower growth rate in the money supply can ultimately reduce inflation only if supply decelerates *relative* to demand (at current prices, income, and interest rates). When this happens, the public finds itself with smaller money balances than it wishes to hold. It then tries to accumulate more money by selling securities (such as Treasury bills or money-market fund shares) and by purchasing fewer goods and services. The latter course means a direct reduction in the aggregate demand for goods and services, eventually leading to lower rates of inflation. The former approach—selling securities—causes interest rates to rise, thereby increasing borrowing costs and restraining spending and (ultimately) inflation.

What will happen, however, if the public's demand for money—at given levels of income and interest rates—decelerates by an amount equal to the slowdown in the money supply? The public then will be left with the amount of money it wants to hold, and will have no reason to adjust its financial portfolio or spending patterns. Hence, future inflation will not be affected.

Money management

Thus before it can choose the appropriate growth rate for the *supply* of money, the Fed must have a good idea of what will happen to the *demand* for money. Before discussing evidence of possible problems with money demand today, we should outline briefly what factors determine the public's demand to hold money in general. First, the volume of transactions defines the size of the job to be done. With more transactions to conduct, a larger quantity of money will be held. However, there is a limit to the amount of money a household or business will want to hold, because money generally does not earn a market rate of return. In August 1981 a household could earn 5¼ percent on a NOW account, which is checkable, compared to more than 15 percent on a 6-month bank money-market certificate (MMC). Of course, an instrument like an MMC is not checkable and cannot be used directly for transactions. However, as rates of return increase on such instruments, the public is induced to squeeze its money holdings in favor of higher-yielding but less-liquid alternatives.

The problem of not being able to write checks on a high-yielding alternative investment could be overcome if funds could be easily and inexpensively transfered between that investment and the checkable account just prior to a spending transaction. With a fixed fee for such transfers, the investor would, in effect, choose to hold a volume of NOW accounts which balanced the cost of frequent transfers against the interest foregone by holding the NOW account. A lower fee for transfering funds would make a larger number of transfers economical and thus reduce the demand to hold money balances.

A final determinant of the public's money holdings is the available knowledge and

Research Department
Federal Reserve Bank of San Francisco

technology of managing money. Some households may not manage their money very much at all, simply allowing their NOW or checking acount balances to rise and fall as they pay bills and receive income. But as the cost of foregone interest increases, more and more money holders will be induced to find ways to keep their balances down to minimum levels.

However, high interest rates apparently are not enough to induce closer money management—rates generally must rise to new peaks to induce such behavior on a large scale. Business firms and others apparently will be willing to incur the start-up costs—time, trouble, and out-of-pocket expenses—of a new money-management method only if interest rates are likely to be permanently higher. But new techniques, once instituted, are likely to be used even if interest rates subsequently subside below their peak levels. Once start-up costs have been incurred, the new technique may be little (if any) more expensive to use than the old one.

The 1975-76 shift

The preceding discussion provides an explanation for a good part of the sizeable downward shift in business demand for money which occurred in 1975-76. A large part of this shift can be explained by two key factors affecting corporate money management. First, regulatory changes in 1974-75 allowed corporations and others to hold passbook-savings deposits, which cost little to transfer into transaction balances—and thus provided them with an efficient new money-management tool. Secondly, short-term interest rates reached a new post-war peak in 1973-74: for example, the three-month Treasury-bill rate surpassed 8 percent for the first time in the post-World War II period. This development apparently raised corporations' perceptions of the long-run returns to closer money management, encouraging them to use new financial instruments and new technologies in managing their money.

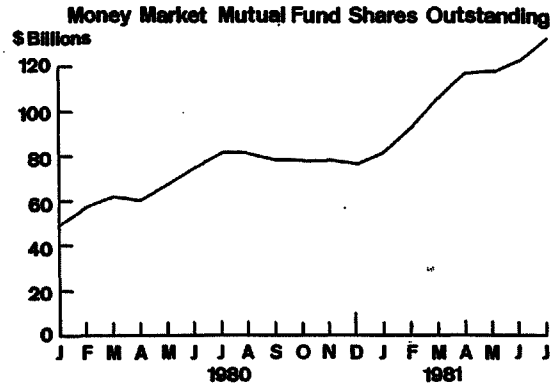
Security repurchase agreements (RPs) provide an example of a financial instrument which also increased in importance as a means of keeping money balances low. An RP is a contract that combines the sale of a security (such as a Treasury bill) and an agreement to repurchase that security at a specified future date and price. RPs generally carry short maturities, often one day, and can be arranged at very low transaction costs. These low costs permit frequent transfers between each RP and a checking account, facilitating a lower checking-account balance.

The cash-concentration account provides a good example of the technological innovations of the 1975-76 period. This type of account involves the transfer of excess balances from a corporation's local banks to its regional banks. Thus, unexpected decreases in one local account can, in effect, be covered by unexpected increases in another local account by the pooling of funds in the cash-concentration account. This procedure allows a firm to reduce its overall money balance while still handling the same level of transactions.

Another shift?

Another downward shift in the demand for money may now be underway—probably because of closer money management by households rather than corporations. The evidence comes from statistical analysis of equations used by economists to describe the public's demand for money, as well as recent developments in money-market mutual funds and regulatory changes.

In money-demand equations, the public's holdings of money are determined by prices, real GNP and a short-term rate of interest. Equations of this type detected the money-demand shift of the 1975-76 period. More recent statistical analysis indicates—for given levels of prices, income, and interest rates—a significant drop in 1981 in the public's demand for M-1B (adjusted for the impact of nationwide NOW accounts). Thus, the public appears to be handling a given



volume of transactions, at a given cost of foregone interest, with lower money balances than it did prior to 1981. Further testing indicates that this apparent downward shift could be statistically explained by 1980's peak interest rates, when (for example) the three-month Treasury bill rate exceeded 16 percent.

The recent growth of NOW accounts, however, makes the statistical tests on money-demand equations less reliable than they would otherwise be. NOWs were authorized on a nationwide basis in January 1981, and according to Federal Reserve studies, 20-30 percent of the subsequent increase represents transfers from passbook savings, small time deposits and other non-transaction instruments. As a consequence, these NOWs should be subtracted from M-1B to obtain a measure of transaction balances more consistent with the pre-1981 levels of that aggregate. The money-demand tests used these adjusted numbers, and therefore depend on the accuracy of the adjustments, as we shall see in our next *Weekly Letter*.

However, another important financial-market development—money-market mutual funds (MMFs)—appear to be consistent with a downward shift in money demand this year. Outstanding shares of MMFs have grown from $76 billion in December 1980 to $134 billion in July 1981, for a 131-percent annual rate of increase (see chart). Most of the increase went to funds with low initial-investment requirements—funds that tend to be used by households, rather than by corporations and other institutions.

The rapid expansion of MMFs does not necessarily mean a shift in money demand, in view of the fact that such funds are more closely related to savings deposits than to demand deposits. However, we could argue that 1980's historically high interest rates induced some households to manage their money balances more closely through transfers between checking or NOW accounts and money-market funds. These funds are the best money-management tool available to many households. They pay a market rate of return, require small initial and incremental investments, and offer a checking option. The checking option is limited, however, by a minimum-denomination requirement of about $500. Even so, money-market funds make it relatively easy for small savers to economize on money balances by writing a few checks a month on the fund and depositing them in a checking or NOW account prior to transactions.

Monetary policy

M-1B (adjusted for the impact of nationwide NOW accounts) now stands below the lower boundary of its 3½-to-6 percent target growth range for 1981. This might suggest an unduly tight policy, especially since the real output of goods and services in the U.S. economy declined at an annual rate of 2.4 percent in the second quarter of 1981.

However, if money demand is currently shifting down—as statistical evidence suggests—then monetary policy is currently more expansionary than indicated by (NOW adjusted) M-1B. Consequently, it seems to make sense to aim for the lower part of the longer-run range for 1981, as Federal Reserve Chairman Volcker indicated in his July Congressional testimony.

How expansionary actually is monetary policy? The answer depends crucially on how M-1B is adjusted for nationwide NOW accounts. But as discussed in the next *Weekly Letter*, this factor tends to reinforce the money-demand shift, with both suggesting that policy in 1981 may really be more expansionary than indicated by adjusted M-1B.

John P. Judd and Brian Motley

Research Department
Federal Reserve
Bank of
San Francisco
Alaska • Arizona • California • Hawaii
Idaho • Nevada • Oregon • Utah • Washington

FIRST CLASS

FIRST CLASS MAIL
U.S. POSTAGE
PAID
PERMIT NO. 752
San Francisco, Calif.

BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 8/19/81	Change from 8/12/81	Change from year ago Dollar	Change from year ago Percent
Loans (gross, adjusted) and investments*	151,337	145	12,535	9.0
Loans (gross, adjusted) — total#	130,453	303	13,372	11.4
Commercial and industrial	39,369	− 208	5,594	16.6
Real estate	53,719	110	6,231	13.1
Loans to individuals	23,118	37	− 744	− 3.1
Securities loans	1,364	30	461	51.1
U.S. Treasury securities*	5,965	− 171	− 349	− 5.5
Other securities*	14,919	13	− 484	− 3.1
Demand deposits — total#	39,553	− 686	− 4,331	− 9.9
Demand deposits — adjusted	26,921	−1,860	− 4,875	−15.3
Savings deposits — total	29,799	− 140	230	0.8
Time deposits — total#	85,854	688	22,898	36.4
Individuals, part. & corp.	77,742	760	23,014	42.1
(Large negotiable CD's)	35,427	421	12,050	51.5

Weekly Averages of Daily Figures	Week ended 8/19/81	Week ended 8/12/81	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (−)	n.a.	60	38
Borrowings	32	60	36
Net free reserves (+)/Net borrowed(−)	n.a.	0	2

* Excludes trading account securities.
\# Includes items not shown separately.

Editorial comments may be addressed to the editor (William Burke) or to the author .... Free copies of this and other Federal Reserve publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 544-2184.