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This Quarterly Review is published by the Research and Statistics Function of the Federal Reserve Bank of New York. Among the members of the function who contributed to this issue are JOHN WENNINGER *and* CHARLES M. SIVESIND *(on defining money for a changing financial system, page 1);* JANET SPRATLIN YOUNG *(on perspective and prospects of New York's insurance industry, page 9);* RONA B. STEIN *(chart analysis on the economy of New York City, page 20);* MARK A. WILLIS *(on business taxation in New York City, page 22);* DEBORAH JAMROZ *(on the role of public service employment in a changing economy, page 34);* WARREN E. MOSKOWITZ *(on global asset and liability management at commercial banks, page 42).*

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Defining Money for a Changing Financial System

In the past decade, major developments in this country's payments mechanism have raised the question of whether the traditional definitions of the monetary aggregates are still appropriate. Many of the changes in the form in which money is held and used have resulted from regulatory modifications designed to permit greater competition among banks and between banks and other types of financial intermediaries. These regulatory changes have allowed the development of a variety of new types of deposits. At the same time, periods of historically high levels of interest rates have increased the incentive for more efficient cash management by both consumers and businesses, resulting in the rapid growth of a variety of highly liquid nondeposit assets. The pace of such developments promises to accelerate in the future with increasing application of computer technology and electronic funds transfers. As if to emphasize the changing nature of the financial scene, conventional money demand equations, relating money balances to income and interest rates, have not been able to account for the movements in the narrowly defined money stock since mid-1974. As a result, a redefinition of the monetary aggregates is called for.

Defining the monetary aggregates appropriately is critical because these aggregates have come to play an increasingly important role in the formulation of monetary policy during the last decade. To be sure, the monetary aggregates are by no means the only guides to policy. Developments in the credit markets, in the foreign exchange markets, in business conditions, and in prices all play an important role in policymaking. It is against the background of analysis and projection of these fundamental economic developments that the Federal Open Market Committee (FOMC) establishes annual targets for several monetary aggregates as intermediate policy goals. The FOMC also sets short-term tolerance ranges for the growth of two money definitions to guide System open market operations between FOMC meetings. As regulations change and as the financial system evolves, allowing the public to find new forms in which to hold its financial wealth, relationships among money, interest rates, income, and prices are altered as well. Without stability in these relationships, the conduct of monetary policy is greatly complicated.

As the first step toward resolving these problems, a set of redefined monetary aggregates was presented by the staff of the Board of Governors in the January 1979 Federal Reserve *Bulletin*. Some of the details of these proposals will be considered in this article. Briefly, the suggested definitions would create improved, internally consistent aggregates that can be estimated from currently available data. They solve many of the problems arising from regulatory changes by treating consistently deposits with similar liquidity characteristics, regardless of whether they are located at commercial banks or at thrift institutions—mutual savings banks, savings and loan associations, or credit unions. For example, all deposits subject to withdrawal by check or other negotiable order, whether located at commercial banks or at thrift institutions, would be counted in the narrowly defined money stock. However, the proposals do not include aggregates that incorporate

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Table 1

Out-of-Sample Dynamic Errors in Projecting M_1

Quarterly average levels and growth rates 1970 to 1978

Period	1970-Q1 to 1974-Q2 Cumulative levels (billions of dollars)	1970-Q1 to 1974-Q2 Growth rates (per cent)	Period	1974-Q3 to 1978-Q4 Cumulative levels (billions of dollars)	1974-Q3 to 1978-Q4 Growth rates (per cent)
1970:			**1974 (continued):**		
Q1	0.0	0.0	Q3	− 3.8	−1.3
Q2	0.8	1.3	Q4	− 6.2	−3.3
Q3	1.3	1.0			
Q4	1.4	0.0	**1975:**		
			Q1	−11.6	−7.4
1971:			Q2	−15.1	−4.5
Q1	0.0	−2.6	Q3	−17.6	−2.9
Q2	0.2	0.3	Q4	−23.4	−7.3
Q3	0.0	−0.2			
Q4	−2.7	−4.7	**1976:**		
			Q1	−29.1	−6.8
1972:			Q2	−32.4	−3.5
Q1	−3.9	−2.1	Q3	−37.0	−5.0
Q2	−5.1	−1.8	Q4	−39.4	−2.0
Q3	−4.8	0.7			
Q4	−4.1	1.3	**1977:**		
			Q1	−42.6	−2.9
1973:			Q2	−45.5	−2.3
Q1	−3.5	1.0	Q3	−46.6	−0.1
Q2	−4.0	−0.6	Q4	−47.5	−0.1
Q3	−2.7	2.1			
Q4	−2.9	−0.3	**1978:**		
			Q1	−48.7	−0.4
1974:			Q2	−49.4	0.4
Q1	−2.2	1.2	Q3	−50.2	0.3
Q2	−2.9	−0.9	Q4	−53.9	−3.2
Average error	−1.9	−0.2		−33.3	−2.9
Root mean squared error	2.9	1.6		37.0	3.8

The estimated parameters of the money demand equation used to make these forecasts are shown below (t statistics are shown in parentheses beneath the coefficients).

$$M_t = \underset{(.53)}{.261} + \underset{(10.75)}{.750}M_{t-1} - \underset{(6.06)}{.019}R_t - \underset{(4.00)}{.040}D_t + \underset{(5.46)}{.173}Y_t$$

where:

P_t: GNP price deflator

M_t: ln ($Money_t/P_t$)

M_{t-1}: ln ($Money_{t-1}/P_t$)

R_t: ln (Commercial paper $rate_t$)

D_t: ln (Effective passbook $rate_t$)

Y_t: ln (GNP_t/P_t)

Estimation period: 1952-Q2 to 1969-Q4

(The equation was corrected for first order autocorrelation with $\rho = .534$.) The errors are calculated by subtracting the predicted values from the actual values without any correction for past errors.

highly liquid nondeposit assets such as repurchase agreements (RPs) and shares in money market mutual funds that have arisen out of the increased emphasis on cash management in recent years. Including such instruments would raise serious conceptual and measurement problems and, as the financial system continues to evolve, new assets with similar properties may well be developed. In light of these problems, the Board staff has limited the scope of its current proposals to the deposit liabilities of banks and thrift institutions (in addition to currency). But by leaving out highly liquid nondeposit assets, the Board staff's proposals do not reestablish the ability of conventional money demand equations to track movements in M_1 since mid-1974.[1]

What is money? For several thousand years, most people would have answered gold and silver. Now the answer has become more complex, and it continues to change as new assets are developed with different combinations of safety, liquidity, and interest-earning properties. It is more useful to define money by what it does than it is to list which assets should be included. Money serves as a medium of exchange and as a store of value. While most assets serve both these functions to some extent, certain types serve primarily as a medium of exchange; others, as a store of wealth. A transactions-oriented definition of money attempts to measure those assets that perform the first of these functions, while a wealth-oriented monetary aggregate is broadened to include assets that primarily satisfy the second. A great deal of empirical research has focused on estimating equations that explain the public's demand for a transactions-oriented aggregate, and prior to mid-1974 these equations were able to track movements in the money stock reasonably well.[2]

It is this relatively good performance in the pre-1974 period that makes the apparent mid-1974 breakdown in the ability of this conventional money demand equation to track movements in the money stock particularly disturbing. For example, in the 1970 to mid-1974 period the estimates show only a slight tendency to overpredict M_1 (Table 1). The average error in predicting the quarterly growth rate is only −0.2 percent from 1970-Q1 to 1974-Q2. In the next four and a half years, this error increases sharply to −2.9 percent per quarter,

[1] These and other results are examined in an econometric study, "Changing the Money Definitions: An Empirical Investigation", available from the authors on request.

[2] See Stephen Goldfeld, "The Demand for Money Revisited", *Brookings Papers on Economic Activity* (Vol. 3, 1973) and "The Case of the Missing Money", *Brookings Papers on Economic Activity* (Vol. 3, 1976). Goldfeld's equation links money balances to income, the interest rate on three- to six-month commercial paper, and the interest rate on savings deposits. The income variable captures the transactions demand for money, while the two interest rate variables measure the yield foregone in holding money balances.

resulting in a cumulative overprediction of $53.9 billion by 1978-Q4. This poor performance after mid-1974 is due, at least in part, to changes in regulations that govern deposits at commercial banks and thrift institutions. In addition, nondeposit assets have been developed that are used for transactions purposes or that permit the more efficient management of transactions balances without much cost, inconvenience, or capital risk. These assets account for part of this large error, raising the questions of whether they are treated by the public largely as transactions balances and whether they should be included in a narrow definition of money.[3]

Current definitions of the monetary aggregates

The effects of regulatory changes and financial innovations are not consistently captured by any of the measures of money currently published by the Federal Reserve. These aggregates range from a narrow definition that includes only currency and funds at commercial banks used to settle everyday transactions to a far broader measure encompassing most deposits at banks and thrift institutions (Table 2). The aggregate most commonly used in economic analysis (M_1), consisting of currency in circulation and demand deposits at commercial banks, comes closest of the standard aggregates to measuring money as transactions balances. Until recently, this series contained nearly all funds commonly used for transactions purposes. As a partial solution to the development of a variety of other "checkable" deposits, ranging from share draft accounts at credit unions to savings deposits subject to automatic transfer at commercial banks (ATS), the Federal Reserve has recently begun to publish a closely related series (M_1+) that in addition to M_1 includes demand deposits, interest-bearing negotiable order of withdrawal (NOW) accounts and share drafts at thrift institutions, and savings deposits (NOWs, ATS, and conventional accounts) at commercial banks.

Still broader aggregates are frequently used in economic analysis by those who emphasize the role of money more as a store of wealth than as a means of payment. The most commonly used of these (M_2) comprises M_1 plus time and savings deposits at commercial banks, excluding negotiable certificates of deposit in denominations of $100,000 or more issued by large weekly reporting banks (CDs). Deposits counted in M_2 but not M_1, usually denoted as other time and savings deposits, consist of three distinct components: savings deposits, time deposits under $100,000 (small time deposits), and large time deposits of $100,000 or more (LTDs), which do not include CDs. Savings deposits generally are readily available to the depositor, whereas small time deposits are committed for periods of time from thirty days to eight years or more. Both savings deposits and small time deposits are subject to interest rate ceilings, making deposit inflows sensitive to market rates of interest paid on money market instruments.[4] However, LTDs and CDs currently are not subject to interest rate ceilings, so that their yields tend to move in tandem with other market rates. LTDs consist of nonnegotiable certificates of deposit and open time accounts[5] at all banks and a small volume of negotiable certificates of deposit issued by banks other than the large weekly reporters.

M_3 contains all the items in M_2 plus time and savings deposits at thrift institutions. M_3 is the narrowest aggregate that is more or less consistent across depository financial institutions in the sense that it contains deposits with similar liquidity characteristics located at both commercial banks and thrift institutions. The addition of CDs at large weekly reporting banks to M_2 and M_3, respectively, yields M_4 and M_5.

Proposed redefinitions of the monetary aggregates

In redefining the monetary aggregates, the Board staff has focused on five primary problem areas.

(1) Included in the demand deposit component of M_1 are certain foreign source deposits that are held for official and semiofficial international purposes and as clearing balances for foreign banks. These deposits are held both at domestic commercial banks by foreign commercial banks and foreign official institutions and at the Federal Reserve by foreign official institutions and international monetary institutions. Balances in these accounts are not closely related to domestic transactions and thus do not seem to belong in any of the money definitions. Removal of these deposits was recommended earlier by the Bach Committee.[6]

[3] For a technical discussion of this question, see P.A. Tinsley, B. Garret, and M.E. Friar, "The Measurement of Money Demand" (Board of Governors of the Federal Reserve System, 1978).

[4] While small time deposits generally are subject to fixed rate ceilings —until explicitly changed by the regulatory agencies, the relatively new six-month money market certificates have a ceiling rate linked to the average discount rate on six-month Treasury bills posted at the weekly auction. Banks are able to match this rate, thrift institutions can pay an additional 0.25 percentage points, until the discount rate on six-month Treasury bills exceeds 8.75 percent. For bill rates between 8.75 and 9.00 percent, thrift institutions may offer 9.0 percent, and for bill rates above 9.0 percent thrift institutions may offer the discount rate on Treasury bills, the same rate that commercial banks may offer.

[5] An open time account is a deposit with a maturity of at least thirty days for which a certificate is not issued. These deposits are subject to thirty days' notice before withdrawal.

[6] Advisory Committee on Monetary Statistics, "Improving the Monetary Aggregates" (Board of Governors of the Federal Reserve System, June 1976). Several other minor technical changes in the aggregates recommended by the committee have also been incorporated in the proposed redefinitions but are not discussed here.

(2) Recent statutory and regulatory changes permit commercial banks and thrift institutions to offer "checkable" deposits that are not included in the demand deposit component of M_1. Since 1972, various changes in regulations by the Congress and state authorities have extended the ability of commercial banks and thrift institutions in the New England states and New York to offer NOWs. Balances in NOW accounts are withdrawable by negotiable orders, which function similarly to checks, but interest is paid on the balances as well. These transactions-oriented balances are excluded from the current definition of M_1 and, indeed, NOW accounts at thrift institutions are excluded even from M_2. In addition, in November 1978, revised banking regulations permitted individuals to authorize their commercial banks to transfer funds automatically from savings accounts into checking accounts, enabling consumers to maintain transactions balances in interest-bearing accounts until actually needed. As of December 1978, there were about $3.9 billion in NOW accounts and about $3.0 billion in savings accounts subject to automatic transfers, relatively small amounts when compared with an M_1 level of $361.5 billion. Also, in some states, thrift institutions offer demand deposits and credit unions allow deposits to be withdrawn by share drafts. Credit union share drafts are not included in M_1 or M_2, and demand deposits at thrift institutions are not included in any of the current aggregates except M_1+. The total volume of demand deposits at thrift institutions and credit union share drafts is small, but growing. All these new types of deposits tend to distort M_1 as a measure of transactions balances.

(3) Additional changes have been made in the regulations governing savings accounts. In 1975, member

Table 2

Comparison of Current and Proposed Definitions of the Monetary Aggregates

Components	M_1 Current	M_1 Proposed	M_1+ Current	M_1+ Proposed	M_2 Current	M_2 Proposed	M_3 Current	M_3 Proposed	M_4 Current	M_5 Current
Currency in circulation	X	X	X	X	X	X	X	X	X	X
At commercial banks:										
Demand deposits*	X	X	X	X	X	X	X	X	X	X
NOW accounts		X	X	X	X	X	X	X	X	X
Savings subject to automatic transfer		X	X	X	X	X	X	X	X	X
Other savings accounts†			X	X	X	X	X	X	X	X
Small time deposits					X		X	X	X	X
Large time deposits‡					X		X	X	X	X
CDs§								X	X	X
At thrift institutions:										
Demand deposits		X	X	X		X		X		
NOW accounts		X	X	X		X	X	X		X
Other savings accounts¶						X	X	X		X
Other time deposits							X	X		X
Credit union share drafts		X	X	X		X	X	X		X

* The definition of demand deposits differs between the current and proposed aggregates for technical considerations such as the exclusion of deposits held by foreign institutions at domestic banks in the proposed definitions. Precise definitions and historical data may be found in the Federal Reserve *Bulletin*.

† Excluding negotiable order of withdrawal (NOW) accounts and savings subject to automatic transfer.

‡ $100,000 or more.

§ Negotiable certificates of deposit in denominations of $100,000 or more issued by large weekly reporting banks.

¶ Excluding NOW accounts.

commercial banks and Federally chartered savings and loan associations were authorized to make telephone transfers from savings accounts to checking accounts and to make preauthorized payments to a third party from savings accounts. Also, state and local governments in 1974, and corporations in 1975, were first allowed to hold savings deposits at commercial banks, providing a convenient way for these depositors to earn interest on funds that otherwise would probably have been held as demand deposits. These accounts are often used by smaller business and governmental units without sufficiently large amounts of funds to invest in money market instruments on a short-term basis. This is particularly true for state and local governments because state laws governing eligible investments are often very restrictive. At present, there are approximately $15.0 billion in such accounts.

(4) Other time deposits at commercial banks and thrift institutions in denominations under $100,000 have become more distinct from savings deposits. This has occurred not only because of increasing use of savings deposits for transactions purposes, but also because changes in regulations since 1973 have permitted higher interest rates on time certificates with maturities over ninety days while at the same time imposing substantial penalties for early withdrawal. As a result, while savings deposits have remained liquid and have become more oriented toward transactions purposes, small other time deposits have becomes less liquid and less transactions-oriented than in earlier years. Thus, these two types of liabilities probably should not be included at the same point in moving along the spectrum from a very liquid, transactions aggregate to a broader aggregate containing less liquid stores of value.

(5) There do not appear to be any economic reasons to separate demand, savings, or nonsavings time deposits at thrift institutions from comparable categories of deposits at commercial banks. In the current definitions, M_3 and M_5 are relatively consistent across institutions while M_1, M_1+, M_2, and M_4 are not.

To eliminate these shortcomings in the current definitions, the Board staff has proposed four new monetary aggregates that would substitute, at least initially, for the current six definitions (Table 2).

Proposed M_1 and M_1+: The proposed definition of M_1 equals the current definition of M_1 (currency in circulation outside banks and privately held demand deposits at commercial banks), plus other deposits subject to withdrawal by check or other negotiable order at all commercial banks and thrift institutions, together with savings subject to automatic transfer, less demand deposits of foreign commercial banks and official institutions. This aggregate is defined to include only transactions balances at depository financial intermediaries. On the proposed basis, M_1+ would be equal to the proposed definition of M_1 together with all conventional savings deposits at commercial banks. This aggregate, however, may only be used for a limited period of time until the initial transition to ATS is complete. Unlike the other proposed aggregates, it is not consistent across institutions; it includes savings deposits at commercial banks but excludes savings deposits other than NOW accounts at thrift institutions.

Proposed M_2: M_2 would be redefined to include the proposed definition of M_1, together with savings deposits at commercial banks and thrift institutions. This measure includes transactions balances as well as those deposits most readily convertible into transactions balances. Compared with the current definition of M_2, this aggregate reflects the changes proposed for M_1, while also excluding other time deposits at commercial banks and adding savings deposits at thrift institutions.

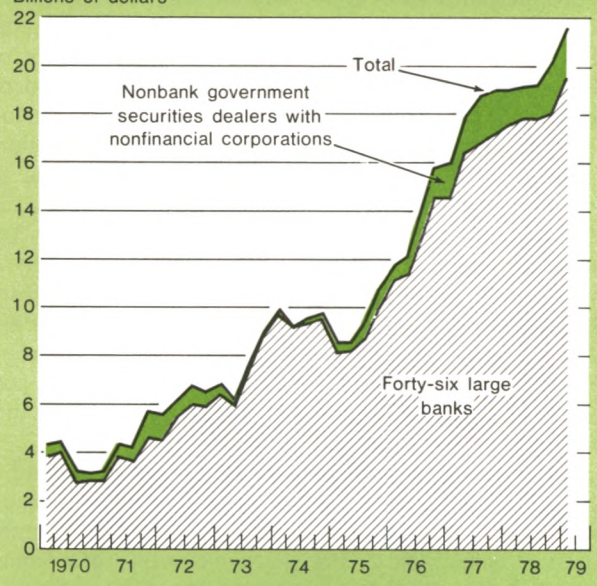
Proposed M_3: M_3 would be redefined as proposed M_2 plus all time deposits at banks and thrift institutions whether over or under $100,000. This aggregate measures the deposits of the nonbank public at financial intermediaries. Besides reflecting the changes in the M_1 component, this proposed definition of M_3 differs from the one currently used by including CDs at large commercial banks. It is approximately equivalent to the present definition of M_5 (current M_3+CDs).

The definitional changes proposed by the Board staff correct many of the conceptual shortcomings of the current monetary definitions stemming from lack of consistency across institutions and the new types and uses of deposits permitted by regulatory changes. By including deposits with similar liquidity characteristics at each level of aggregation, the proposed definitions for M_1, M_2, and M_3 are consistent across both commercial banks and thrift institutions. At the same time, these proposed definitions recognize that regulatory changes—which permit increased use of savings accounts for transactions purposes and which encourage lengthening the average maturity of small time deposits through higher ceiling rates for longer maturities—have given savings and time deposits distinct liquidity characteristics. Thus, it seems desirable to include savings deposits in the more transactions-oriented M_2 and to include small time deposits in the more wealth-oriented measure, M_3.

However, it is not clear that time deposits of $100,000 or more—both CDs and LTDs—should be treated in the same way as small time deposits under $100,000. They have different liquidity characteristics and different responses to changes in market rates of interest. Small time deposits are subject to interest rate ceilings and have maturities of up to eight years

Chart 1

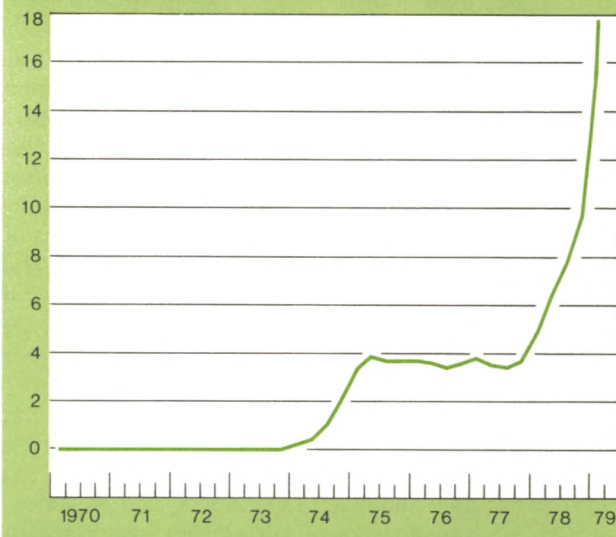
Outstanding Repurchase Agreements



Sources: Board of Governors of Federal Reserve System and Federal Reserve Bank of New York.

Chart 2

Money Market Fund Shares



Data for 1979 are plotted monthly; 1970 through 1978 plottings are quarterly.

Sources: Donoghue's Money Fund Report (Holliston, Massachusetts) and Investment Company Institute.

or more, making them relatively illiquid because of the substantial penalties for early withdrawal. In contrast, LTDs and CDs are not subject to interest rate ceilings and generally have relatively short maturities. Moreover, negotiable CDs are traded in a secondary market, making them highly liquid regardless of maturity date but also subject to capital risk.[7] Thus, time deposits of $100,000 or more present particular conceptual problems, and it is not clear that they belong in M_3 or in some aggregate that contains various money market instruments.

Other issues in defining the aggregates

Conceptual problems of a different sort are raised by the development of a variety of nondeposit assets, spurred by high levels of interest rates that have caused individuals and corporations to seek new ways to minimize noninterest-bearing transactions balances while maintaining liquidity. These nondeposit assets are highly liquid, a characteristic of traditional transactions balances, yet they earn market rates of interest. Chief among these are RPs, Eurodollar deposits, commercial paper, and money market mutual funds. These instruments either are "checkable" or may have original maturities as brief as one day, making them close substitutes for demand deposits.

Repurchase agreements: Large corporations are able to minimize their demand deposit balances by placing excess funds each day in the short-term money market. One way to do this is by arranging an RP—a secured placement of immediately available funds in which the borrower sells securities to the lender and agrees to repurchase them at a predetermined price at a future date (often the next day).[8] Such a transaction between a corporation and a commercial bank would convert a corporation's demand deposit asset into an interest-bearing asset that would not be counted in any of the current or proposed aggregates. Yet, since the funds can be committed for periods of time as brief as just overnight, they are still readily available for transactions purposes.

The RP market has grown very rapidly since 1970. While the total volume of outstanding RPs is not

[7] For more detail, see William C. Melton, "The Market for Large Negotiable CDs", this *Quarterly Review* (Winter 1977-78), pages 22-34.

[8] For more detail, see C.M. Lucas, M.T. Jones, and T.B. Thurston, "Federal Funds and Repurchase Agreements", this *Quarterly Review*, (Summer 1977), pages 33-48.

known, such transactions at forty-six major money center banks that report these transactions daily to the Federal Reserve have increased since 1970 from about $3.8 billion to about $20 billion. A survey in December 1977 conducted by the Federal Reserve System indicates that 60 percent to 70 percent of these RPs are arranged with nonfinancial corporations. While these banks probably represent a large part of the market, corporations may also arrange RPs with smaller banks, with nonbank financial intermediaries, or with other nonfinancial corporations. For example, nonbank Government securities dealers use the RP market to acquire funds from corporations and others to finance their positions. At the end of 1978, these dealers obtained about $2.0 billion each day from corporations through RPs (Chart 1). Recognizing the importance of RPs as an instrument for managing demand deposits, the Board staff has proposed collecting data and estimating a series for RPs between all commercial banks and money stock holders.

Money market mutual funds: These funds permit investors to purchase shares in a portfolio of money market instruments, thereby enabling them to earn market rates of return without the large sums normally needed for direct investment in such instruments. Shares in money market funds also are highly liquid, since they usually can be withdrawn by negotiable orders—typically in $500 minimum amounts. Despite the high degree of liquidity afforded by these shares, they are not included in any of the current or proposed aggregates. Assets of money market funds grew from virtually zero prior to 1974 to $10.7 billion at the end of 1978 (Chart 2). In the first three months of 1979, these funds increased another $7.2 billion.

Other liquid assets: Various short-term money market instruments such as commercial paper or Eurodollar deposits serve much the same cash management function as RPs. Eurodollar deposits, in particular, probably play an important role in the management of money balances. As the financial system continues to develop, other similar assets will undoubtedly become important.

All these instruments are potentially such close and important substitutes for demand deposits that the question arises whether some measure of them should be included in the monetary aggregates, perhaps even a fairly narrow definition. There are serious problems, however, with including them. Reported data on these instruments are not very complete. In particular, data do not allow precise calculation of RPs between all banks and nonfinancial corporations, or for that matter among nonfinancial corporations. Adequate data for short-term commercial paper and Eurodollars are not available. Moreover, to include these instruments in a definition of money, even if adequate data were available, arbitrary guidelines would have to be established, such as limiting the amount included to original maturities of one day or perhaps a few days at most. Given these difficulties, the Board staff has limited the scope of the proposed money definitions to the deposits of banks and thrift institutions. But, even if these liquid assets are not included explicitly in the monetary definitions, their impacts must still be recognized to help explain the behavior of the current and proposed aggregates. The collection and publication of more complete data on RPs, as proposed by the Board staff, should greatly facilitate such analysis.

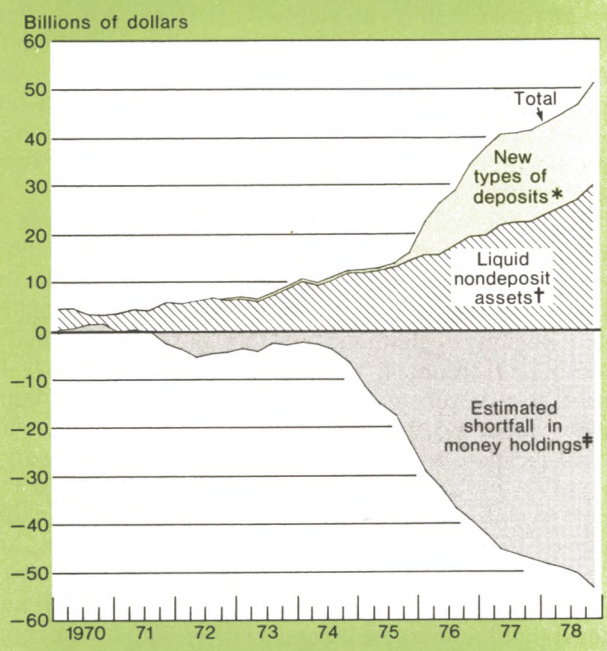
While the narrowest definition of money stresses its role as a medium of exchange, the broader definitions emphasize the store-of-value aspect of money. In this role, there are many close substitutes for the liabilities of depository institutions that are not included in the definitions proposed by the Board staff. Not only instruments of very short maturity, but also highly liquid assets maturing after several days or even weeks, merit consideration in defining the broader monetary aggregates. If the broad money stock is to be defined to include large CDs, should not term RPs, bankers' acceptances, Treasury bills, commercial paper, and Eurodollar deposits be included at some point as well?[9]

A preliminary analysis, based on available data, suggests that the increased use of highly liquid nondeposit assets could well be at least as important as the development of new types of deposits in explaining the apparent shift in the money demand function since mid-1974. For example, at the end of 1978, the total volume of the new types of deposits and nondeposit assets, shown in the top panel of Chart 3, was very close to the estimated shortfall in the public's demand for money as measured by Goldfeld's money demand equation (Chart 3, bottom panel). Prior to mid-1974, the errors from the money demand equation using the current M_1 definition were small, as was the total volume of those various deposit and nondeposit items that are close substitutes for demand balances. After mid-1974, however, the errors from the money demand equation began to cumulate to an unprecedented extent—mirrored by the increased volume of near

[9] The question of including Eurodollar deposits in the definitions of money is important but is surrounded by particularly difficult measurement and conceptual problems. Eurodollar holdings of United States resident individuals and corporations other than banks have grown rapidly in recent years, but reliable data are not available at present. Conceptually, very short-term Eurodollar deposits are similar in many respects to RPs (although they are not collateralized). Other Eurodollar deposits, probably representing the bulk of the market, are similar to time deposits issued by domestic banks. There seems plausible reason to suspect, however, that the proportion of Eurodollars related to international rather than domestic transactions must be substantially higher than is the case for the analogous domestic instruments.

Chart 3

The Growth of Close Money Substitutes Has Mirrored the Shortfall in Money Demand



* Sum of corporate and state and local government savings deposits, NOW accounts, savings subject to automatic transfers, credit union share drafts, and demand deposits at thrift institutions.

† Sum of repurchase agreements (RPs) at nonbank Government securities dealers with nonfinancial corporations, RPs at forty-six large commercial banks, and assets of money market mutual funds.

‡ Post - 1969 errors from Goldfeld's money demand equation using the current definition of M1.

monies, stemming both from regulatory changes and from innovations. The outstanding volume of substitutes for commercial bank demand deposits—resulting from regulatory changes that permit (1) the creation of other "checkable" deposits at commercial banks and thrift institutions and (2) savings deposits for corporations and state and local governments at banks—was only about two fifths of the magnitude of the shortfall in M_1. But the total volume of the nondeposit assets (Charts 1 and 2) was roughly equal to the remainder.

While the new types of deposits and nondeposit assets shown in Chart 3 present a mirror image of the estimated shortfall in the demand for money, the result is to some extent fortuitous. On the one hand, it is likely that the total amount of RPs outstanding is considerably more than the amount shown for the forty-six banks for which data are available. On the other hand, the total amount outstanding cannot be expected to represent a dollar-for-dollar reduction in demand deposits, inasmuch as some RPs are arranged for periods longer than one day and even some one-day RPs may not be perfect substitutes for demand deposits. Also, some of the increase in money market mutual funds undoubtedly has come from other sources than demand deposits and, in fact, relatively few checks have been drawn against fund shares. At the same time, data limitations preclude the measurement of some highly liquid assets that are very close substitutes for demand deposits. Furthermore, not all the reduction in money holdings resulting from cash management will necessarily be reflected in the growth of nondeposit liquid assets. Part of it may be reflected in other portfolio adjustments, such as reduced business borrowings at commercial banks or in the commercial paper market. With all these caveats, the available evidence nevertheless suggests that the monetary aggregates will continue to be difficult to forecast and to control unless allowance is made not only for the new types of transactions deposits resulting from regulatory changes but also for highly liquid assets that have developed as a result of the increased emphasis on cash management.

In summary, as a result of regulatory changes and the continuing development of the financial system, as well as some conceptual problems inherent in the current money definition, it seems appropriate to redefine the monetary aggregates. The Board staff has made a major contribution in proposing definitional changes to correct for shortcomings stemming from regulatory changes and from lack of consistency across depository institutions. The proposed definitions are restricted to the deposit liabilities of financial intermediaries and do not incorporate highly liquid nondeposit assets. There are, to be sure, serious conceptual and measurement problems with the inclusion of such assets in monetary aggregates. Nevertheless, interpretation of monetary phenomena would seem to require that account be taken of developments in highly liquid nondeposit assets. The financial system is changing continuously, and no one definition of the aggregates can be wholly satisfactory for all purposes.

John Wenninger and Charles M. Sivesind

New York's Insurance Industry
Perspective and Prospects

New York City is the home of some of the world's largest life insurance companies and of the nation's premier market in commercial property-liability insurance. Twenty years ago jobs in the city's insurance industry accounted for nearly half of all financial employment in New York. Today this share has fallen to less than a third. Moreover, since 1950 the fraction of the nation's insurance work force employed in New York City has more than halved, from 16 percent to less than 7 percent or about 100,000 jobs. This decline stems from many causes, among them the relatively slow growth of local markets, laborsaving technological changes, the decentralization of insurance operations, and burdensome taxes and regulations.

In terms of the future, there is evidence that some of these negative influences are dissipating. The regional economy appears to be stabilizing, and New York is becoming increasingly competitive with other locations as business costs rise more slowly than in the rest of the nation. An important element in the improving business climate has been governmental actions taken in recent years. Changes have been made to reduce regulatory and tax burdens on insurance. Moreover, the brokerage and underwriting community's ability to compete worldwide has been strengthened by the recently instituted Insurance Free Zone and the prospective Insurance Exchange. These recent trends lend hope that the decline in insurance-related jobs can be arrested and might possibly be reversed.

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Structure of the insurance industry: overview

By New York State law, individual companies are licensed to sell life insurance or property-liability insurance, but not both types of policies.[1] Life insurance policies are long-term contracts to insure relatively predictable risks. Property-liability policies are written for shorter time periods (typically one year), and generally cover less predictable risks. Many of the largest insurance corporations now have subsidiary companies in both areas, but the individual companies remain operationally distinct as required by statute. The types of risks covered and the regulatory environment vary between the two sectors, fostering differing sales techniques, investment strategies, and job skills.

Life insurance companies sell individual life and individual accident and health insurance directly to consumers and also sell group insurance plans, primarily through employers. Similarly, property-liability insurance covers the so-called "personal lines" that insure homes and automobiles of ordinary consumers, as well as "commercial lines" that insure business property and liability. These distinctions are important

[1] An exception is accident and health insurance, which is sold by both property-liability companies and life insurance companies. Property-liability insurance includes automobile liability and physical damage insurance, homeowners and commercial multiple peril insurance, fire and allied lines, inland and ocean marine, workers' compensation, burglary and theft, surety, fidelity, glass, boiler and machinery, and aviation insurance.

because the size and complexity of the policies issued affect the types of marketing systems employed, which in turn influence the location of insurance jobs.

Insurance is marketed through three distribution networks that overlap somewhat. Much of the individual insurance market is serviced by the American Agency System which comprises thousands of independent agents, each of whom typically represents a number of companies and is reimbursed on the basis of the premiums received from policies sold. In most areas, however, these independent agents and the "agency companies" that they represent are in direct competition with "direct writers"—companies that employ their own branch networks to sell directly to consumers.[2] In addition, large commercial property-liability risks as well as a substantial fraction of the group life and health plans are handled through a third network of insurance brokers.

Brokers differ from agents in their authority to "bind" the company to an insurance contract. Brokers submit their business to company underwriters who can accept or reject it; it is the underwriter who binds the company. Agents, however, have contracts with companies that allow them to commit the company on certain types of policies, usually up to some specified limit per policy.

Many insurance brokerage firms deal primarily in large commercial risks. The largest brokerage firms are national companies, with branch systems throughout the country. Their head offices, however, are located in the major insurance centers, where highly skilled personnel put together complex insurance contracts. Since these risks are frequently shared among several insurance companies, brokers benefit from proximity to the companies' underwriters. As a result, they have remained fairly concentrated in cities such as New York even when the ultimate market for their services is widely dispersed. In contrast, agencies and the branch offices of direct writers of individual insurance typically market standardized personal policies to consumers in their local market.[3] Because the sale of these policies does not require the same interaction of insurance professionals, there is little reason to centralize this activity. Consequently, jobs involved with the sale of individual insurance tend to locate close to the consumers.

The New York industry: early years

During the nineteenth century, the sales operations and head offices of insurance companies were concentrated in the nation's urban centers. With travel difficult, communications slow, and trade between regions limited, companies with large local markets had decided advantages. At the same time, the infrastructures of American cities facilitated home-office activities. Trolleys and later subways enabled the office district to draw workers from great distances, thus increasing the available labor force. Elevator buildings supported higher densities of activity, which made for easy personal contact. Typewriters, adding machines, and other office equipment made it technologically feasible for commercial businesses to hire pools of clerical workers to mass-produce outputs such as insurance policies.

As the country's largest, most developed urban center, New York City provided special attractions for the insurance industry. For example, because of the commercial activity of the port of New York, the city's property-liability insurers gained special expertise in large commercial risks. New York became the largest commercial insurance market in the country; and, to reach this market, property-liability companies that were headquartered in other cities also established major underwriting and administrative offices in Manhattan.

The easy personal contact afforded by New York City was especially important in the property-liability industry. The early companies were clustered together, making them readily available to brokers who typically went from firm to firm to market their risks. This close proximity also enabled companies to "spread the risk" by reinsuring with one another. When one company reinsures business with another company, it assigns all or part of the premium income from that business to the reinsurer, in return for which the reinsurer assumes the corresponding proportion of the risk.

The investment activity of Wall Street drew early life insurers to downtown Manhattan. Although they were prevented by law from investing directly in speculative ventures, prior to 1905 many New York life insurers did so indirectly by holding interests in Wall Street banks and investment houses—investments that were relatively risky in those days.

By the turn of the century, New York insurers dominated the industry. In 1900, New York's "domestic" life

[2] Direct writers, as used here, include both those companies that employ salaried sales representatives and those companies that sell through "exclusive agents". Exclusive agents represent only one company but are reimbursed on the basis of commissions. The overwhelming majority of individual life insurance policies are sold through exclusive agencies. The sale of personal lines property-liability insurance is more equally divided between independent agents and direct writers.

[3] Although the vast majority of individual insurance is sold through agents or direct writers and nearly all large commercial policies are brokered, there is substantial overlap. Some agents do a highly sophisticated large-risk business, while many brokers sell primarily small personal-lines policies. In particular, in New York City, for historical reasons virtually all property-liability insurance is purchased through brokers.

insurance companies—those chartered by (or domiciled in) New York State—accounted for less than one fifth of the nation's life insurance companies, but they collected more than half of the total United States life insurance premiums. The property-liability industry was far less concentrated, but New York was still important. Companies domiciled in New York State accounted for nearly one fifth of the nation's property-liability premiums, although they were only a tiny fraction of the country's 2,000 fire, marine, and casualty companies. Most of New York's domestic insurance companies were headquartered in New York City, and the concentration there of sales and head-office personnel made the insurance industry one of the city's largest employers of white collar workers.

The New York industry: maturity

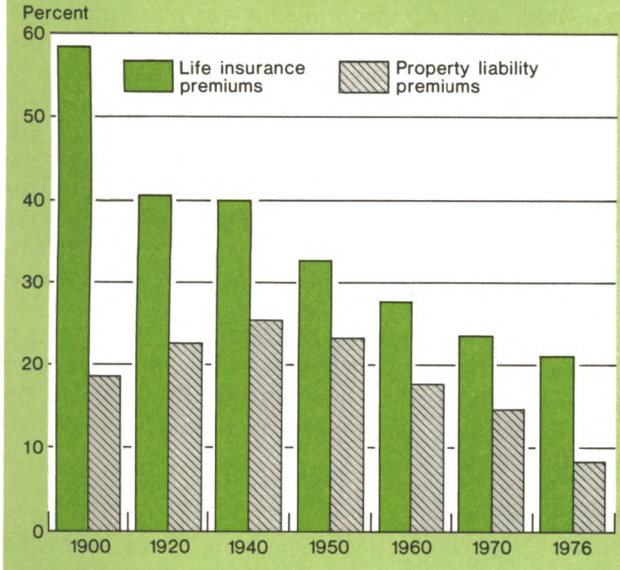
Spurred by the growth of the New York metropolitan region, the relative importance of New York's property-liability industry continued to increase during the early part of this century. The share of total United States property-liability premium income received by New York-domiciled companies increased from less than 20 percent in 1898 to more than 25 percent in 1940. Moreover, since out-of-state companies traditionally located major underwriting activities in New York City, it is likely that the insurance premiums received by New York domestic firms understated the importance of the city's property-liability industry during this period.

In contrast to the growth of property-liability insurers, in the first decades of the century New York's life insurance industry suffered a serious setback. In 1905, public criticism of industry practices prompted the New York State legislature to conduct a thorough investigation of life insurance companies then operating in the state. Widespread abuses were uncovered, and the New York State legislature responded by severely tightening its insurance regulations. Indeed, the 1906 New York Insurance Code has served as the model for twentieth century insurance regulations. The sharp erosion in the market share of New York-domiciled life insurance companies—from nearly 60 percent of United States premium income in 1900 to 40 percent in 1920—can in large part be attributed to the regulatory restrictions as well as to the somewhat tarnished image of New York companies immediately following the investigation.

Between 1920 and 1940, the market share of New York's domestic life insurance companies stabilized while that of the domestic property-liability companies continued to increase. Since 1940, however, New York City's importance as an insurance center—in both life and property-liability business—has declined steadily (Chart 1). This is evident from employment data as well as premium income data.[4] While total insurance employment in New York City expanded from 1950 to 1957, the advance was slower than for the nation as a whole. This disparity increased between 1957 and 1976, when insurance employment in the city fell by 19,000 jobs, a drop of about 15 percent, while insurance jobs in the nation rose by nearly 70 percent. Over the entire period, from 1950 to 1976, New York City's share of the United States insurance work force declined from 16 percent to less than 7 percent.

Chart 1

Share of Total United States Insurance Premiums Received by New York Domestic Companies

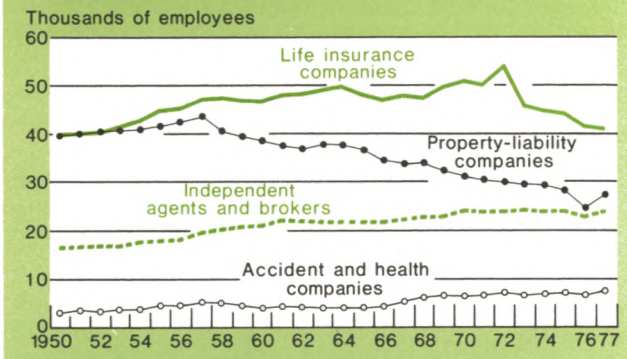


Sources: New York Insurance Department, Statistical Tables from Annual Statements; American Council of Life Insurance, Life Insurance Fact Book; The Spectator Company New York, The Insurance Yearbook 1901-1902, Life and Miscellaneous; Insurance Information Institute, Insurance Facts; A.M. Best and Company, Best's Review, Property-Casualty Edition (December 1948) — property-liability data for 1898 were used, since 1900 data on United States property-liability premiums were not available.

[4] In this article, employment is measured by the Bureau of Labor Statistics series on "covered employment", that is, employees covered by unemployment compensation. Covered employment data are available for earlier years and with greater industry detail than the more commonly cited payroll employment. In general, the trends of the two employment series parallel each other. However, the covered employment series does not follow exactly the payroll employment series because the proportion of workers covered by unemployment compensation has increased over the years. The increase in coverage has probably affected the New York and United States series similarly.

Chart 2

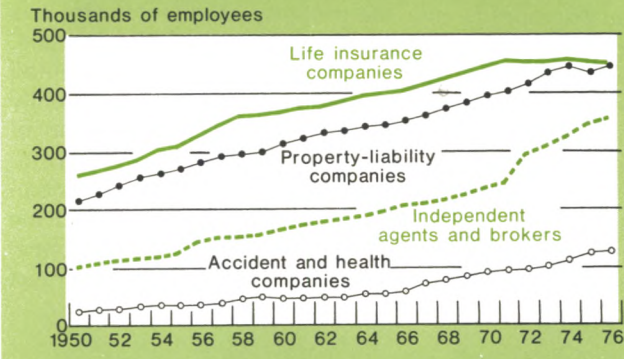
Insurance Employment by Sector: New York City



Source: New York State Department of Labor.

Chart 3

Insurance Employment by Sector: United States



Source: United States Department of Labor.

Employment trends have varied somewhat among the individual subsectors of New York's insurance industry. Employment with life insurance companies, which account for the largest number of insurance jobs in New York City, advanced until the early 1970's. Since then, however, the New York life insurance companies have sharply reduced their work force. Between 1972 and 1977, some 13,000 jobs were lost—25 percent of the 1972 total (Chart 2). Nationally, the number of employees of life insurance companies also declined in the 1970's, but the rate of decline was much slower than in New York (Chart 3). By 1976, the city's share of the country's life insurance jobs had fallen to less than 10 percent, down from 15 percent in 1950 (Chart 4).

In contrast to employment in the life insurance sector, the number of jobs with property-liability companies, the second largest employer of insurance workers in New York City, has declined almost every year since the peak in 1957. Over the ensuing twenty-year period this sector lost 16,000 jobs, or nearly 40 percent of its 1957 work force. More recently, however, employment in this industry appears to have stabilized, and in 1977 property-liability companies actually increased their work force a bit in New York. With national employment in this sector expanding virtually every year since 1950, New York City's share of United States jobs with property-liability companies dropped from 18 percent in 1950 to 5 percent in 1976.

Jobs in New York with independent agencies and insurance brokerage firms and with accident and health companies have actually increased over the last twenty-five years. But the employment growth has been very modest relative to these sectors nationally. Consequently, in these sectors as well, New York's share of United States total employment has fallen.

Why has New York City lost insurance jobs?

More than 200 domestic insurance companies are headquartered in New York City. In addition, New York is host to the regional sales and underwriting offices of numerous out-of-state companies that are licensed to sell in New York, as well as to the offices of the independent agents and brokers that service the New York market. In 1977 the New York insurance industry employed nearly 100,000 workers and accounted for about one third of New York City's total financial employment. Despite its size, New York's insurance industry has failed to keep pace with the employment gains elsewhere in the country. Indeed, if over the past thirty years the city's insurance work force had kept pace with the rest of the industry, there would be 225,000 insurance jobs in New York today—more than twice the actual number.

Market dispersal

Much of the relative decline in New York's insurance employment ultimately can be traced to the shift of insurance policyholders away from the traditional home markets of New York companies. For example, between 1940 and 1976, the fraction of total United States life insurance premiums paid by New York State residents fell from 17.7 percent to 7.0 percent. At the same time, the fraction of total United States property-liability premium income received for risks located in

New York declined from 17.3 percent to 9.4 percent. Since insurance is one of the multitude of business service industries that are attracted to headquarters centers, these trends reflect the relocation of corporate headquarters away from New York as well as the nationwide dispersal of individual policyholders.

Faced with the relatively slow economic growth of the New York region and the geographical dispersion of the nation's insurance market, New York companies have had to compete for business in distant markets. As a consequence, between 1940 and 1976, New York-headquartered life insurance companies increased the fraction of their total premiums received from out-of-state residents from less than 50 percent to nearly 90 percent. Since insurance salesmen and the service personnel who collect premiums and process claims and policy loans are closely tied to the local market, the dispersal of business away from the New York region has been accompanied by a decentralization of marketing-related jobs.

Computerization

The slow growth of sales-related employment is only part of the explanation. The home offices of New York City's domestic insurance companies also provide a substantial number of jobs, and these, too, have failed to expand in recent years, primarily because of productivity increases resulting from automation.

Insurance was one of the first industries to use the computer extensively in business operations. The sale and production of an insurance policy had traditionally involved the routine processing of numerous standardized forms by low-wage clerical workers—operations that are highly amenable to computerization. When the life insurance industry began automating in the 1950's, computers were huge, multipurpose machines that tended to be located in the head offices close to other operations. Hence, although productivity increases associated with automation reduced employment growth, the jobs continued to be in New York.

In contrast to life insurance companies, the main impetus to computerize processing in the property-liability industry did not occur until the 1960's. By then, computer technology had progressed sufficiently that companies could locate expensive computer hardware in suburban areas to take advantage of lower wages and to minimize the risks associated with centralizing such activities in problem-plagued urban centers. Indeed, property-liability companies that were in the early stages of computerization in the 1960's frequently chose to locate their electronic data processing (EDP) operations outside the city. As a consequence, employment within New York's property-liability companies fell both because of laborsaving computerization and because of the relocation of jobs outside New York.

Since many large life insurers had made substantial investments in computer hardware at their headquarters, they were less inclined to decentralize these operations in the 1960's. But by the 1970's, with further advances in teleprocessing and developments in smaller less costly computers, the life insurance companies also had begun to relocate their EDP operations outside the city.

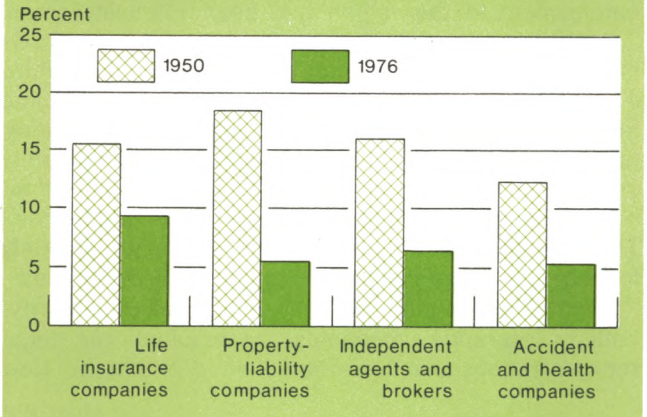
Regulation

New York State insurance regulations have dissuaded new companies from domiciling in the state, and this in turn has reduced the growth of headquarters-related jobs in New York City. This has been particularly evident in the life insurance sector where, since 1906, the New York State Insurance Code has imposed relatively conservative restrictions on investments, commissions, salaries, and the amount of business that can be written. These regulations apply to all companies licensed to do business in New York, regardless of their states of domicile. Moreover, the so-called Appleton Rule prohibits New York-licensed companies from engaging in practices in other states that are not allowed in New York State. Hence, all business of New York-licensed companies is affected by the New York Insurance Code—not just that in New York State.

As a result of New York State's pioneering consumer protection in the insurance field, New York life insurance companies' reputations for soundness and relia-

Chart 4

Share of United States Insurance Jobs Located in New York City



Sources: New York State Department of Labor and United States Department of Labor.

bility have grown over the years and consumers have undoubtedly benefited. Nevertheless, the regulations have had adverse implications for the competitiveness of New York-licensed companies and have served as a disincentive to companies that might otherwise locate in the state. A key example is the restriction on commission rates that New York-licensed companies can pay to sales personnel. As a result of this regulation, New York-licensed companies find themselves at a competitive disadvantage in markets outside the state because they cannot increase commissions to attract and retain agents.

New York's commission limitations are particularly restrictive for new companies trying to establish themselves in an area. Consequently, most new life insurance companies have chosen to become chartered in other states and have avoided the New York market altogether. Others also have domiciled out of state but have subsequently established a New York-domiciled subsidiary company licensed only in New York. This allows access to the New York market without exposing out-of-state business to New York regulations.

Because life insurance companies typically locate their home offices in their state of domicile, New York's failure to attract new life insurance companies has cost it jobs. Over the first fifty years of the century the number of New York-domiciled life insurance companies grew from fourteen to twenty-three, an increase of over 60 percent, but the number of companies nationwide posted a sixfold increase from less than 100 to close to 650. While the growth of New York companies has outpaced the nation since 1950, the vast majority of the newly established New York companies simply represents New York subsidiaries of major out-of-state insurers. As a result, the positive impact of these increases on headquarters-related employment in the region has been relatively small.

Although the number of New York domestic property-liability insurers has actually declined by one third since 1950, this has not caused an equivalent decline in New York property-liability insurance activity or in related employment. Unlike life insurers, property-liability companies frequently locate all or part of their headquarters operations outside their state of domicile.[5] Thus headquarters-related jobs in any state are only loosely tied to the number of its domestic companies.

Much of the contraction in the number of property-liability insurance companies has resulted from legal reorganizations that have had limited effects on New York's headquarters-related employment. Following New York State's decision in 1949 to allow multiple-lines underwriting, a general consolidation took place nationwide as property companies merged with casualty companies.[6] The ensuing reduction in the number of New York companies was substantial. Between 1948 and 1958, the New York domestic industry contracted from 307 to 231 companies, a decline of 20 percent. There was not, however, a concurrent decline in insurance sales, and employment with New York property-liability companies actually grew over this period. Moreover, although the consolidation may have resulted in some contraction of the work force to eliminate duplication, merged companies did not in general disappear from the New York insurance scene. Even when a New York company was merged into a company domiciled out of state, it typically continued to do the same business out of the same New York office as before.

Taxes

In addition to the regulatory burden, increases in New York's insurance taxes during the late 1960's and early 1970's also reduced the willingness of insurance companies to domicile in the state. High taxes are themselves a disincentive. In insurance, however, the impact of high taxes imposed by any one state is magnified by the prevailing system of so-called interstate retaliatory taxation.

Insurance companies are taxed by each state on the policies they write on risks located within that state. Furthermore, all states with domestic insurance companies also levy retaliatory taxes. Suppose, for example, that all states levy a standard premium tax of 2 percent, and that one state, say New York, chooses to raise its rate to 3 percent. Companies domiciled outside New York would pay the higher rate, but only on the policies they wrote on risks located in New York. In contrast, New York's domestic companies would be required to pay 3 percent, not only on the business they wrote in New York, but also on their business in any other state with retaliatory tax laws. Hence, the burden of any general increase in a particular state's insurance tax falls more heavily on its own domestic companies than on out-of-state companies licensed to sell insurance in that state.

Retaliatory taxes were originally designed to pro-

[5] New York City has been the major beneficiary of this trend. Numerous out-of-state companies maintain major underwriting operations in the city to gain access to the New York market, and several companies domiciled in other states also have their executive offices in New York.

[6] Prior to this time, New York-licensed property companies were not allowed to write casualty policies and vice versa. To be able to provide their customers with a full range of insurance services, many property (casualty) companies organized casualty (property) subsidiaries and some even issued joint policies. When the legal proscription on multiple-lines underwriting ended, many of these subsidiaries were merged.

tect each state's domestic companies from high taxes in other states by penalizing the domestic companies of any states charging the higher rates. They also have had the effect of discouraging insurance tax increases in general. For many years, 2 percent was the standard premium tax throughout the country; and, even today, most states continue to charge this rate.

In 1968, New York State raised property-liability premium tax rates from 2 percent to 2.25 percent, and life premiums from 1.75 to 2 percent. However, to prevent retaliation, these increases applied to the New York business of only New York domestic companies. The tax on the New York premiums of out-of-state companies remained unchanged.

By 1974, New York's premium tax on domestic property-liability companies and domestic life insurance companies had been raised to 2.6 percent and 2.25 percent, respectively. Some property-liability companies, which were members of insurance groups containing out-of-state companies, responded by transferring their New York business to the out-of-state companies to avoid paying the tax. Other companies, unable to make this transfer, began to redomicile to other states to reduce their tax burden.

In 1974, New York State acted to institute an insurance tax that did not discriminate against New York State companies. The straight premium tax was replaced by a combined income tax and premium tax. Under the current system, the premium tax rate has been reduced to 1.0 percent on life premiums and accident and health premiums and to 1.2 percent on property-liability premiums. But in both cases the premium tax is supplemented by an income tax of 9.0 percent. In addition, each company's total state tax liability is limited by a "cap", or maximum, equal to 2.6 percent of total premiums.

When the 1974 tax changes were instituted, it was hoped that other states would not retaliate against income taxes and that the reduction in the premium tax would solve the problem of retaliation. Neither hope has been realized, however. Since the current tax *is* applicable to the New York business of out-of-state companies, many states seek to apply their retaliatory provisions to the income tax. When the premium tax equivalent of a New York company's total New York State tax exceeds the rate charged in another state, the New York company is normally assessed the difference in retaliatory taxes. As before, the New York companies most affected are profitable firms with a substantial proportion of their insured risks located out of state.

The retaliatory squeeze on New York's domestic companies has been significantly lessened, however, by the provision that allows them a credit against their New York State taxes equal to 90 percent of the retaliatory taxes that they pay to other states.[7] Since their institution in 1974, the credits granted by New York State against retaliatory taxes have more than doubled from $2 million to $5 million.

The 1974 tax changes reduced the tax burden on New York's domestic insurance industry but, by then, a significant number of the state's property-liability companies had redomiciled. Nevertheless, the impact on jobs and income has not been large. Redomiciling is not the same as relocating, and the major commercial underwriting operations of nearly all the firms that have obtained new charters from Delaware, Connecticut, or New Hampshire continue to be located in New York City. Indeed, the majority of these remain in downtown Manhattan. Hence, redomiciling has had more impact on insurance companies' tax liabilities than it has had on their New York jobs.

Some of the states to which firms have redomiciled have required that the insurance companies locate certain jobs there in exchange for their charters. So far, these requirements do not appear to have caused the city to lose many jobs. In any case, the jobs that have left appear to be concentrated in back-office operations such as data processing—operations that gradually have been relocating outside the city for some years.

New York's life insurance companies are also at a tax disadvantage. Indeed, virtually all the state's $5 billion in retaliatory credits have been paid to life companies. But, unlike the property-liability companies, no life insurance companies have chosen to redomicile, in part because of fear of a challenge by the New York State Insurance Department.[8] Nevertheless, the new tax indirectly constrains life insurance employment growth by affecting product mix. Under the income tax portion

[7] To obtain the full 90 percent credit, a certain minimum fraction of a company's risks must be located in New York. Otherwise 90 percent of the retaliatory taxes payable to other states could exceed the total tax liability to New York State. In such a case, the company's tax payments to New York could fall to zero before offsetting the full 90 percent of the retaliatory taxes paid elsewhere.

Ironically, in such a case, redomiciling to a low tax state could lower the tax liabilities of the company involved *and* at the same time raise tax receipts to New York State. If the same number of employees were to stay in New York, the premiums and income allocated to New York State for tax purposes would remain the same, but there would be no offsetting retaliatory credits.

Even in those cases where a company's New York tax liability is large enough to receive the full 90 percent credit, the remaining 10 percent of the retaliatory taxes is 10 percent that it would not be required to pay if it redomiciled.

[8] Such a challenge could involve, among other things, the complicated legal problem of how to allocate the liability of the New York Life Insurance Guarantee Corporation for policies of any New York domestic life company that would domicile elsewhere.

of the tax, investment income is taxed more heavily than premium income. Because of the "savings" component of individual whole life insurance, such policies generate a larger portion of investment income per dollar of premiums received than group or term insurance. Consequently, the switch from a straight premium tax to a combination premium and income tax creates incentives for New York companies to focus increasingly on group and term insurance. Since these areas are less labor intensive than individual whole life business, the tax may be contributing to a further reduction in New York City's life insurance jobs.

The tax also increases the incentives for all insurance companies to relocate jobs to other states. In figuring its income tax liability, an insurance company must apply the 9 percent rate to that portion of its net income attributable to its business in New York State—*i.e.*, to its "allocated entire net income". The proportionality factor is a weighted average of the fraction of the company's total premiums that are paid by New York residents and the fraction of its total payroll in New York.[9]

Even though the weight given to premiums in the allocation formula is nine times the weight given to payroll, the potential for reducing a company's allocated net taxable income by relocating jobs could be substantial. For example, assume one company pays 50 percent of its total payroll in New York while another pays only 10 percent of its wages there, and both write 10 percent of their premiums in New York. In this case, New York State levies its tax on 14 percent of the net income of the company paying 50 percent of its payroll in New York and on only 10 percent of the net income of the other company. Hence, embodied in New York's tax laws is a definite incentive for insurance companies to run their businesses from outside the state.

What types of jobs continue to locate in New York?

As a result of the increased productivity of home-office workers, the dispersal of sales personnel, and the relocation of data processing installations outside New York, the size of the insurance work force in the city has declined substantially over the past twenty years. Yet, New York continues to be an attractive location for many insurance operations. Indeed, for those companies headquartered in the city, New York continues to house the major underwriting, investment, and legal functions, as well as the senior administrative offices, and all the support facilities for these areas.

In particular, the sales and underwriting facilities for large, nonstandard policies tend to be centrally located in New York. This business requires sophisticated brokerage and underwriting expertise, and often necessitates face-to-face communication. Thus, despite the dispersal of other economic activity away from the region, New York's concentration of corporate headquarters, insurance brokers, and insurance companies has continued to attract this segment of the industry to the city. In the life insurance sector, this includes group insurance policies and pension management, important products of New York companies. Similarly, large commercial property-liability policies and reinsurance continue to be concentrated in New York.

New York—an international insurance center?

Large commercial property-liability risks are highly mobile—not just within the United States but also across national boundaries. Relative to other insurance centers in this country, the New York market clearly has a comparative advantage in this type of business. The companies operating in New York together provide sufficient underwriting capacity to absorb a substantial fraction of the large risks. They also offer specialized skills and services unavailable elsewhere in the country. Worldwide, however, London is the primary insurance center, and, in the past, many risks that might have been placed in New York instead moved on to London. Consequently, New York's continued growth in these areas depends on its successful competition with London for what is becoming an increasingly international insurance business.

In the past, part of the problem of the New York property-liability insurance industry reportedly has been that large commercial risks were overregulated in New York. The delay and added expense resulting from the regulatory process may have motivated brokers and customers to avoid placing risks in the New York market and to opt instead for out-of-state and foreign providers of insurance. Indeed, approximately half of the premium income received by Lloyd's of London originates in the United States. A number of recent changes in New York's insurance law will improve the national and international competitiveness of the New York property-liability industry.

Regulation 20

The first move to improve New York companies' ability to compete for international risks was an amendment to "Regulation 20". Adopted in 1977, this amendment relaxed the legal restrictions on New York companies that reinsure with "nonadmitted" reinsurance companies—*i.e.*, those not licensed in New York State.

[9] A company's entire net income that is allocated to New York State is obtained by multiplying its total United States income by

$$\left(\frac{9}{10}\left[\frac{\text{New York premiums}}{\text{United States premiums}}\right]\right)+\left(\frac{1}{10}\left[\frac{\text{New York payroll}}{\text{United States payroll}}\right]\right)$$

Insurance companies are required by law to hold reserves equal to their estimated losses, loss adjustment expenses, and unearned premiums.[10] When a block of business is reinsured, the reinsurer must increase its reserves to cover the assumed liabilities while the direct insurer typically reduces its reserves by a similar amount. Prior to the amendment to Regulation 20, New York-licensed primary insurers were not able to take credit against their reserves for any business ceded to nonadmitted reinsurers. Obviously, if the primary insurer cannot free reserves for new business, reinsuring with nonadmitted reinsurers becomes costly. Normally nonadmitted reinsurance companies are willing to make additional arrangements to cover the liabilities they assume: for example, they may grant the primary insurer a letter of credit on a New York bank. Moreover, to make it easier for American companies to reinsure with them, many foreign reinsurance companies have established United States branches that are licensed in New York State. Nonetheless, the New York restrictions were viewed as limiting the ability of New York companies to accept large risks and causing some large risks to move directly to London.

At the same time, New York companies operating in foreign insurance markets were at a disadvantage. If they reinsured with admitted reinsurers, New York State allowed them to credit their reserves. But by reinsuring here rather than in the country where the direct premium income originated, they increased their foreign exchange exposure. In any case, foreign regulations often forbid reinsuring in the United States, requiring instead that at least part of the reinsurance be placed locally (in the foreign country) with government-controlled reinsurers. Unlike many privately owned foreign reinsurers, these government reinsurers have had no inclination to become licensed in New York State. Consequently, New York companies dealing in these countries were forced to reduce their capacity to write new business because they could not credit their reserves for this reinsurance.

The amendment to Regulation 20 relaxed these reinsurance restrictions. New York-licensed companies can now automatically credit their reserves for 85 percent of most insurance ceded with nonadmitted reinsurers. This should facilitate New York companies' expansion of their activities abroad. It should also heighten competition in the United States reinsurance market as foreign reinsurers increase their activity here.[11]

An insurance "free zone"

The amendment of Regulation 20 was followed in 1978 by major legislation that established a New York Insurance Free Zone as of September 1, 1978. In effect, this amounted to a partial deregulation of large insurance contracts throughout the State of New York. Previously, all commercial insurance policy forms had to be submitted to the state insurance department for approval—a process that resulted in increased costs and delay. Under the Free Zone legislation, companies that obtain special licenses are authorized to write insurance contracts that are exempt from the New York Insurance Department's rate and policy filing requirements so long as they carry annual premiums of at least $100,000 for one kind of insurance or $200,000 for two or more kinds of insurance. Similarly exempt from regulation are certain special, exotic, and difficult-to-place risks such as kidnap and ransom or skydiving insurance. However, Free Zone insurance must still comply with the minimum standard policy provisions of the New York Insurance Law. The Free Zone legislation also provides for income from risks located outside the United States to be exempt from New York States taxes.

This partial deregulation of large nonstandard insurance contracts should enable New York companies to compete effectively for most United States risks that brokers have, in the past, preferred to place in London. Moreover, with the exemption of foreign risks from New York taxes, it is expected that the New York insurance industry will be able to attract an increasing share of the insurance business originating in other countries. Early indications are promising. By February 1979 Free Zone licenses had been granted to sixty-three companies which in the aggregate have a capital and surplus equal to $9 billion. Using the basic limitation of 20 percent of capital and surplus for Free Zone writing, the Free Zone could provide a potential market of $1.8 billion in insurance premiums.

The New York insurance exchange

The 1978 legislation also provided for the establishment in New York City of an insurance exchange—an entirely new institution designed to attract risks from

[10] Property-liability premiums are typically paid one year in advance. If a customer cancels the policy before the year is over, the company refunds the "unearned" fraction of the premium paid; hence, it must hold reserves to cover unearned premiums.

[11] Many of the foreign firms that have recently opened branches in New York are reinsurers who "domesticated" in response to restrictions in the New York insurance law limiting the credit allowed primary insurers on premiums reinsured abroad. Since these restrictions have been eased, the rate of domestications of foreign branches may fall, but the activity of foreign companies in the New York market will probably increase.

around the world. Although the New York Insurance Exchange is still in the organizational stages, the recently approved constitution and bylaws provide for an institutional arrangement that is similar in many respects to Lloyd's of London.[12] Underwriters, operating on behalf of syndicates of investors, will locate on an "exchange floor" where member brokers will come to market their risks. Because the exchange is particularly suited for the writing of large insurance and reinsurance contracts, it is envisioned that each syndicate will accept only a small portion of any one risk. Consequently, brokers are expected to follow the Lloyd's practice of presenting a risk to several different syndicates in succession. Moreover, the member syndicates and brokers must maintain principal offices in New York for the purpose of transacting insurance and reinsurance business on the exchange.

The New York Insurance Exchange will differ in one important respect from Lloyd's of London. Lloyd's syndicates are essentially unrestricted in the types of property-liability risks they can underwrite. In New York, however, most types of *direct* insurance risks located in the United States will not be placed through the exchange. Syndicates on the New York Insurance Exchange will be constrained to underwriting: (1) reinsurance and (2) direct insurance on risks located outside the United States. The only exceptions to these restrictions will be on risks that have been refused by Free Zone-licensed companies: these can be underwritten directly by syndicates on the exchange. However, syndicates will not be restricted to writing either property-liability or life insurance. The same syndicate can qualify to participate in both types of insurance simply by increasing its capital from $3,550,000 to $6,550,000.

By concentrating on reinsurance, the exchange will be promoting a market that has been growing rapidly in the United States. Since 1952, the total amount of American premiums reinsured has increased by more than 10 percent per year, and the fraction of that total reinsured with American companies has grown even faster. Before World War II, more than half of all American reinsurance premiums was ceded to foreign reinsurance companies; but, in 1976, only about one fourth of American reinsurance was going abroad. To some extent, this trend reflects the willingness of foreign reinsurers to establish United States branches and subsidiaries to obtain easier access to the American market. The activity of the reinsurance departments of United States primary insurers has also grown rapidly.

The New York Insurance Exchange is viewed as a complement to the Insurance Free Zone. While the New York Insurance Department will monitor the operations of the New York Insurance Exchange, like Lloyd's of London it will be largely self-regulated. The constitution establishes minimum capital requirements for underwriting members. It also empowers the board of governors of the Insurance Exchange to establish procedures for ensuring the financial soundness and ethical conduct of the exchange's membership.

London's preeminence in insurance is the result of two factors: its huge capacity which enables it to handle very large risks and its adaptability to the world's rapidly changing insurance needs. The New York Insurance Exchange and the Free Zone together should go a long way toward improving New York's relative competitiveness in the international insurance market. The existence of a central market place, with its easy interchange of brokers and underwriters, is expected to foster competition and increase the efficiency of the New York market to write reinsurance and to place international risks. The insurance exchange should also make the New York insurance industry more accessible to individuals with capital to invest, thereby expanding the capacity of the New York market. In addition, the relaxation of certain statutory controls applicable to large commercial risks within the Free Zone and the self-regulation of the Insurance Exchange should vastly increase the flexibility of New York underwriters.

These regulatory and institutional changes will attract business from other insurance centers and increase the concentration of large nonstandard property-liability insurance activity in New York—to the benefit of the city's employment and income. Although such effects are difficult to project, the Governor's economic affairs cabinet has estimated that within two years after their implementation, the Insurance Free Zone and the New York Insurance Exchange will together contribute between 1,100 and 2,500 new jobs to New York City's insurance work force. If one also considers the additional induced effect on noninsurance employment, the city's total job increase is projected to be between 3,500 and 4,500 after two years and as much as 8,000 after ten years. Clearly, the potential contribution to the city's economy could be significant.

Outlook for the future

Insurance employment in New York City is likely to stabilize in the next few years. Some of the forces contributing to the past erosion of jobs appear to be eas-

[12] The constitution and bylaws that were approved by the state legislature February 26, 1979 allow the New York Insurance Exchange to begin functioning on or after March 1, 1979, but in all likelihood the earliest it can begin business is in October.

ing, and their negative impacts are likely to be offset, at least in part, by new jobs attracted to the city by the development of the Free Zone and Insurance Exchange.

While total employment is likely to stabilize, the composition of insurance jobs probably will continue to shift. New York is likely to lose additional low-paid clerical positions. Automation continues to reduce the number of these jobs industrywide, and advances in communications and computer technology have already increased the geographical autonomy of insurance processing centers to the disadvantage of New York City. There is little evidence that incentives for dispersal of processing operations have been reduced significantly. However, by now, this process may have largely run its course.

The prospects for other headquarters-related jobs depend on the relative costs of doing business in New York. Sophisticated communications systems have made it possible for many headquarters functions to locate anywhere in the country, but at the same time there have been more moderate increases in New York City's wages, consumer prices, office rents, and taxes over the last two years than in most other cities. If these trends continue, New York's future as a headquarters center can be expected to brighten.

Sales-related employment gains depend on the growth of the market served. The growth of sales personnel dealing in individual insurance in New York will be closely related to the expansion in the local economy, which is likely to lag the rest of the nation over the next few years. In contrast, significant employment gains are possible in the sales and underwriting of large nonstandard policies. These activities continue to be attracted by many of the same forces that originally drew the industry to the city—the concentration of corporate clients and the easy personal contact made possible by New York's well-developed office infrastructure. In addition, the recently instituted Insurance Free Zone and forthcoming New York Insurance Exchange should enable the city's property-liability industry to increase its share of the worldwide market in large commercial risks.

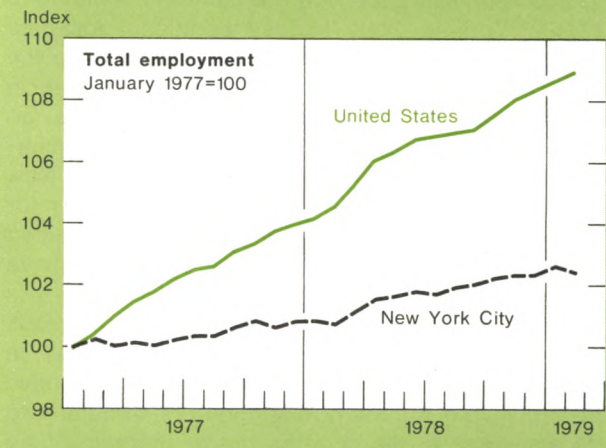
As clerical and processing jobs decline and insurance marketing personnel become more dispersed nationally, New York's insurance jobs are becoming increasingly concentrated in the underwriting, brokerage, and management functions. This is the core of the industry that most depends on what New York has to offer—a market environment that encourages easy face-to-face communication. By building on its ability to provide such an atmosphere, New York should be able to retain and promote this key sector of the insurance industry.

Janet Spratlin Young

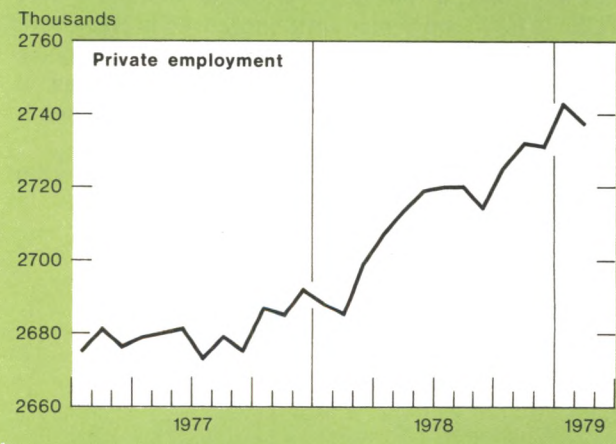
THE ECONOMY OF NEW YORK CITY

The labor market shows some improvement.

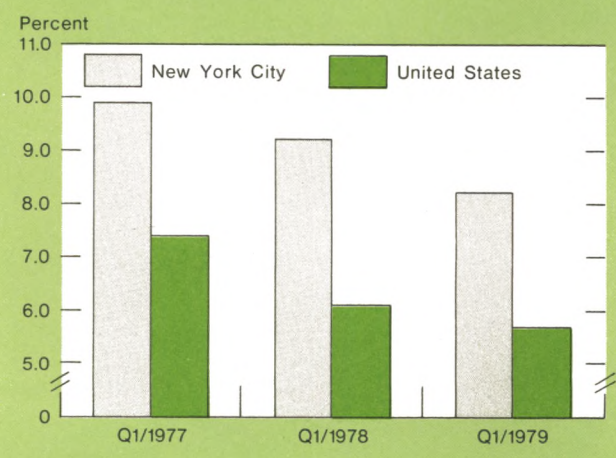
Employment is expanding, although at a slower rate than in the nation.



The bulk of the job gains are in the private sector.



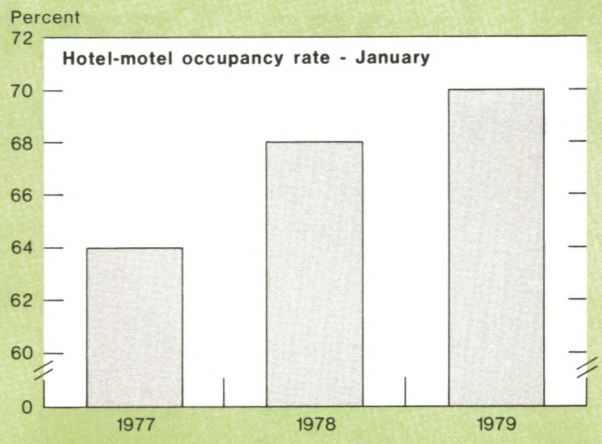
The rate of local joblessness has declined, but remains a serious problem.



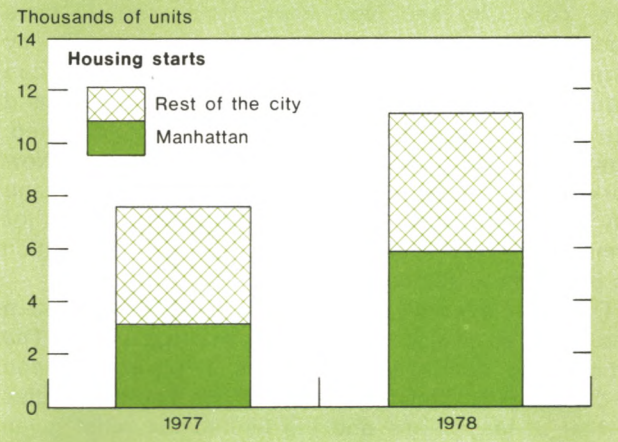
All New York City employment data are seasonally adjusted by the Federal Reserve Bank of New York.

Other indicators of economic health point to further progress.

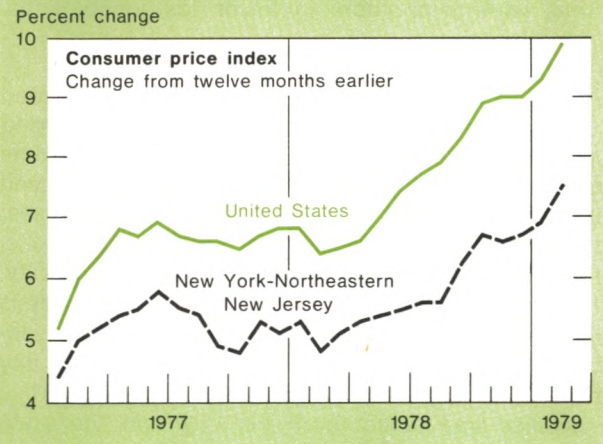
Tourism continues to grow.



Housing starts are increasing with most of the activity in Manhattan.



While upward price pressures are building, inflation remains more moderate in the New York area than in the country as a whole.



Prepared by Rona B. Stein.

Business Taxation in New York City

New York City and New York State recently have made serious efforts to improve their economies by lowering business taxes. Some tax rates have been reduced, many incentives have been added and strengthened, and some taxes have been abolished. However, much remains to be done. Businesses in New York City still face a complicated system of state and city tax laws which impose higher operating costs for firms located here and reinforce the city's reputation as being inhospitable to business.

This article briefly reviews the present tax system and notes some general ideas for restructuring it. The article also points out two areas in particular need of change—the heavier taxation of small firms relative to that of large firms and the limited tax relief given to firms with competitors in lower tax jurisdictions.

The complexity of business taxation

New York City's and New York State's complicated tax systems consist of franchise-type taxes assessed according to the net income, total revenues, or some measure of the value of the firm; other taxes assessed on the value of goods and services used by businesses; and tax incentives in the form of credits, deductions, and exemptions which lower taxes for firms that qualify. While a company or a single division of a company is subject to only one franchise-type tax, it may be subject to other business taxes and be eligible for any number of the tax-incentive programs.

Franchise-type taxes. Both the city and the state impose separate franchise taxes on banking corporations, public utilities, and "9A" corporations—a broad category which covers most corporations and is named after the statute that created the tax at the state level. A similar type of tax is imposed on the adjusted net income of unincorporated businesses. (The state's unincorporated business tax is being phased out.) Insurance companies are subject to state franchise taxes. The separate treatment at both the state and the city levels of each of these five categories only hints at the complexity of business taxes. Many of these franchise-type taxes, for instance, provide a number of alternative methods of computing tax liability.[1]

Compounding the complexity of the tax systems is the diversity in the rates of taxation (Table 1). For New York State, income tax rates are 12 percent for banking corporations, 9 percent for insurance companies, 10 percent for 9A corporations, and 4.5 percent for unincorporated businesses.[2] Insurance companies are also subject to an additional tax on the amount of their net premiums. The rates are 1 percent on net premiums for accident, health, and life insurance poli-

[1] For example, the state's tax on 9A corporations specifies four alternative methods for computing tax liability. The one yielding the highest amount must be used. Two methods involve a tax on net income applied either to the "entire net income" allocated to New York State or to allocated income-plus-salary payments (designed to prevent closely held corporations from avoiding this tax by paying out profits as salary). A third method uses a different tax rate which is applied to the firm's business and investment capital allocated to New York State. The last method is simply a minimum tax of $250. Almost 90 percent of the revenue from this tax is derived from the income or income-plus-salary basis with an additional 8 percent coming from corporations paying the minimum tax. Corporations are also subject to a tax based on the capital of subsidiaries.

[2] Public utilities are taxed on their gross income; however, these taxes are not considered here.

Table 1

Rates for Selected Taxes on Business*

Type of tax	Tax base	New York State: Recent peak	New York State: Current or scheduled	New York City: Recent peak	New York City: Current or scheduled
Financial corporations:					
Savings banks and savings and loan associations	Allocated net income†	15.6%‡	12%	12.134%	12.134%
Other banks	Allocated net income†			13.823%	13.823%
Insurance companies	Allocated net income†	9%§	9%§	#	‖
Other "9A" corporations	Allocated net income†	12%‡¶	10%	10.05%	9%
Unincorporated businesses	Allocated net income†	5.5%	0 (1981)	4%	4%
Property tax	Assessed value			8.795%	8.75%
Commercial rent tax	Rent per premises			7.5%**	6%** (1981)
Sales and use taxes	Purchase price	4%	4%	4%	4%
Stock transfer tax	Per share			$ .0625‡**	0 (1981)
Occupancy taxes:					
Commercial rents	Per premises			$12.00/year**	$12.00/year**
Vending machines	Per vending machine			$ 2.00/year**	$ 2.00/year**
Hotel	Per room			$ 1.00/day **	$ 1.00/day **

* All major taxes, except on public utilities and payroll, are included.

† Allocated net income is the amount of a firm's total net income subject to New York taxes.

‡ Includes tax surcharges.

§ Insurance companies also pay a tax on net premiums. The maximum tax liability for insurance companies cannot exceed 2.6 percent (previously 2.65 percent) of net premiums.

\# New York City used to impose a premium tax on all insurance policies written locally. The rates in 1974 were 0.6 percent for New York City insurance companies and 0.4 percent for non-New York city companies.

‖ The city imposes a premium tax on fire insurance policies written by non-New York City companies. The amount paid can be credited against state taxes.

¶ Omnibus (bus) corporations also paid an additional tax of 5.75 percent.

** Maximum rate.

Sources: Commerce Clearing House, Inc., and New York State Department of Commerce.

cies and 1.2 percent on net premium for other types of insurance.

At the city level, tax rates on the net allocated income basis also differ between industries. Commercial banks pay 13.823 percent, while savings banks and savings and loan associations pay 12.134 percent. Most other corporations pay 9 percent, and unincorporated businesses pay 4 percent.

Three features of the franchise-type taxes are noteworthy. First, because of this plethora of tax laws, different subsidiaries of the same company may be required to pay taxes computed at different rates. Second, some of these taxes result, in effect, in double taxation. The unincorporated business tax assesses for a second time practically all the salaries paid to partners and proprietors who also pay personal income taxes on this same income. Similarly, part of the salaries paid by corporations to officers and to holders of more than 5 percent of the company's stock is taxed twice under the income-plus-salary method, which many small, closely held firms must use to compute their tax liability.[3] Third, while most of the tax rates for these franchise-type taxes are still much higher than before New York City's fiscal crisis in the mid-1970's, many tax rates have recently been lowered. For example, New York State's 30 percent surcharge on financial corporations, as well as other surcharges imposed at the height of the fiscal crisis, has been allowed to lapse. In addition, the tax base for insurance companies was shifted from exclusive reliance on

[3] Over 90 percent of the firms having to compute their taxes on the income-plus-salary basis paid less than $3,000 in corporation taxes to the state in 1975-76. New York State Department of Taxation and Finance, *Statistical Supplement to the Annual Report of the Department of Taxation and Finance and New York State Tax Commission, 1977-78*, Table 3.

Table 2
Description of Tax Incentives

Incentive	Requirements	How realized	Level
New York State			
Investment tax credit	Investment in production facilities	Credit against corporation or unincorporated business taxes	4% of the value of the investment
Employment incentive tax credit	Received investment tax credit plus increase in employment of 1% from level in year before investment made	Credit against corporation or unincorporated business taxes	2% in each of three years after taking the investment tax credit
Job incentive credit	Certification by job incentive board as an "eligible business facility" (must sell product beyond local market, have five or more employees, and have a training program)	Percentage reduction in franchise-type taxes otherwise owed	The credit can be claimed for up to ten years and is the average of two ratios: qualified new investment in the "eligible business facility" to the firm's total land, plant, and equipment within the state; and salaries and wages for the jobs created or retained to the firm's total salaries and wages within the state.
One-year write-offs	Investment in tangible business property for research and development, industrial waste treatment, and air pollution control facilities	Deduction from taxable income	Can deduct the whole cost in one year
Change in allocation of income rules	Out-of-state sales, payroll, or property	Reduces proportion of income allocated to New York State for tax purposes	Sales factor given double weight in allocation formula*
Sales and use tax exemptions	Fuel, machinery, and equipment purchased for production; and materials, machinery, and equipment purchased for research and development, waste treatment, and pollution abatement facilities	Exempt, or tax paid is allowed as credit against income tax.	Eliminates tax
New York City			
Double deduction for depreciation	Investment in depreciable assets used for production	Deduction from taxable income	Up to twice Federal depreciation allowances
One-year write-offs	Same as for state	Same as for state	Same as for state
Property tax exemptions	New construction or reconstruction of industrial and commercial facilities, granted by Industrial and Commercial Incentive Board	Increase in value exempt from property tax	First year: 95% for all but new construction of commercial (initial exemption for it is 50%) Following years: Decreases 5% per year until eliminated
Moving cost credit	Move into New York City from out-of-state with ten or more commercial or industrial job opportunities	Credit against corporation or unincorporated business taxes	Up to $300 per new commercial job and $500 per new industrial job
Property tax stabilization	Move into New York City from out-of-state with 100 or more industrial or commercial jobs and rent space, eligibility determined by the Industrial and Commercial Incentive Board	Credit against corporation or unincorporated business taxes	Equal to any increase in property taxes passed through under the lease for a period of up to ten years
Sales and use tax exemptions	Machinery and equipment purchased for production; and materials, machinery, and equipment purchased for research and development, waste treatment, and pollution abatement facilities.	Exempt, or tax paid is allowed as credit against income tax.	Eliminates tax

* For more detailed explanation of recent changes in New York State's allocation rules, see text.
Sources: Commerce Clearing House, Inc., and New York State Department of Commerce.

net premiums received to a less onerous combination of premiums and income, with the maximum tax liability lowered from 2.65 percent to 2.6 percent of net premiums. (For a discussion of the taxation of insurance companies, see the accompanying article on pages 9-19.)

Other business taxes. New York City and New York State also impose several other taxes on the goods and services used by businesses.[4] State and city sales taxes—each assessed at 4 percent—tax many of the goods and services used by businesses. (Both levels of government also impose a "use" tax on purchases made outside their jurisdictions but used within them.) Although purchases of goods that become part of the final product are exempt from the sales and use taxes, other items such as computers, materials used in the construction of new buildings, and machinery and equipment used by service industries are all taxed.

New York City has a number of additional levies. Rental payments on property used for business purposes are taxed under both the commercial rent tax (the maximum rate is now 6.75 percent, down from 7.5 percent in 1977) and the general occupancy tax (the maximum flat charge is $12 per rented premises per year.) There are other occupancy taxes as well. Vending machines and hotel rooms are taxed, respectively, at maximum rates of $2 per machine per year and $1 per room per day. The stock transfer tax is being reduced in stages and is scheduled to be phased out in 1981. Real property, *i.e.,* land and buildings, are taxed at a rate of 8.75 percent on assessed value.

Tax incentives. New York City and New York State offer a myriad of tax incentives. The proliferation of these programs and the strengthening of existing ones have been part of the city's and state's response to the deterioration of their economies. Although fiscally incapable of making substantial cuts in basic tax rates, both levels of government have used their tax-incentive programs to foster the development of the private sector. These programs are well intentioned, and they do reduce taxes for those firms that meet the eligibility requirements. Unfortunately, they also contribute to the overall complexity of the tax system by creating a host of exemptions, deductions, and credits. (The major features of the tax incentives are summarized in Table 2.)

New investments may qualify for one of three different tax breaks. The state's investment tax credit provides a credit against taxes equal to 4 percent of the value of any investment in production facilities. If the same firm increases its employment 1 percent subsequent to this investment, then it also qualifies for an employment incentive tax credit which is set at one half the investment tax credit and may be taken in *each* of the following three years. The city does not offer any type of investment tax credit but does allow firms to take depreciation deductions at up to twice the Federal rate. An alternative credit (the job incentive credit) is available at the state level for firms investing in either production or nonproduction facilities such as office buildings. In contrast to the investment tax credit, in which the amount of the credit varies with the investment outlay, the amount of the job incentive credit varies with the firm's profits since it is set as a percentage of the taxes otherwise owed. As a third option for investments in facilities for research and development, industrial waste treatment, or air pollution control, firms can depreciate the entire amount of these expenditures in one year.

New investments may also qualify for relief from sales and use taxes and from property taxes. Most purchases of machinery and equipment are exempt from sales and use taxation, as are all purchases made to operate the facilities eligible for the one-year write-offs.[5]

In New York City, investments in new construction or reconstruction of buildings are eligible for exemption for up to nineteen years from property taxation. Large firms moving into the city from outside the state and renting their space can be insulated from increases in property taxes passed through under their leases, even if the increases result from building improvements. Moreover, some firms moving in are also eligible for tax credits to offset their moving costs.

Many businesses will benefit from two recent changes in the state's rules for determining the proportion of their net income subject to taxation by the state. This proportion is related to the amount of "business" the firm does within the state by using an allocation formula that takes into account how much of a firm's sales, payroll, and property are within the state. One of the recent changes doubles the weight given to the sales factor. This lowers taxes for a firm whose percentage of sales inside the state is smaller than its percentages of in-state payroll and property. The other change now allows firms which do not have a "regular place of business" outside the state to allocate their income. The savings from these modifications can be substantial (see chart).

[4] Omitted from the text are payroll taxes for unemployment insurance and workmen's compensation. The rates for these taxes vary among firms within the state as well as between states.

[5] New York City does not actually exempt the purchase of manufacturing machinery and equipment from sales and use taxes but accomplishes the same objective by allowing firms to claim these taxes as credits against their franchise taxes. The reason for choosing this less direct method is that these taxes cannot be altered because the legislature has made their revenues allocable to the Municipal Assistance Corporation to pay its debt obligations and operating expenses.

Illustration of the Reduction in Income Subject to New York State Tax Due to Revised Allocation Rules*

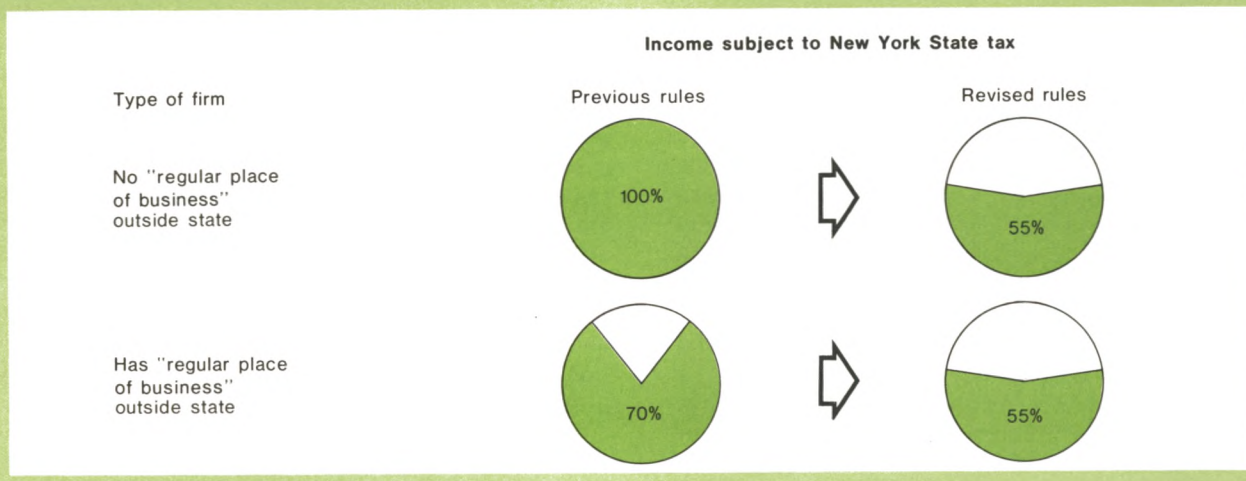


*Illustration based on firm with 10 percent of sales, and essentially all property and payroll within the state. For discussion of allocation rules see text. Revised formula allows firm to allocate income even without a "regular place of business" out of state and gives double weight to the sales factor. For example, the 55 percent is (2(10%) + 100% + 100%) /4.

Forging the tax system into an efficient tool to promote the recovery of the local economy is a difficult task. Nevertheless, even a simple overview can uncover areas in particular need of change. At least two stand out: the taxation of small firms relative to that of larger firms and the taxation of firms that sell some or all of their product outside the state.

Small firms

Small firms are particularly hard hit under the present tax system. Although both the city and state tax firms of all sizes at a uniform rate, the effective tax rate declines with firm size because state and local taxes are deductible from Federal taxable income. Those firms paying at the highest marginal bracket on their Federal corporation tax return end up with a net city and state tax of about half the sum of the statutory rates, whereas small firms pay a net tax of more than three fourths the statutory rates.[6] In addition, because many small businesses are unincorporated or closely held, much of their income is double taxed.[7]

Not only are small firms taxed at a higher effective rate than larger firms, but they are excluded from taking advantage of a number of tax incentives. For example, eligibility for New York City's moving credit is restricted to firms employing at least ten workers and the property tax stabilization program requires a firm to have at least one hundred employees.

The imposition of a higher tax burden on small firms seems inappropriate. While the exact number of jobs provided by small firms is unknown, nearly 90 percent of the city's business establishments have fewer than twenty employees and account for a significant fraction of output in the city. A further reason to encourage small firms is the city's traditional role as an incubator for small, innovative firms. The long-run economic development of the city may depend on its

[6] The effective rate of state and local taxation depends not just on their statutory rates but also on the Federal tax rate. For example, most corporations are taxed at 9 percent by New York City and 10 percent by New York State. However, taking into account the interactions resulting from the deduction allowances by the state for local taxes and by the Federal Government for both state and local taxes, the total tax burden is only 55.774 percent for firms subject to the maximum Federal rate of 46 percent and 32.023 percent for firms subject to the minimum Federal rate of 17 percent which applies to corporations with profits of less than $25,000. Thus, the state and city taxes create an additional tax liability of 9.774 percentage points for the large firms and 15.023 percentage points for the small firms.

[7] The unincorporated business tax contains a tax credit designed to help firms with very small profits. Because this credit decreases as profits increase, there is a range in which the effective tax bite on each additional dollar of profit is twice the statutory rate.

ability to attract and hold firms from their earliest stages of development.

Export-based firms

In addition to burdening small firms, the city's tax system, in particular, provides insufficient tax relief to many of the firms selling some or all of their product outside the state. As a result, many of the jobs provided by these so-called "export-based" firms have moved elsewhere. Originally, these firms were considered the best ones to tax since it was presumed that they could shift part of the tax burden to their out-of-state customers in the form of higher prices. However, advances in communications and transportation have made it easier for many of the businesses in New York City to be located elsewhere. While the loss of jobs is not wholly attributable to taxes, for many firms the relative level of taxation plays an important role in their location decisions. Consequently, only when the city offers relative cost advantages can it impose higher taxes than other localities without losing its role as a major center of manufacturing activity or even of legal, business, and financial services.

In this environment, New York City needs to change its treatment of export-based firms. Under the city's rules for determining the amount of a firm's income which is subject to local tax, only those firms with a "regular place of business" outside the city can allocate their income. This prerequisite of an out-of-city office is detrimental to the city's economy since it encourages firms to set up satellite offices which, once established, provide an alternative location from which a firm can easily expand. Furthermore, even firms eligible to allocate their net income may not receive sufficient tax relief to compete with firms located elsewhere because the city weighs payroll and property equally with sales in its allocation formula.

Options for improving business taxation

In the near term, a complete revamping of New York City's and New York State's tax systems is not possible. Budgetary requirements and the enormity of the task preclude changes that would significantly lower the tax receipts of either level of government. Nevertheless, small adjustments are feasible.

As a first step in tax reform, the effectiveness of the current incentives in attracting or preserving jobs needs to be assessed. How many firms have relocated in the city because of these special tax relief programs? How many firms would have expanded in the city anyway? How many firms already located in the city with no plans to leave are able to take advantage of these programs?

Answering these questions is not easy. Even a tax incentive that is initially well constructed may later run into difficulties. New York City's program of property tax exemptions for construction and reconstruction of commercial and industrial properties illustrates this problem. While the extent to which it spurs construction is unknown, the bulk of the tax relief has gone for new office buildings of large national corporations already located in the city. More importantly, this tax incentive may now be unnecessary for Manhattan in view of the revival of construction activity.

A hard-headed reexamination of the tax incentives would probably lead to the elimination of many of those presently offered. All but the ones visibly contributing to the recovery of New York's economy should be phased out, and no new tax incentives should be added unless their net benefit is clear. A thorough overhaul would yield two benefits. First, the complexity of the system would be reduced, and the costs of confusion produced by the present system would be diminished. Second, the revenue saved could be devoted to other forms of tax relief such as lowering some tax rates. Here also, care must be taken in selecting which taxes to reduce.[8]

Some taxes are being eliminated. Both the state's unincorporated business tax and the city's stock transfer tax are now being phased out. The elimination of more taxes in order to simplify further the tax system is generally very costly in terms of revenue loss (see Table 3 for the revenue raised by each of the major taxes). However, the city's occupancy taxes on commercial rents and vending machines—they raise a total of only $1.5 million—can easily be removed. As a by-product of such a move, both the city and the business community would realize savings on administrative and paperwork costs. Eliminating the occupancy tax on commercial rents may be even more significant due to the symbolism of eliminating the duplicate taxation of commercial rents, leaving only the commercial rent tax. Since perception of the city's attitude may be an important factor in firms' location decisions, a tax cut that simplifies the tax system should yield the additional benefit of counteracting the city's past image as a place inhospitable to business.

The bias against small firms should be examined.

[8] A major portion of the revenues devoted by the city to tax relief has gone recently to reduce the commercial rent tax. However, the beneficial effects from cutting this tax may not have been as large as expected. Although its reduction may help to placate those business people who find its existence particularly onerous, the actual cost savings to firms signing new leases may be marginal. In the short run at least, the benefits most likely accrue to landlords who can increase their rental charges in correspondence with the fall in the tax rate. The competitive position of New York City as a location for business may thus be unchanged. Of course, in the long run, such an increase in the return to landlords may help prompt an increase in the supply of rental space.

Table 3

Revenue From Business and Other Major Taxes

Type of tax	New York State revenue: Millions of dollars	New York State revenue: Percent	New York City revenue: Millions of dollars	New York City revenue: Percent
Corporation ("9A") tax	1,005	8.7	479.4*	7.6
Financial corporation tax	169	1.5	150.0*	2.4
Unincorporated business tax	50	0.4	70.6*†	1.1
Utilities tax	480	4.2	109.1	1.7
Insurance taxes	201	1.7		
Commercial rent tax			200.7	3.2
Occupancy taxes:				
Commercial rent and vending machines			1.5	‡
Hotel			10.8	0.2
Stock transfer tax			198.1	3.1
General property tax			3,186.9	50.3
Personal income tax	4,894	42.4	710.8*	11.2
General sales and use taxes	2,590	22.4	971.0	15.3
Other	2,166	18.7	248.1	3.9
Total	11,555	100.0	6,337.0	100.0

* Net of refunds. † Unlike the state, New York City does not exempt professionals from this tax. ‡ Less than 0.1 percent.

Sources: New York City Office of Management and Budget, *Executive Budget—Fiscal Year 1979, Supporting Schedules,* pages 3R-4R, and New York State Division of the Budget, Fiscal Year 1979.

The tax rate for these firms could be lowered and size requirements for tax incentives could be removed. Furthermore, the double-taxation feature in the franchise-type taxes that small businesses generally pay should be eliminated. The city's unincorporated business tax and the city and state taxes on 9A corporations could be revised so that tax liability on salaries is limited to the higher amount of that computed under these taxes or of that computed under the personal income tax. A major benefit of such a change, particularly in the case of the unincorporated business tax, would be to reduce significantly the incentive for the partners and proprietors of these companies to live outside the city. Since the city's unincorporated business tax is 4 percent and the maximum personal income tax on residents is 4.3 percent, the owners of these businesses would pay essentially the same amount of tax regardless of where they reside.

Export-based firms also need to be studied to determine which ones, with further tax relief, would be able to operate profitably in New York City. At a minimum, the city should move toward the state's new income allocation rules, allowing firms to allocate net income whether or not they have a "regular place of business" outside the city and to give double weight to the sales factor.

The outlook

New York needs to overhaul its tax system. In the short run, fiscal constraints limit the extent of change possible. Yet, despite these constraints, some minor taxes can be eliminated and tax incentives strengthened. Greater tax relief needs to be directed to small firms and those competing for market share outside New York. In the long run, New York City and New York State need to simplify their tax systems as well as to lower taxes. While the recent tax cuts have undoubtedly aided business, further tax changes can play an important role in spurring the economic recovery of New York City.

Mark A. Willis

A Banker Looks at the Examination Process

Excerpts from a talk given by Donald C. Platten, *Chairman, Chemical Bank, before a group of Federal Reserve Bank of New York examiners on January 23, 1979. His remarks should be of wide interest to bankers.*

When I entered the banking business thirty-seven years ago, there was a common saying that "Nobody loves his banker". That statement wasn't entirely true even then, but there was some truth in it. A corollary was that a banker was not exactly overjoyed to see the examiners on his doorstep.

The stereotype of a banker then was a flinty-faced naysayer, who asked embarrassing questions and then didn't believe the answers. The stereotype of a bank examiner was a nitpicker in a green eyeshade who was at best a nuisance, and at worst a threat. Neither stereotype is valid in today's complex, changing world.

Considering the pace of change in our industry over the last ten years, it is fair to say that banks and their examiners have been undergoing what could be called a "shared revolution". As I reflect on the many changes that have taken place, it occurs to me that one of the most important has been a crucial shift in the relationship between the bank and its regulators. More than ever before the regulator and the regulated are what might be called "friendly adversaries", each with a common interest in seeing the job well done, even though they approach it from differing viewpoints.

As the banking industry has become increasingly diversified and far-flung, and as the challenge of managing it grows in geometric scale, the burden falls ever more heavily on our internal systems, on our external auditors, and most certainly on the examiners. They must check and double-check procedures and controls. They must alert us to danger signals and let us know where we have blundered, as we sometimes do.

Because of this rising challenge to the examination process, I am very encouraged by the innovations I see taking place in bank examination methods today. Developments such as the Shared National Credit Program, Uniform Country Risk Evaluation, and the Uniform Interagency Bank Rating System are altogether constructive and bound to save wasted motion on both sides.

Perhaps the most promising innovation of all is the recent focus on the "top-down" approach to bank examination. This approach is not only cost effective, in terms of both money and manpower, but also represents a form of "preventive medicine". A careful evaluation of systems and controls *before* trouble occurs is the best method of preventing trouble. Moreover, a "systems" approach such as this will be increasingly necessary, for banks and regulators alike, if we hope to maintain effective control of far-flung, complex, and diverse operations.

The expansion of United States banks overseas means an increasingly widespread physical organization. These banks, operating in varying cultures, employing growing numbers of foreign nationals, will have a growing need to evaluate political and economic risks as well as the managements of foreign companies whose disclosure standards do not match our own. At the same time, as banks become more heavily involved

in activities such as foreign exchange trading, where risks are very high within a short time span, there will be a much-heightened demand for tough, tight, and sensitive controls.

If the barriers to interstate branching are lifted soon —as many competent authorities predict—dozens of banks will be expanding, perhaps too rapidly, into unfamiliar territory. It seems certain this expansion will change competitive relationships and market shares. The pressures and temptations will be great and, perhaps, push some managements and control systems to the limit—or beyond.

At present, our entire society is going through a revolution not only in its regulatory apparatus, but in the whole relationship of the people to their government. It isn't a very orderly revolution. In some areas there has been deregulation or streamlining of existing regulation. Witness the very promising deregulation of airline fares. But there have also been too many cases of clumsy or unworkable new regulations.

Proposition 13 in California, and the events related to it, reflect the public's ambivalence toward the role of government in their lives. The people have made it clear that they want their taxes cut. At the same time, they want public services *increased* in areas such as education and health. But this contradiction is only on the surface. According to opinion analysts, what the people really want from government is *excellence.*

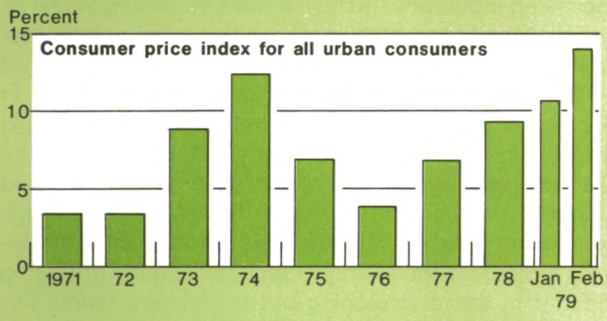
And that, of couse, is what both sides want in bank regulation—excellence, relevance, realism of the rules. But, however much the regulation of banks may improve and adapt to changing realities, and no matter how much both sides may share a commitment to, and a desire for, excellence we will remain, and we *should* remain, "friendly adversaries", each with our separate priorities and points of view.

An ancient Greek philosopher once spoke of what he called "the harmony of tension" in an adversary relationship. I think that expresses it very well. I hope these remarks will serve to increase the harmony between banks and examiners without entirely removing that necessary tension.

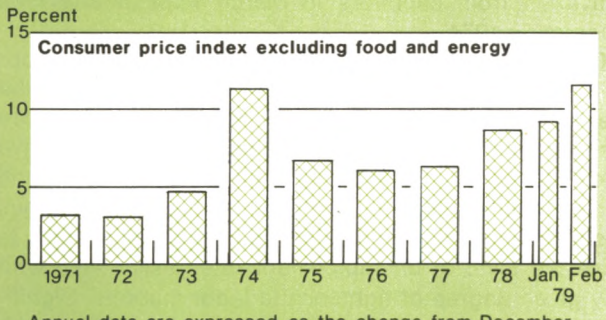
The business situation
Current developments

Chart 1

Inflation accelerated in early 1979 . . .



. . . even disregarding food and energy prices, which were subject to special influences.



Annual data are expressed as the change from December of the preceding year to December of the year shown. Data for 1979 are expressed at seasonally adjusted annual rates.

Source: United States Bureau of Labor Statistics. Index excluding food and energy calculated by Federal Reserve Bank of New York.

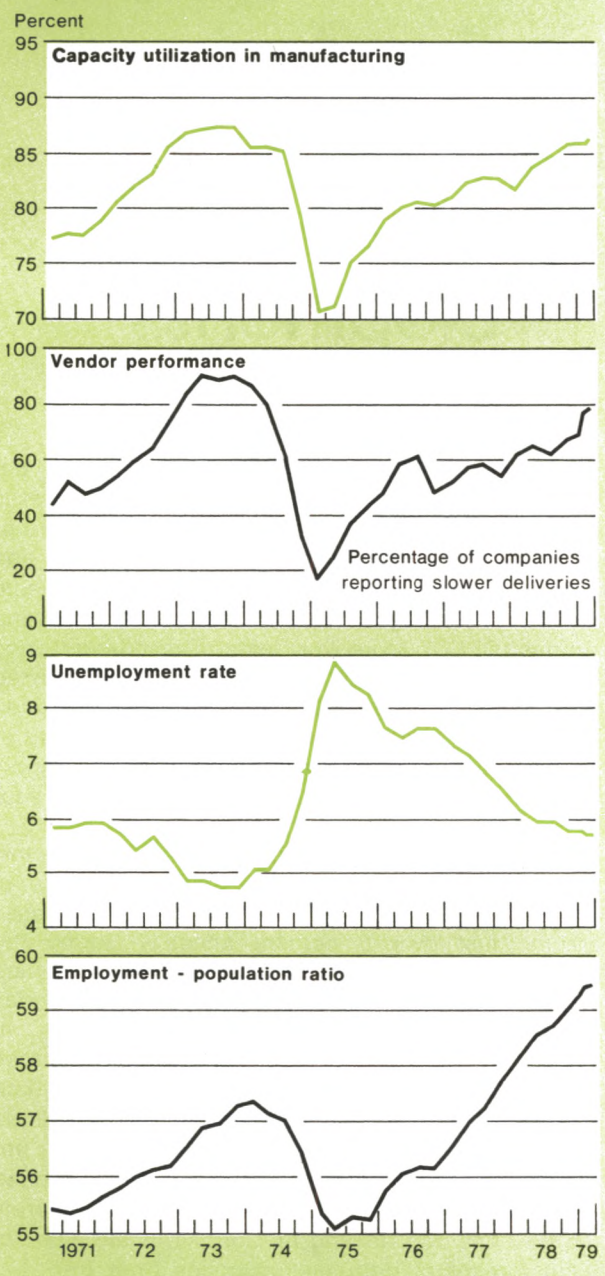
Inflation flared up in early 1979 with an intensity not felt since 1974. Some of the largest price increases were related to special circumstances, such as disruptions of food supplies by severe winter weather and the sharp increases in prices of imported petroleum imposed by the Organization of Petroleum Exporting Countries (OPEC). Moreover, fears of mandatory price controls may have prompted some increases in posted prices. More fundamentally, however, the acceleration of inflation across a wide variety of goods appeared to reflect the confluence of demand pressures and supply constraints typical of the advanced stages of an economic expansion.

The acceleration of inflation actually began last year, when the consumer price index for all urban dwellers rose 9 percent, compared with increases averaging just over 6 percent annually during the three preceding years. The pace of inflation quickened further early this year, with the consumer price index rising at annual rates of more than 10 percent in January and February (Chart 1). Prices of food rose especially sharply during the winter, reflecting both temporary consequences of supply disruptions related to severe winter weather and also the longer run upward trend of beef prices as the slaughter continued to decline. Consumers were also hit hard by sharply rising gasoline and heating fuel prices in the wake of the curtailment of petroleum supplies from Iran and the subsequent large increases in oil prices by the oil-exporting countries. Increases were more moderate for the broad range of other finished goods and services, but those increases—taken as indications of the underlying rate of inflation—also were distinctly higher than in 1978.

Some more recent price developments may contain

Chart 2

Shrinking Margins of Unused Productive Capacity



Data for 1979 are plotted monthly; 1971 through 1978 plottings are quarterly.

Sources: Board of Governors of the Federal Reserve System, Purchasing Management Association of Chicago, and United States Bureau of Labor Statistics.

a glimmer of hope for the consumer. Thus, while producer prices of finished food products rose rapidly again in March, prices of both crude foodstuffs and intermediate food products edged up only slightly further following extremely large increases during the two preceding months. Spot prices of various agricultural goods traded on commodity markets have been declining over the past several weeks as well. These price developments in transactions at the earlier stages of production may well presage some moderation of the rate of increase in retail food prices during the spring. Producer prices of finished goods other than food and energy also advanced more slowly in March than earlier in the year.

Unfortunately, this development may not signal a downturn in the underlying rate of inflation. The economy is presently operating with a limited unused productive capacity available to satisfy increased demands for goods and services (Chart 2). The rate of capacity utilization in manufacturing, at 86.3 percent in March, was less than 2 percentage points below the rate at the last cyclical peak in 1973, according to the Federal Reserve index. Indeed, among the advanced processing industries, factories were operating in March at very close to the 1973 peak. In the primary processing industries—where most of the bottlenecks occurred in 1973 and 1974—the rate of capacity utilization in March was still substantially below the 1973 peak. However, the explosive rise in energy prices since late 1973 has rendered some productive processes and facilities obsolete, or at least inefficient. Consequently, economically viable capacity may be less than the indexes indicate. Strains on productive capacity are being reflected in some stretching-out of delivery times. For instance, a larger percentage of the companies responding to the monthly survey of the Purchasing Management Association of Chicago reported slower deliveries from suppliers in March than at any time since early 1974.

Constraints are more evident in the market for labor as well. The unemployment rate of 5.7 percent in the first quarter of 1979 was lower than at any time since the middle of 1974. To be sure, much lower rates have been attained in the past. However, demographic and social trends, together with liberalization of various programs for income maintenance, have tended to raise the level of unemployment rates associated with any given degree of tightness in labor markets. Significantly, the proportion of the working-age population with jobs rose to a post-World War II record in the first quarter. It is thus not surprising that reports of scarcities of skilled workers have become increasingly frequent in recent months, side by side with very high rates of unemployment for the unskilled, and particularly for

the minority, urban young.

The overall demand for labor remained strong in the first quarter, despite indications of at least a temporary softening of demand in a number of sectors. Total civilian employment rose at a seasonally adjusted annual rate of 4.2 percent, matching last year's unusually rapid growth rate. Nevertheless, the growth of total output as measured by real gross national product (GNP) slowed to an anuual rate of only 0.7 percent, compared with the 4 percent growth registered in 1978. At least part of the slowing of the growth of economic activity resulted from disruptions caused by severe winter weather in various parts of the nation. This was most notably true in construction activity, where state and local government projects were curtailed and private housing starts plummeted in February to the lowest level since the middle of 1976. But bad weather also affected industrial production, factory shipments, and retail sales—all of which rose only slightly over the first two months of the year. The pattern of developments suggests that productivity moved sharply lower. While that quarterly movement cannot be taken as a harbinger for 1979 as a whole, it follows two years of exceptionally low productivity growth that contributed to inflationary pressures.

While the growth of final sales was slowing in the first quarter, inventory accumulation apparently increased, especially at wholesale merchants and manufacturers of durable goods. To some extent, book values of inventories were inflated by rapidly rising prices. To the extent that adverse weather affected shipments more than production, some of the inventory investment was probably unintentional. The decline in retail inventories in February, which occurred in spite of very sluggish sales, suggests that slow deliveries were responsible for some of the buildup of stocks at factories and wholesale outlets. There was also undoubtedly some deliberate rebuilding of stocks after the surge in sales during the closing months of last year. Some of the buildup probably represented a hedge against the possibility of a work stoppage in the trucking industry, which came to pass on the first eleven days of April. Finally, the possibility cannot be ruled out that some part—probably a very small part—of the January-February inventory bulge reflected a relaxation of the cautious attitudes that have governed inventory policies of most businesses throughout the current economic expansion.

By March it looked as though the economy was recovering from the winter doldrums. Retail sales posted a sizable advance in current dollars at least. Sales were especially brisk in furniture, apparel, and smaller domestic and imported automobiles. Industrial production advanced vigorously in March, with sizable gains widespread among products and materials, especially motor vehicles and parts, steel, and coal. Nonfarm payroll employment posted another large increase. Housing starts recovered but remained well below the levels of last year.

These developments, in themselves, may merely represent a rebound from two months of less buoyant activity rather than presage new demand pressures. On the other hand, new orders received by manufacturers of nondefense capital goods, especially aircraft, rose strongly in January and February, suggesting continued growth of capital spending. But the present uncertainties in the outlook for total demand may persist for some time.

In any event, supply limits are increasingly constraining gains in output after the exceptionally rapid rise in the final months of 1978. In the circumstances, strong new demand pressures could have unfortunate consequences for cooling the inflationary surge and for future orderly growth which must be weighed against the risk of some falling away from present levels of activity.

Public service employment: its role in a changing economy

In recent years, the public service programs of the Comprehensive Employment and Training Act of 1973—more commonly known as CETA—have expanded rapidly. In 1974, fewer than 100,000 workers were employed under public employment programs. By April 1978, an estimated 755,000 people participated in these Federal programs. In fiscal 1979, about $6 billion will be spent to employ an expected 625,000 workers.

Due in part to the rapid expansion of public employment as well as to the complexity of the CETA framework, public employment has been beset by problems of mismanagement and abuse. As a consequence, major steps recently have been taken to increase the program's effectiveness. Most importantly, the program has been restructured to insure that public service jobs are provided for those most in need of assistance. At the same time, increased emphasis has been put on placing CETA workers in regular jobs through greater coordination of public and private initiatives. Toward this end, related private efforts, which expand the number of private-sector job opportunities available to the economically disadvantaged, are being encouraged.

Legacy of the great depression

The Federal Government's first significant involvement with job training and public service employment began during the 1930's. The national economy was then in the grip of a severe depression with one out of every four workers jobless. In this environment, Federally sponsored programs were developed to reduce unemployment and to provide temporary income support.

No other program generated as many public-sector jobs as did the Works Progress Administration—later renamed Work Projects Administration, or the WPA. Established in 1935, before the advent of Federal unemployment insurance, the WPA provided a minimum level of income for participants. The income support afforded by the WPA was intended, however, to be temporary. To encourage jobholders to seek nonsubsidized work, participants' wages were established below those prevailing in the private sector. Moreover, WPA employees enrolled for eighteen months were required to leave the program for at least thirty days before they could be rehired.

While the WPA was intended to provide temporary jobs, the program was regarded initially as a boondoggle wherein large numbers of participants did limited work. Gradually, however, the program was improved. In the end, the WPA's range of accomplishments was substantial. Roads, public parks, schools, and stadiums were constructed under WPA auspices. A variety of community services and cultural projects were also completed with WPA funds. Indeed, the experience demonstrated that public employment was a viable method for employing large numbers of workers with differing skill levels during long periods of high unemployment. At the height of the program in 1938, about 3 million persons, or approximately 30 percent of the 10 million unemployed, were provided jobs.

Following the peak in WPA employment in 1938, the number of participants declined steadily, and the program was abolished in 1943. By then, wartime labor shortages had developed, and public service programs were reoriented toward training in order to staff defense-related industries. In the decade following the end of World War II, public employment programs were no longer necessary because of the relatively high levels of employment and overall economic demand.

After these years of inactivity, public employment

programs were revived in the 1960's. The principal objective shifted from providing temporary economic assistance to workers who were between jobs to improving the employment prospects of the "hard-core" unemployed—those workers who were chronically unable to find jobs because of deficiencies in education, skills, or experience. This marked change in Federal policy was attributable, in part, to the relatively low levels of total joblessness that allowed the Federal Government to focus on the deep-seated employment problems facing relatively unskilled workers. Public service jobs were created to supplement existing job opportunities, but the emphasis was on job training and temporary work experience. A host of manpower programs aimed at minorities and the disadvantaged were initiated. These included the programs authorized by the Manpower Development and Training Act, as well as the Job Corps, the Neighborhood Youth Corps, and Operation Mainstream.[1]

In response to rising unemployment in 1971, the Public Employment Program (PEP) was created. Reminiscent of the work-relief initiatives of the 1930's, PEP's primary aim was to counteract cyclical unemployment—unemployment attributable to inadequate total demand in the economy. In a move toward decentralization of authority, PEP monies were distributed to local governments that were responsible for designing and conducting employment programs with minimal Federal direction. At its peak in 1972, the program employed an estimated 150,000 workers or about 3 percent of the total number of unemployed. PEP was Intended as a two-year counter-recession program. Under transitional provisions of the Comprehensive Employment and Training Act, supplemental funding became available in fiscal 1974, and the program did not begin winding down until 1975.

Consolidation and decentralization: the CETA program

The Comprehensive Employment and Training Act of 1973 consolidated the operations of PEP and other job training and public employment programs that had been developed over the previous decade. The act also formally decentralized authority for the design and operation of public service programs. State and local governments were delegated the responsibility for the development and administration of public employment activities. In this way, it was felt the programs would be tailored to local needs. The shift in responsibility, however, transferred control from the Federal agencies, which had acquired experience in the development and operation of employment and training programs, to relatively inexperienced state and local governments.

Initially, CETA was organized into four separate programs—each with its own special goals. Title II, the principal job-creation program, was aimed at regions with disproportionately high unemployment.[2] Funding was distributed according to the extent of unemployment in areas with jobless rates of 6.5 percent or higher for three consecutive months. Unemployed workers and persons from low-income families were eligible to apply, and the first participants were hired in July 1974. By the close of the year, nearly 100,000 persons were employed under public service programs.

In response to rising unemployment, a temporary countercyclical Title VI program was appended to CETA in December 1974. Applicants were required to have been unemployed for at least thirty days, or fifteen days if the local unemployment rate was above 7 percent. By December 1975, over 325,000 jobs were financed by the combined CETA public employment programs. With high rates of joblessness continuing in 1976, funding for the Title VI program was extended late in the year. At that time, stricter eligibility requirements were introduced. The majority of new public service positions was restricted to the low-income and the long-term unemployed. In addition, emphasis was put on placing CETA workers in special, short-term projects that would not have been initiated without Federal aid. The economic-stimulus package of 1977 allowed for more than a doubling of public service jobs. Most of the increase was slated for public service jobs under Title VI. By April 1978, an estimated 755,000 jobs were funded under the CETA public employment Titles II and VI. In addition, smaller scale CETA programs provided public service jobs for youths, welfare recipients, and other disadvantaged workers.

As the economy expanded, steps were taken to distinguish between countercyclical public employment and public service programs aimed specifically at the disadvantaged. In October 1978, the administrative framework of public service employment was revised. All public employment activities directed toward the low-income and long-term unemployed were combined under the Title II program. Eligibility for Title II jobs

[1] The programs authorized by the Manpower Development and Training Act initially focused on retraining workers who had been displaced by automation. Later, these programs emphasized training unskilled and inexperienced workers. The Job Corps and the Neighborhood Youth Corps provided education, job training, and work experience for young people. Operation Mainstream was aimed at older workers in small communities and rural areas.

[2] Title I provided for the continuation of comprehensive employment and training activities nationwide. Similar services were provided for special groups of workers such as youth, migrants, and older workers under Title III. The Title IV program authorized the extension of the Job Corps for disadvantaged youth. In addition, a fifth title established the National Commission for Manpower Policy to serve as an independent advisory agency.

currently is limited to persons from low-income families unemployed for at least fifteen weeks or receiving welfare payments. These public service jobs are linked directly with training and are intended to lead to regular employment in the public or private sector.

In addition to introducing administrative changes, a formula was adopted specifying the number of countercyclical jobs in a below "full employment" economy. According to this formula, when the overall jobless rate exceeds 4 percent, the number of Title VI jobs created equals 20 percent of the number of unemployed in excess of 4 percent. Should the unemployment rate exceed 7 percent, the number of public service jobs created would equal 25 percent of the number of jobless workers above 4 percent. These positions are intended to provide temporary work and income support for those who are between jobs.

Using this formula, the current rate of joblessness of under 6 percent means that the number of countercyclical jobs in 1979 will decline substantially from the 600,000 Title VI jobs authorized under the 1977 economic-stimulus package. The countercyclical program is scheduled to be cut even further in fiscal 1980. What impact these reductions will have on total employment remains to be seen. It may be that state and local governments will use their own resources to fund some of these public service jobs. In New York City, for example, the jobs of up to 7,800 of the city's 25,000 CETA workers would be eliminated because of proposed funding reductions in 1980. However, the city's 1980 budget plans provide funds to rehire about 3,000 of these CETA workers. Countercyclical funds may also become available through other Federal programs. Under a proposed urban-aid plan, cities with high jobless rates may receive $400 million over the next two years.

Although the number of countercyclical public service jobs is scheduled to be cut sharply, job opportunities for the relatively unskilled are being stepped up through greater coordination of public and private programs. Toward this end, a new Federal initiative, which seeks to involve the private sector explicitly in CETA planning, is included in CETA's 1978 reauthorization. Under this program, CETA agencies are encouraged to develop programs meeting the employment needs of private industry and to help CETA participants find private-sector jobs. At the same time, there are incentives for businesses to expand hiring and training of unskilled workers, especially disadvantaged youths.[3] An estimated 80,000 private-sector jobs are to be created under the new program by late 1980. In this vein, a revised tax credit program has also been enacted which aims at promoting job creation in the private sector by lowering the effective cost of hiring and training disadvantaged workers. Taken together, these programs are anticipated to offset most of the proposed cuts in CETA's countercyclical program. Nonetheless, because of the increased emphasis on the private sector, public service funding will decline significantly from the $6 billion authorized for public service employment in fiscal 1979.

Important steps recently have been taken to strengthen the Federal Government's supervision of CETA as a result of mismanagement and certain abuses of the program in the past, such as political patronage, fraud, and discrimination. In addition to improving overall management and efficiency, a new Federal program is designed to enhance the training and technical assistance provided by the Federal Government to local supervisory staff. This program seeks to identify successful local programs and to encourage the development of similar activities in other regions. At the same time, independent monitoring agencies are being established to improve program supervision at the local level. These agencies are charged with insuring local compliance with CETA rules and periodically evaluating local operations. In light of past abuses of the CETA program, the United States Department of Labor has been given expanded authority to investigate and to take action against possible misuses of CETA funds in order to prevent similar abuses in the future.

The cyclical impact of public service employment

Jobs created under public employment programs play an important role in a countercyclical policy. The significant expansion of CETA public employment between mid-1977 and mid-1978 was aimed at reducing the high rate of joblessness that resulted from the 1973-75 recession. In the twelve months ended April 1978, about 450,000 additional jobs were funded under the CETA programs. That increase represents roughly 12 percent of the gain in total employment during that period. Whether the actual contribution of CETA public employment was this large, however, depends on the extent to which local agencies substituted Federally financed jobs for positions they would otherwise have funded themselves. Such "job substitution", of course, reduces the effectiveness of public service programs in directly creating jobs.

Estimating the rate of substitution is difficult. Analyses of the job-creation effects of public employment programs report widely differing rates of job substitution. Several statistical studies evaluated the job-

[3] For a discussion of private-sector programs, see *Jobs for the Hard-to-Employ: New Directions for a Public-Private Partnership* (Committee for Economic Development, January 1978).

creation impact under PEP and the continuation of public employment under CETA.[4] In these studies, the substitution rates were estimated to be 30 to 60 percent one year later and, in several cases, to be substantially higher thereafter. Based on interviews with CETA staff and local fiscal data, two recent studies evaluated CETA public employment as of July 1977 and December 1977.[5] According to these surveys, between 15 and 18 percent of CETA positions were substituted for jobs that would have existed in the absence of Federal funding. These analyses, however, employed a very narrow definition of substitution. CETA jobs that maintained services which might otherwise have been curtailed were considered new jobs. Between 15 and 30 percent of the CETA jobs were involved with maintaining existing local services. Whether or not these services would actually have been discontinued is subject to question. If some of these positions had been maintained with local funds, the substitution rate would approach earlier estimates. Although the various studies of substitution are based on differing assumptions and are subject to limitations, the evidence suggests that the substitution rate of public employment programs is in the neighborhood of 40 to 50 percent about one year later and increases subsequently.

Although the estimates of earlier studies indicate there are high rates of substitution, these estimates may not be representative today, in light of new regulations. The maximum Federal contribution currently is limited to $10,000 for each new CETA worker or $12,000 for each new employee in a high-wage area. Previously, local agencies were allowed to supplement public service wages from their own budgets by any amount, but current regulations limit local agencies to adding no more than 10 percent of the maximum Federal wage paid to workers in the countercyclical program.[6] In addition, the duration of public service jobs is now generally limited to eighteen months. These regulations may significantly change the composition of CETA employment, especially in large cities where CETA had often been used to pay the salaries of city workers who would have been laid off in the absence of Federal funding. Because of expected changes in personnel, the level of community services may be affected. In New York City, for example, a major portion of the CETA work force must be replaced by October 1979 to comply with the new, stricter employment standards. The city's budget plans make allowance for problems likely to be created by replacing experienced employees with untrained CETA workers.

Public service employment and structural joblessness

In addition to creating further job opportunities, public service programs attempt to reduce structural unemployment—joblessness that reflects mismatches of skills, inadequate education, institutional barriers to employment, or geographical imbalances of job opportunities. The principal goal of countercyclical public employment is to provide jobs and income support to persons who are temporarily without work. Most of the unemployed are eligible. Structural public service programs, in contrast, are primarily for those groups of workers who suffer chronically high unemployment. Even if substitution is extensive, public service programs can be effective in reducing structural unemployment if the composition of local employment is altered to include those workers who are relatively disadvantaged. The increasing focus of public service employment on those workers most likely to face special difficulties in obtaining employment is reflected in CETA enrollment. In fiscal 1978, over 75 percent of CETA jobholders qualified as being economically disadvantaged. About one third of CETA public employment participants were members of minorities, considerably more than their share of the unemployed population.

Just how effective are public employment programs in reducing structural unemployment? One measure of the near-term success of public service employment is the extent to which participants secure nonsubsidized employment following enrollment in the program. In fiscal 1977, only about one third of the participants who left CETA public employment programs obtained regular positions in the public or private sector.[7] While data are limited, the evidence suggests that CETA workers tend to remain in public service programs. This is due, in part, to the fact that generally the length

[4] For example, see the technical analysis papers of George E. Johnson and James D. Tomola, prepared for the Office of the Assistant Secretary for Policy, Evaluation and Research, United States Department of Labor; *An Evaluation of the Economic Impact Project of the Public Employment Program* (Final Report, National Planning Association, May 1974); William Mirengoff and Lester Rindler, *CETA: Manpower Programs Under Local Control*, (National Academy of Sciences, 1978).

[5] Richard P. Nathan and others, "Monitoring the Public Service Employment Program—Preliminary Report", in *Job Creation Through Public Service Employment* (Volume II, An Interim Report to the Congress of the National Commission for Manpower Policy, March 1978), and *Monitoring the Public Service Employment Program: The Second Round* (Number 32, A Special Report of the National Commission for Manpower Policy, March 1979).

[6] To insure that those workers with the greatest employment needs participate, local agencies may not supplement wages under the CETA program aimed at the disadvantaged. Moreover, the nationwide wage goal for CETA public employment is $7,200.

[7] "Public Service Employment: An Overview of the Issues and the Evidence", in *Job Creation Through Public Service Employment* (Volume I, An Interim Report to the Congress of the National Commission for Manpower Policy, March 1978).

of participation was unrestricted, and therefore movement to regular work was less of an immediate concern. Today, the emphasis in the structural public service program is on increasing skills to prepare participants for transition to regular employment. Moreover, the new limit on CETA participation allows a greater number of disadvantaged workers to participate and provides an incentive for workers to find regular employment.

While steady work experience enhances the future job prospects of participants, to be effective these structural programs must impart knowledge and marketable skills enabling workers to acquire long-term employment. When participants in structural public service programs are assigned to low-level positions without the advantage of training, enrollment may not help alleviate the disparities between job requirements and participants' skills. In the past, public service participants have worked primarily in basic service areas—such as fire and police protection, utilities, and public works—but the work assignments have tended to require relatively few skills. Moreover, there has been only a minimal emphasis on job training. Under CETA's 1978 reauthorization, structural public service employment now encompasses job training directly. During the next four years, moreover, the proportion of funds spent on skill development under the structural program will more than double.

How successful this increased emphasis on training will be in improving the long-term job prospects of public employment participants remains to be seen. A modest improvement in near-term earnings has been found in evaluations of pre-CETA training efforts.[8] Participation in CETA's public employment programs can increase the current income level of workers. Participation may also be effective in generating short-term gains. The long-run performance of CETA's structural public employment program, however, remains to be thoroughly evaluated.[9]

Directions of public service employment

As a countercyclical policy tool, public service employment provides temporary jobs and income support to workers during periods of economic slowdown. Since public employment can be instituted relatively quickly and is likely to create more jobs per dollar spent than other policies, it is an effective short-run countercyclical tool. However, its effectiveness declines over time as local agencies come to rely increasingly on Federal funds. With the economy entering its fifth year of expansion, cyclical joblessness is not a problem today. As a consequence, and in response to past mismanagement and abuse, greater emphasis is being placed on public employment programs for those groups of workers who suffer chronic unemployment. Combined with training, these jobs are being created in an attempt to increase the future employment prospects of participants. A greater emphasis is also being placed on engaging the private sector in the Government's employment and training programs aimed at the disadvantaged. At the same time, attempts are being made to improve the management and efficiency of these Federal programs.

[8] For example, see Orley Ashenfelter, "The Effect of Manpower Training on Earnings: Preliminary Results", *Proceedings of the Twenty-Seventh Annual Meeting of the Industrial Relations Research Association* (December 1974), pages 252-60.

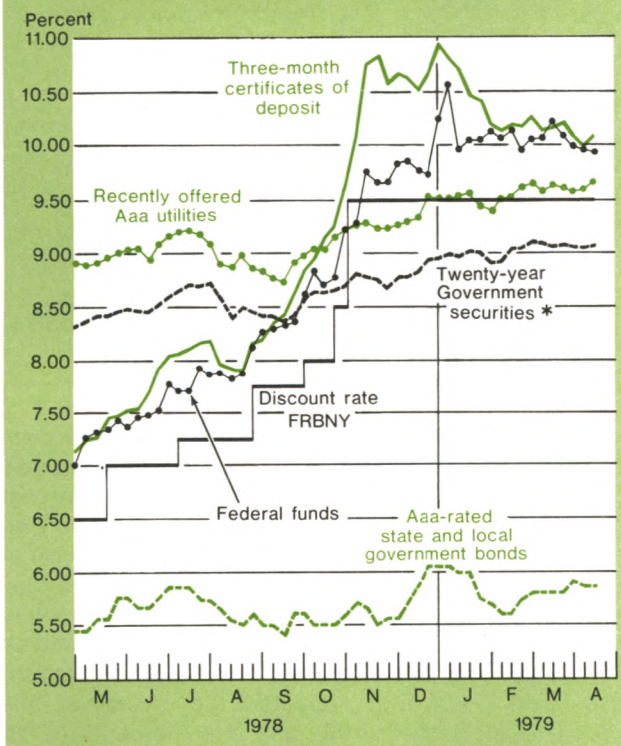
[9] The Bureau of the Census conducts an ongoing survey of CETA participants following enrollment in the program. The data which are available show a short-term improvement in earnings. An analysis on the employment and earnings status of CETA participants three years after entering the program is in progress.

Deborah Jamroz

The financial markets Current developments

Chart 1

Recent Changes in Interest Rates



*This yield is adjusted to twenty-year maturities and excludes bonds with special estate tax privileges.

Sources: Federal Reserve Bank of New York, Board of Governors of the Federal Reserve System, and Moody's Investors Service, Inc.

The winter and early spring was a period of relative stability in the credit markets. After rising throughout most of 1978, interest rates generally came under downward pressure as the new year began. Thereafter, yields on shorter term securities remained at their lower levels, while those on longer term instruments retraced their earlier declines. The monetary aggregates continued to show little or no growth, as they had during the closing months of 1978. Among the factors contributing to these developments were a slackening of the pace of economic expansion, continuing changes in the public's asset management practices, and greater stability in the foreign exchange markets.

As the new year unfolded, money market interest rates quickly reversed the sharp run-ups that had occurred in the previous two months and then held fairly steady over the balance of the winter and early spring. Changes in the yield on three-month certificates of deposit (CDs) are representative of these movements. During January the secondary market rate on these instruments fell by approximately 85 basis points to 10.15 percent, which is about where it stood in late October, and subsequently moved very narrowly around this level (Chart 1). These developments came against a background of sluggish monetary growth and a Federal funds rate that hovered close to 10 percent throughout the period beginning in mid-December. In retrospect, it appears that, as the winter wore on, market participants reevaluated their interest rate outlook and came to view an additional firming move by the Federal Reserve as unlikely to occur in the near term.

Yields on long-term securities tended to follow short-term rates down during the latter part of January but then reversed field in February. By late March, these rates were also fluctuating within narrow limits and on

balance showed little net change for the period as a whole. In the markets for Treasury and corporate bonds, yields began the spring slightly higher than where they were at the end of 1978. For example, recently offered Aaa-rated utility issues were trading around 9.65 percent, up some 15 basis points from their levels in late December.

Similarly modest rate increases were recorded on long-term United States Government securities. Toward the end of March, a delay in Congressional enactment of legislation raising the temporary ceiling on the national debt caused uncertainty over the Treasury's financing schedule. The delay led the Treasury to postpone a number of securities auctions, to suspend temporarily the sale of savings bonds, and briefly to interrupt the mailing of income tax refund checks. Following enactment of the legislation on April 2, the suspended services were resumed and the Treasury announced a series of securities sales totaling $26.7 billion over an eight-day period.

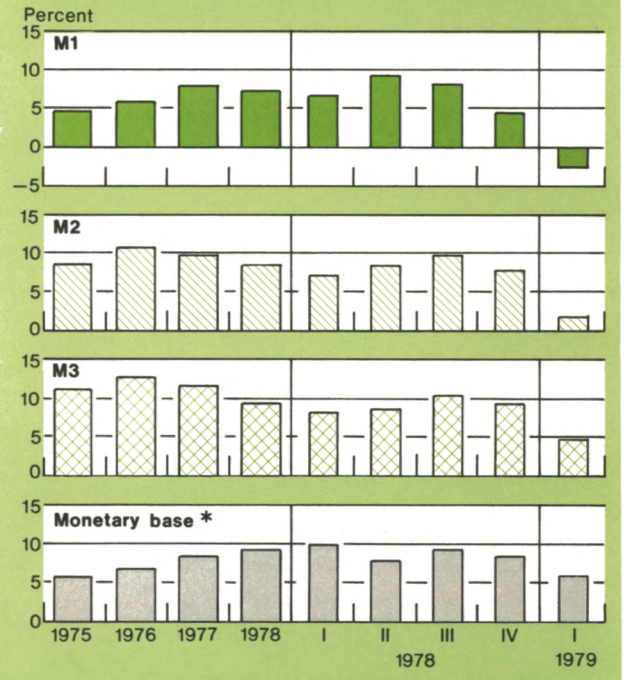
The tax-exempt sector of the capital markets benefited from a relatively strong technical position in the early months of 1979, with inventories of unsold securities generally remaining modest. Indeed, at times dealer inventories, as measured by the Blue List, reached their lowest levels in three years. As a result, while yields on municipal bonds followed the same general pattern as other long-term rates, they completed the winter somewhat below their initial levels.

Recently, an increasing number of municipalities have been issuing a new type of tax-exempt instrument, revenue bonds backed by mortgages on single-family homes. Typically, a community sells tax-exempt securities and then uses the proceeds to purchase mortgage loans originated and serviced by local banks, thrift institutions, and mortgage bankers. The loans go to home buyers satisfying criteria set by the issuers (*e.g.*, maximum income levels). State governments recently have been issuing such securities at an increasing rate, and in July 1978 Chicago became the first local government to enter the market. The bonds are secured by the mortgages, insurance on the mortgage pool, and reserve funds equaling about 15 percent of the bond issue. With these provisions, tax-exempt bonds have been sold at a cost of around 7 percent and mortgages have been extended at rates of up to 8½ percent, or about 2 percentage points below open market rates. Programs like these provide an additional means by which governments may seek to stimulate residential construction by subsidizing mortgage financing. Among the questions raised by such efforts are whether the people who obtain the funds need the subsidy and what percentage of the funds contributes to additional construction as opposed to other expenditures.

Chart 2

Growth of Monetary Aggregates and Base

Seasonally adjusted



The annual growth rates represent the percentage change from the fourth quarter of one year to the fourth quarter of the next. The quarterly growth rates represent the percentage change from the preceding quarter expressed at annual rates.

*Adjusted for changes in Regulation D.

Source: Board of Governors of the Federal Reserve System.

The unexpected, but prolonged slowing in the growth of the monetary aggregates contributed to the generally stable atmosphere in the credit markets. The sharpest deceleration was for M_1. After advancing at roughly an 8 percent rate during most of 1977 and 1978, it rose at a 4.4 percent rate in the fall and actually declined during the first quarter of this year (Chart 2). At its meeting on February 6, the Federal Open Market Committee (FOMC) anticipated some continuation of the sluggishness in M_1. Hence, it projected the growth of this aggregate at between 1½ and 4½ percent for all of 1979, down from the 2 to 6 percent range that had been projected for the four quarters ending in 1979-III. Nevertheless, since the meeting, M_1 growth has fallen short of the Committee's expectations.

The rates of advance of the broader monetary aggregates (M_2 and M_3) have also eased considerably since

last summer. At first, this was due largely to the weakness in the M_1 component of these measures. However, in recent months there has been a marked slowing in the growth of savings and small-denomination time deposits, particularly those at commercial banks. As a result, the first-quarter growth rates of the broader aggregates, like that of M_1, are well below the ranges projected by the FOMC for all of 1979. The range for M_2 is 5 to 8 percent, while for M_3 it is 6 to 9 percent. Both of these are approximately 1 percentage point below the bands that had been established for the four quarters ending in 1979-III.

The current 1979 growth ranges set by the FOMC at its February meeting are the first monetary aggregate projections made under the Full Employment and Balanced Growth Act of 1978 ("Humphrey-Hawkins" Act). The act requires the Board of Governors of the Federal Reserve System to report in writing to the Congress by February 20 and July 20 of each year on its and the FOMC's "objectives and plans" for the aggregates for that calendar year. In addition, the July report is to include an early statement of objectives and plans for the aggregates for the coming calendar year. A key element of the legislation is that the one-year growth ranges will no longer be adjusted forward once a quarter. Instead, the ranges may be revised or adjusted (with explanation), but the time periods are calendar years.

Some slowing in monetary growth normally occurs in the advanced stages of a business expansion. The present decline is unusually large, though, and raises questions of whether special factors are influencing the public's asset management practices. The November 1 introduction of negotiable order of withdrawal (NOW) accounts in New York State and automatic transfer accounts throughout the country are such factors. These developments caused a shift of funds from checking accounts to savings accounts, without having any apparent impact on the real economy. Thus, there is general agreement that the reported growth of M_1 should be adjusted or "corrected" for this effect. On the basis of current estimates, such an adjustment would increase M_1 growth in the fall and winter quarters by 1 and 3 percentage points, respectively.

The analysis of the monetary aggregates in the article beginning on page 1 of this *Review* suggests that it may also be appropriate to adjust the currently reported data to take account of the public's investment in highly liquid nondeposit assets. Included among these are overnight repurchase agreements, overnight Eurodollar deposits, and money market mutual funds. It is unlikely, though, that every dollar invested in these assets would otherwise have been held in a checking account. Hence, the magnitude of the latter corrections is open to further analysis.

The resulting uncertainties over the growth rates of the monetary aggregates have led some observers to focus more attention on the monetary base. Whether the use of the base can help resolve these uncertainties is not clear. The Federal Reserve Bank of St. Louis has published a measure of the monetary base for some time and, on March 15, the Board of Governors of the Federal Reserve System began publishing a slightly different series. Put simply, the monetary base is an adjusted measure of the net monetary liabilities of the United States Treasury and the Federal Reserve System held by the commercial banks and the nonbank public. Specifically, it is the sum of member bank deposits at the Federal Reserve, vault cash held by all banks, plus currency held by the nonbank public.

In recent months the growth of the monetary base has slowed, like that of the other aggregates, but the deceleration did not begin until this year and thus far has been relatively modest. After rising at about a 9 percent rate through the fourth quarter of last year, the growth rate of the monetary base dropped to slightly less than 6 percent in the first quarter.[1] Such a slowing is comparable to some of the results obtained when the growth rates of the conventional aggregates are adjusted for various special factors influencing the public's asset management practices.

Sales of six-month money market certificates of deposit continued at a rapid pace during most of the first quarter, and this helped to moderate the slack in the broader monetary aggregates. While the certificates have been favorably received by depositors, there was concern over their effect on the cost of funds to the issuing institutions. Reflecting this concern, the Board of Governors, the Federal Home Loan Bank Board, and the Federal Deposit Insurance Corporation took joint action, effective March 15, to lower the ceiling interest rates payable on the certificates.

Subsequently, on April 13 the Board of Governors proposed a 3 percent reserve requirement on Federal funds and on repurchase agreements (RPs) on Treasury and agency securities made by member banks or Edge Act units with any lenders except those subject to reserve requirements imposed by the Federal Reserve. The action is designed to establish more effective control over the growth of bank credit.

[1] The growth rates reported here are those published by the Board of Governors and are adjusted for changes in Regulation D.

Global asset and liability management at commercial banks

A dramatic expansion of international banking in recent years has led banks to reexamine the traditional decision-making process. Many banks had found that their international operations had grown in size and complexity, particularly regarding funding and lending. Additional effort was thus required to monitor and to coordinate these activities, especially with domestic money management. Accordingly, some banks have adopted, or are presently considering, bankwide procedures for coordinating their asset and liability decisions. Other banks have continued to rely considerably on decision making by branches and functional units.

The variety of approaches currently used stems from differences in views about the best practical approach to funds management. There is no disagreement that conceptually the consolidated balance sheet and overall profit statement are key accounting elements for bank decisions. Nor are institutional constraints an impediment to global management. Until five years ago, United States capital controls had limited the movement of funds, between domestic and foreign offices of banks, making it less necessary to have an overall perspective. Today, however, dollar funds move freely among major capital markets and the movement of other currencies is relatively unconstrained, particularly in offshore markets. In principle, there is no barrier to linking the activities of separate banking units. Operationally, however, a global decision process may not be best for all banks. It requires that senior management assimilate bankwide information quickly, assess opportunities in world markets, and communicate decisions within the organization. To integrate these activities effectively may be costly. Moreover, coordinating decisions may conflict with other goals of bank management. The decision to adopt a global management approach depends upon the circumstances at an individual bank and the philosophy of its management. This article, based on discussions in New York and other major money market centers, reviews the pros and cons of alternative methods of asset and liability management.

Bank management in a nutshell

At the heart of the bank management process are committees of high-ranking officers representing the major functions of the bank. For asset and liability management, for example, the most important areas represented are investment, money market, and lending activities, both domestic and foreign, supported by the economic analysis function. The fundamental long-run task of top management is to chart the probable course of the bank, allowing for adequate funding and capitalization to accommodate planned needs. Rarely, if ever, will events proceed exactly as planned. Lending opportunities may be greater or less than anticipated, money market conditions may tighten or ease, or currencies may come under upward or downward pressures. Therefore, management's objective is to position the bank so that it can adapt profitably to whatever conditions arise. One of the facts of life for management is that a modern international bank is dependent upon funds borrowed in the money market for a large portion of its liabilities. A bank is able to attract these funds at a favorable cost in part because of the perceived safety and liquidity of its liabilities. The guidelines set by management for sound operations are, therefore, critical for maintaining the attractiveness of the bank. A checklist of management concerns would include the following.

(1) *Adequate capital.* As the ratio of assets to capital increases, the risk to shareholders and uninsured depositors increases but, as the ratio declines, the rate of return on capital falls off. The happy medium is hard to find. When achieved, it is a blend of what competitors are doing, what supervisory authorities view as appropriate, and what the bank's own management thinks is prudent. However an acceptable ratio is determined, it will affect management decisions. In the planning process, the ratio signals the need to raise additional capital in order to meet planned growth. If the capital cannot be raised at an acceptable cost, the expansion of the bank's activities may be impeded, in the long run, by the need to stay within the range of prudent capital coverage.

(2) *Liquidity.* It is the nature of banking to make commitments to receive and to pay out funds. Some commitments may be fixed in advance. The bank may be required to make payment to the holder of a certificate of deposit or a Eurodollar account, to receive payment on a maturing Treasury bill, or to hold funds in its reserve account with the Federal Reserve. In other cases, the timing and the amount of the flows are, within limits, at the discretion of the customer. He may choose to draw down a deposit or a line of credit, to roll over a loan, to make payments against an outstanding loan, or to put funds into a demand or time deposit account. The liquidity problem for the bank is always to be able to honor commitments to make payments at an acceptable cost and without reliance on the Federal Reserve discount window. To do this, banks chart foreseeable inflows and outflows of funds. They prepare for anticipated outflows by arranging to obtain funds at the time that the funds are needed. They also try to reduce the likelihood of unforeseen shortfalls by using stable sources of funds, such as customer deposits and funds with long maturities, in order to reduce the volatility of liabilities. As a cushion on the asset side, they hold liquid assets. However, banks also rely upon their capacity to borrow in money markets as an important alternative to holding liquid assets. The markets in Federal funds, repurchase agreements, bankers' acceptances, certificates of deposit, Eurodollar deposits, and the commercial paper of the bank holding companies are sources from which banks plan to obtain funds as needed (Table 1).

(3) *Market exposure.* Because banks depend so heavily on the money markets for liquidity, it is important for them not to exhaust their capacity to borrow. They do this by remaining within what they feel is their share of each segment of the market. The demand for funds beyond the customary level is an

Table 1

Selected Assets and Liabilities of Large Commercial Banks*

In billions of dollars

Year-end	(1) Net Federal funds purchased†	(2) Certificates of deposit	(3) Other liabilities for borrowed funds‡	(4) Net liabilities to foreign branches§	(5) Total loans and investments	Ratio to (1) to (5) (percent)	Ratio to (2) to (5) (percent)
1966	‖	15.7	6.8	‖	189.4	‖	8.3
1969	9.5	10.9	2.8	12.6	239.8	4.0	4.5
1970	10.8	26.1	1.3	6.5	261.0	4.1	10.0
1972	20.0	44.9	1.9	1.1	325.4	6.1	13.8
1974	28.4	92.8	4.3	— 1.3	410.2	6.9	22.6
1976	51.3	65.9	4.2	—15.5	416.4	12.3	15.8
1978	61.4	100.0	16.9	—17.6	503.6	12.2	19.9

* Weekly reporting banks.

† Net of Federal funds sold to other commercial banks. Includes securities sold under agreements to repurchase.

‡ Excludes borrowing from the Federal Reserve.

§ A negative number indicates net funding of foreign branches.

‖ Not available.

Source: Federal Reserve *Bulletin.*

ambiguous indicator of a bank's condition. The funds may be wanted because of profitable opportunities or, if the bank is having problems, to honor commitments. Whatever the actual situation, there is the danger that the financial markets will take the pessimistic view that the bank is experiencing internal problems. Banks are, therefore, reluctant to exceed their normal share of the market for fear of tarnishing the value of their name and thereby running the risk that all segments of the market would then be closed to them.

(4) *Foreign currency positions.* A bank's net position in a foreign currency exposes it to the risk of fluctuation in the value of that currency. The bank may gain, but it also risks a loss. To limit potential losses, a bank establishes rules concerning who will take such risks and to what extent. The general practice is to limit foreign exchange risk by hedging most foreign currency positions. However, foreign exchange traders may take positions within preset limits and subject to review at a higher level.

(5) *Maturity mismatches.* Raising funds at a maturity different from that at which the funds are lent gives rise to two concerns. One is the commitment to provide funds, that is, the liquidity problem discussed above. The other is the commitment to a particular interest rate. Unexpected changes in market interest rates may result in gains or losses in the bank's portfolio. Losses may result if the bank finances its loans with relatively short-term funds and market rates rise or if relatively long-term funds are used and lending rates fall. Correspondingly, profits can be earned if interest rates move in the other direction. In practice, much of this risk is mitigated by tying the lending rate to the cost of funds. However, banks can profit from the usual interest rate differential inherent in borrowing short and lending long and from correctly anticipating changes in interest rates. Hence, to an extent, they try to harmonize the maturity structure of the portfolio with likely interest rate developments. If rates are expected to fall, for example, fixed rate loans and short-term borrowings would be preferred. As with foreign exchange positions, top management must set limits on maturity mismatches and, especially, it must see that these limits are consistent with expected money market developments.

Having established general policy for the bank and having set limits on discretionary decisions that can be made at lower management levels, senior management leaves actual operations and market strategy to officers with functional or regional responsibilities. Adherence to the limits is frequently checked in the asset and liability management process, but within the limits managers are expected to maximize profits from their activities. Typically, the performance of a funding or a lending area is judged in relation to a standard measure of the cost of funds to the bank. The three-month London interbank offer rate or the three-month certificate of deposit rate (adjusted for reserve requirements and deposit insurance) are common choices, although particular activities may be matched against other rates. A money market function would try to raise funds at a lower cost, whereas a lending function would try to obtain a higher yield. The extent to which each succeeds determines that unit's profits.

Global management

The global approach to asset and liability management shares all the features of traditional bank management just described. The concerns of management are the same. Operating responsibilities are still divided by function and by region among profit center managers, each with limits placed on his discretionary decisions. At the same time, advocates of global management recognize that in the 1970's the world economy has become more integrated and, in some ways, riskier. The geographic division of responsibilities is seen as an insufficient approach to both decision making and risk management in worldwide markets. A unified approach to funds management is thought to be a better way to interface with today's highly integrated markets. Consequently, emphasis is placed on bridging the gap between strategic planning and the bank's day-to-day currency and money market decisions. Efforts are made to know aggregate bank positions on a timely basis, to understand and to assess market conditions, and to coordinate market positions in a way consistent with an overall strategy.

The changing environment

The increased use of global management techniques is a logical response to the changes that occurred in the world economy during the early 1970's. First, United States capital controls were removed, allowing free interactions between the domestic and international operations of banks. Second, the volume of international banking transactions, particularly through offshore offices, had grown into a major component of the total business of United States banks. Last, fluctuating exchange rates and wider variations in interest rates added to the risk of open currency and maturity positions.

The removal of capital controls

In the 1960's, United States authorities initiated three programs that limited the ability of banks to move

funds internationally. In 1965, in the hope of alleviating persistent balance-of-payments outflows, the United States extended the coverage of its interest equalization tax (IET)—a tax on foreign equity and debt issues purchased by United States residents—to include long-term bank loans to foreigners. At the same time, voluntary limits on bank lending abroad were adopted under the voluntary foreign credit restraint (VFCR) program. In 1969, under Regulation M, the Federal Reserve adopted measures to stem inflows of funds from foreign branches of United States banks during the period of tight monetary policy. As the result of these restrictions, the domestic activities of United States banks tended to be isolated from their international ones.

The IET and VFCR restrictions on banks were removed early in 1974, and the Regulation M reserve requirement was reduced in stages between 1973 and 1978. The end of capital controls removed the main institutional wedge that had segmented the dollar financial markets. Consequently, the degree of interdependence between domestic and foreign operations increased significantly. Domestic funds could, and did, support foreign business; equally, foreign funds could support domestic business. When capital controls limited bank options, there had been no great cost in compartmentalizing the bank decision process; but with the end of these controls the cost of, and return from, funds became the primary concern—the more so with the increasing volume of business.

The growth of international banking

International banking, by United States banks and banks of other countries, has grown very rapidly since the 1960's. Claims on foreigners of United States banks (including their foreign branches) have increased 30 percent per year since 1969 (the earliest year for which reliable foreign branch data are available), while liabilities to foreigners have grown 21 percent per year during the same period. By comparison, assets of domestic offices of large United States banks have grown much more slowly, 9 percent per year. Abroad, Bank for International Settlements statistics indicate an eightfold jump in Eurocurrency deposits of banks in eight reporting European countries (including branches of United States banks located there) since 1969 (Table 2). The boom of United States banking abroad has been very profitable for banks. In recent years some United States banks have derived 50 percent or more of their total profits from international activities, compared with more modest earnings a decade ago.

The major factor behind the impressive growth of international banking activities is the increasing interdependence of the world's economies: the growth of world trade, the global investment of multinational corporations, the rapid economic growth of some developing countries, and the imbalance in world payments, particularly since the 1973 OPEC oil price increase. It is natural that much of the increased payments flows associated with these events would occur through banks.

Significantly, much of the growth of international banking has occurred through offshore banking centers. Claims of foreign branches of United States banks on foreigners have grown at an annual rate of 33 percent since 1969, while their liabilities to foreigners have increased at a 22 percent rate (Table 2). The use of offshore centers is related mainly to the lower cost of bank activities there. The restricted access to the United States capital markets during the period of controls, helped to promote the use of offshore facilities during that period. More important, though, has been freedom from other regulations, particularly reserve requirements, deposit insurance, and interest rate ceilings. Alternative tax structures abroad also offer some cost advantages to offshore banking. Moreover, offshore centers offer a choice of location to some depositors who are concerned that their accounts may be blocked or expropriated.

As international activities grew, the impetus for top level bank management to monitor the international function increased. The consequence of errors was no longer small. Moreover, in the mid-1970's the risk from international activities seemed less hypothetical than before. Questions were being raised about the soundness of bank loans to tanker companies and to developing countries, while the failure of a few prominent banks underlined the need for sound management. The environment was right for head offices to take a closer look at their global operations.

Increasing risks in the marketplace

In the 1970's exchange rates and interest rates have become more variable than they had been in the recent past. Central banks stopped pegging exchange rates in 1973, allowing them to float (although some countries, such as those in the European Community maintained currency arrangements that provided for a degree of cohesiveness among their exchange rates). Whipsawed by events—widespread inflation, an oil embargo and price increases, recession in industrial countries followed by an uneven recovery, and persistent trade imbalances among major countries—both exchange rates and interest rates have moved by wider amounts than in the past.

For banks, this movement has accentuated the risks of foreign currency exposure and maturity mismatches discussed above. Because potential gains and losses have increased, the interest of bank management in

Table 2

Selected Measures of the Growth of International Banking

In billions of dollars

Year-end	Claims of United States banks on foreigners: Head office*	Foreign branch†	Adjusted total‡	Liabilities of United States banks to foreigners: Head office*	Foreign branch†	Adjusted total‡	Assets of United States offices of large banks§	Gross Eurocurrency deposits in eight countries‖
1962	7.3	¶	¶	22.0	¶	¶	168.4	¶
1966	12.0	¶	¶	29.1	¶	¶	242.2	¶
1969	12.9	15.9	28.1	42.6	27.8	59.2	316.4	56.9
1970	13.9	28.6	41.8	43.5	35.7	71.9	337.1	75.3
1972	20.7	59.8	79.5	61.7	61.0	120.6	410.2	131.9
1974	46.2	111.2	151.6	96.1	106.0	197.6	529.5	220.8
1976	79.3	158.5	218.1	110.7	135.6	241.9	552.4	310.7
1978	125.2	207.4	302.7	166.3	168.9	323.0	689.9	447.9**

* The figures include head-office claims on, and liabilities to, their own foreign branches. Custody claims and liabilities are not separable from the bank's own claims and liabilities prior to 1978. In 1978, head-office claims and liabilities net of custody claims and liabilities items were $114.2 billion and $77.8 billion, respectively.

† Net of claims on, or liabilities to, sister branches.

‡ Net of head-office claims on, or liabilities to, its own foreign branches.

§ Weekly reporting banks.

‖ The data do not include bank positions *vis-à-vis* residents of the country in which the bank is located. The reporting banks are those located in Belgium-Luxembourg, France, Germany, Italy, the Netherlands, Sweden, Switzerland, and the United Kingdom.

¶ Not available.

**September 1978.

Sources: Federal Reserve *Bulletin*: Bank for International Settlements, *Annual Report* ("External Positions of Reporting European Banks in Dollars and Other Foreign Currencies").

managing these positions closely has also increased. For the bank as a whole, risk stems from exposures that do not net out from the overall balance sheet. In this sense, the interest in global management is directly related to an interest in managing foreign currency and maturity exposures.

Pros and cons of central coordination

The growth of international banking and the greater interdependence and riskiness of money markets and foreign exchange markets increased the incentive for some banks to use a global approach. Not all banks involved with international business have adopted global asset and liability management, however. Bank managements differ in the assessment of the relative merits of global management versus decentralized management. Some banks feel that central coordination enables them to manage better the flow of funds within the organization and to initiate profitable transactions that otherwise would not have been undertaken. Other banks feel that they are more effective if operated as individual profit centers with the looser coordination inherent in the traditional management review process. Particularly, they are concerned with the way in which central coordination shifts responsibilities to head office personnel, reducing motivation at lower levels and in foreign branches.

Much of the impetus for global management comes from the desire for a unified approach toward sources of, and uses for, funds in world markets, particularly world dollar markets. The primary goal is for the bank to be more effective in its use of the money markets. To the extent that it succeeds, the bank will be more profitable.

In practical terms, global management may help a bank fund itself at the lowest rate and lend at the highest. Since all banks compare rates in various markets when seeking or placing funds, the advantage of centralized information flow may be small under usual circumstances. However, where timing is crucial—as

with an unexpected change in market conditions, for example—the difference between the two banking arrangements may be important. The authority to act, as well as the information *per se,* may be critical. The officer in charge of global management not only has flexibility in his choice of markets, but generally has wider limits on the positions he can take than his counterparts at individual profit centers. By contrast, the relative effectiveness of officers of branch profit centers would depend in part upon the ease with which they could obtain permission from the head office to exceed their limits in special situations.

Global management may also enhance a bank's ability to arbitrage favorable rate differentials. For example, six-month dollar funds may be available at 10.50 percent (adjusting for reserve requirements and deposit insurance) in the New York certificate of deposit market but may earn 10.75 percent in the London Eurodollar market. By placing $1 million in the London market financed from funds raised in New York, the bank would earn a profit of $1,250. In the process of bidding for funds in one market and offering them in the other market, the bank helps to narrow the arbitrage differentials between the rates in the two markets. In that way, the degree of integration between the two segments of the market is increased. In some banks organized as separate profit centers, the arbitrage function is handled by having funds managers deal at arm's length with their counterparts in other locations within the bank. Each manager could initiate an arbitrage transaction. At most banks, however, the decision to transact simultaneously in two markets requires agreement between the managers responsible for each market. Without central coordination, they would have to decide on a means of splitting the profits ($1,250 in the example) and each would have to determine that the transaction is in the interest of his profit center. Global management facilitates arbitrage transactions by establishing a clear management responsibility to exploit such profit opportunities in the interest of the bank as a whole. Moreover, the close contact that the parent bank keeps with the world market through its branches provides an important flow of information which helps spot arbitrage opportunities.

Another way in which global asset and liability management may be beneficial to banks is by increasing their ability to net out opposing transactions before they reach the market. Not uncommonly, a branch at one location may need funds at the same time that another branch wishes to supply funds. If they recognize their offsetting needs, they would transact with each other. Otherwise, the transactions would be made in the market, potentially at a cost to the bank of the spread between the bid and offer rates for funds. With global asset and liability management, the parent bank maintains close contact with each branch. These communications increase the chance that the offsetting transfers are handled internally, enabling the bank to avoid the potential market cost.

Many banks take positions and earn profits on expected fluctuations in market rates over time. Proponents of both the global and decentralized approaches each regard their form of management as being the better way of handling these positions. Advocates of decentralized management take the view that there is no monopoly on information in the market and that local managers are as likely to exercise good judgment as their counterparts in the head office. By managing individually part of the total bank portfolio, they help assure that the bank will respond, at least in part, to favorable market opportunities. It is hoped that such errors in judgment as occur will be more than offset in other profit centers and that large mistakes will be avoided. Thus, the decentralized approach is seen as the best way to maximize the bank's profits.

By contrast, the view of globally managed banks is that it is better to formulate a single bank strategy. Because contacts are maintained with personnel in local markets, it is felt that the head office is not at a disadvantage with regard to either information or ideas, compared with the decentralized approach. If more astute managers are at the head office, their judgment may be better than that of lower level officers. Most important, however, is the greater control of the total position inherent in global management. Because the response to market events is closely monitored by top management, some banks have been more willing to take market positions after adopting global management techniques than they had been previously.

A major class of concerns about global asset and liability management involve personnel management. At a basic level, resistance to change from existing managers often makes a shift to global management awkward. People who have held important decision-making functions at various profit-making units tend to resent new lines of authority, particularly if they have less authority under the new arrangement. Reluctance to alienate key staff people has sometimes been a barrier to adopting the global view.

Lack of personnel who are generally familiar with various bank functions has also acted as a barrier to global management. Knowledge of both the domestic and foreign sides of banking is a key ingredient to coordinating global activities. Banks thin in personnel with this experience have difficulty in shifting to global management. The long-run solution is to rotate people

in various jobs so that they receive the proper training.

Beyond these initial barriers to change, though, there are deeper reasons for questioning the viability of global management. Coordination at the center is crucially dependent upon information on conditions in diverse market locations. It requires tacticians who continually probe the markets, execute trades, and report on events. The danger in central coordination is that it could unintentionally supplant thinking and decision making on the periphery. If that were to happen, global management would no longer get the information it needs to function effectively.

For this reason, some banks prefer decentralized organization. The challenge to earn profits, the freedom to manage a department or trading position without daily direction from superiors, and the feeling of being trusted with responsibility motivates people to be effective bankers. In this way, decentralized organization also helps train and select people for higher positions. In the view of those who favor this approach, it is the more effective way to run a bank.

Intermediate cases

The polar cases of global management of assets and liabilities and decentralized decision making are not the only possibilities. Intermediate cases exist. One large bank, for example, has a policy of never interfering with the decisions of local managers. Nonetheless, these managers report daily to the head office, which can hedge market positions that, in the aggregate, appear to it to be unsound. In that event, the offsetting transactions would be done at the head office to maintain the spirit of local autonomy.

Centralized management need not be extended to all of a bank's operations. Eurodollar activity booked in Nassau or the Cayman Islands is usually the first international area to be coordinated with domestic money market trading. London, because of its importance, is often next, followed by other Euromarket centers. The movement to at least partial integration of management at some banks is an indication of the current strength of the shift to global management. One interesting case is a bank whose highest level officers strongly endorse the autonomy of local units. Nevertheless, lower level officers in the domestic and international areas at the head office and in London have recognized the advantages of close central coordination. Informally, a supervisory unit at the parent bank has become a vehicle for coordinating much of their activities.

Thus, while there are grounds for debating the merits for global management methods in their purest form, banks continue to experiment with alternative approaches. The reasons for doing so are clear. Banks are adapting to their larger presence in world markets, the tighter integration of domestic and foreign markets, and increased risks inherent in the economic environment.

Warren E. Moskowitz

How well are the exchange markets functioning?

Foreign exchange is probably one of the most widely discussed and yet least understood subjects of our times. Nearly all newspapers now carry a daily article reviewing the previous day's events, and columnists and editorial writers frequently elaborate on these events in the broader context of their views on economic policies. Over recent years the academic literature has been replete with articles on one aspect or another of foreign exchange, often using highly sophisticated mathematical and econometric techniques. On a more down-to-earth level, numerous corporate treasurers have written books explaining how and when they hedge their exposures. Governments have of course always had a close interest in foreign exchange policy, but it was traditionally a matter to be discussed only by central bankers and finance ministers. Now almost everyone in government seems to have an urge to make his or her views known on foreign exchange matters. In all this blare of public discussion, the ones who seem to have been heard the least are the very practitioners of the trade—the foreign exchange dealers themselves in commercial banks and central banks around the world.

To be sure, traders disagree on everything of importance relating to foreign exchange. We only need to look at those daily press stories which pick up bullish comments on a currency from one trader in Frankfurt and bearish comments from another in London. Ask a group of traders how they feel the market should be organized and you are sure to start an argument. But then that is what a market is all about, meeting the needs of a large number of people whose views and interests vary. A market is not a mathematical abstraction or a politician's dream but very much a part of the real world.

I think therefore it is time to focus on the exchange market as it really is and address its real problems. In laying out some of my own ideas to you, I run the risk of showing my own biases, as an economist and central banker as well as a market practitioner, but my hope is at least to generate serious discussion on market-related issues. Thus, my interest is on how well the foreign exchange markets for major currencies—including the Canadian and United States dollars—are functioning, as distinct from whether exchange rates should be fixed or floating or where they should be.

Basically, it can be said that the foreign exchange market fits very closely the ideal of a perfectly competitive market. There are numerous participants, as actual and potential buyers and sellers in both the interbank market and the more retail market between banks and their commercial customers. Rates for all major currencies are widely quoted, and deals can be done virtually around the clock. There is a considerable amount of information at traders' disposal—again from the news services, from government sources, from advisory services, and from the market itself as participants talk to each other. Communications are rapid and, if a trader cannot reach another by one means, he has others he can turn to. Technology is evolving rapidly.

Each day billions of dollars of transactions are conducted flawlessly through a set of conventions, of common trading terminology among people of many national languages, and of confirmation and payments

Remarks by Scott E. Pardee, Senior Vice President, Federal Reserve Bank of New York, before the FOREX Association of Canada in Toronto, Canada, on Friday, January 26, 1979.

procedures consistent with the various national regulatory structures and legal codes. Errors occasionally occur, but they are normally resolved in an amicable way. This achievement is to the credit of the many thoughtful people in the exchange market who have contributed to its evolution over the years and who are adding to the market's strength in these uncertain times.

But many problems do exist. A smoothly functioning market is said to have depth, breadth, and resiliency. Depth means that a sizable amount of business can be done without having a significant impact on the exchange rate. In practice, this means that the market makers in the interbank market are prepared to absorb temporary excesses of supply and demand into their own positions. While generally this is the case, it is not always so. On occasion, they feel inhibited from taking on large orders for a variety of reasons. These include the very volatility of exchange rates which raises the risk of loss in covering the position later on, internal limits on positions that do not permit enough room in a trader's position to absorb a sizable transaction, and external limits on the banks' ability to deal as with exchange controls. The problem of depth varies with different currencies and over time. Whereas in the "good old days" many market-making banks were prepared to deal perhaps several hundreds of millions of dollars against major currencies and carry the positions overnight—if not longer—most are very likely to give ground now after doing ten million dollars or so, lest they get stuck with a position they cannot unwind quickly. At times, the market is so thin that the hint of a large possible transaction coming on the market will cause traders to shrink back, leading to a rate effect even if the transaction is not carried out.

Breadth means that many traders are willing to make a market at any particular time. If you do not like one trader's rates, you can always shop elsewhere. On some occasions, the markets may very well lack breadth in this sense, particularly in the forward market. A few banks are still willing to make a commitment to that market, accepting both the risks and the substantial forward book it entails, while others have pulled back to concentrate on dealing spot.

Aside from this, I would argue that the exchange markets today have greater breadth than at any time before. More banks than ever are prepared to deal, within individual money centers as well as between centers. This has led to changes in traditional trading patterns, as in the United States last year when direct dealing between banks became more prevalent and international brokering was introduced on a wide scale.

The increase in numbers applies to the general market as well as to the interbank market. There has been a sharp increase in the number of corporations, individuals, and even official institutions which turn to the exchange market for their needs either as buyers and sellers of goods internationally or as managers of funds. And we have new markets such as those on established commodity futures exchanges in the United States. The volumes involved have scaled upward sharply.

The question of breadth raises two potential issues. First, the increasing cost of staffing and equipping a modern trading room and back office could at some stage give banks at the core of the market such a competitive edge that others may retrench into correspondent banking relationships. So far at least, more banks seem to be gearing up for the long haul than pulling back. Second, the proliferation of institutions related to the market—banks, brokers, advisory services—has already stretched thin the available pool of foreign exchange talent, certainly in the United States. The pressures on available talent heightens the risk of serious mistakes, through a weakness in internal management control systems, overwork, or inexperience. Serious problems have been avoided in the last couple of years but are entirely possible down the road.

Resiliency means that a large order to buy or sell a particular currency can be absorbed in the market without generating a cumulative movement in the rate. If a currency declines, will it recover on its own or will it continue to drop as a result of internal market dynamics? Here the record of recent years has been poor. The most visible swings in rates have been under floating exchange regimes, but substantial one-way pressures have built up under fixed rates as well, and I have come to believe that the lack of resiliency in exchange markets is an inherent characteristic of those markets.

Too often, as soon as a currency comes under, say, selling pressure, that pressure begins to cumulate. In part this reflects the very speed of communications, the facility with which trades can be entered into, and the number of people prepared to act at a given moment. But the responses are often quite out of proportion to the importance of an immediate event. Thus, the fact that a particular currency is declining is flashed around the world in seconds. Market commentary and the news services quickly provide an explanation for the decline, ascribing it to a statement by a government official, release of an economic indicator, a large sell order, or even a rumor. Sometimes these explanations are far-fetched, but the conjunction of a decline in a currency plus a plausible explanation for that decline can trigger a widespread reaction in the same direction as many market participants respond virtually at once. This reaction itself adds credence

to the explanation and may draw in additional sellers. It is not unusual to find situations in which hundreds of millions of dollars are suddenly on the move.

The sellers may be risk-taking speculators, but they may also be risk-adverse hedgers. The speculator of course thrives on volatility, seeking to be the first to buy on the way up and first to sell on the way down, the longer the ride the better. The hedger fears volatility and may hasten to cover his exposures when he sees a wide movement against him, lest he take bigger losses by waiting longer. But once a rate begins to move both the risk seeker and the risk avoider may suddenly be on the same side of the market, adding to the one-way pressure on the rate for the moment and to general volatility once profit taking sets in. The less the depth and breadth of the market, the wider the amplitude of the swings. But, in a bearish or bullish market, the one-way pressures may persist for some time, pushing rates to levels that may overshoot by a wide margin any conceivable equilibrium rate which might be based on broader economic considerations.

The concept of equilibrium in the exchange market is of course an elusive one. The exchange market is always in equilibrium to the extent that supply and demand coming into the market at a particular moment are matched off at a going price. But the supply and demand may have little or no relation to broader economic considerations, such as trade, current account or basic payments balances, relative rates of inflation, or even relative interest rate differentials. From an economic policy point of view, however, it is important that exchange rates over time do reflect a broader economic equilibrium within and among countries and, if not, policy adjustments have to be made. The policy decisions are not always easy, given the trade-offs among different economic objectives within a country and between domestic and international objectives. So it would be extremely dangerous for policymakers to react to every swing in the exchange rate, lest the volatility of exchange market sentiment be projected into other sectors of the economy. Moreover, exchange rate changes may give some unwelcome feedbacks into the domestic economy. The best example is the vicious circle in which domestic inflation leads to an exchange rate depreciation which generates such a bearish exchange market atmosphere that the rate is pushed even further than could be explained by inflation differentials. To the extent that this excessive decline of the rate persists, it ratchets up the cost of imports and import substitutes and thereby aggravates domestic inflation all the more.

It is under these conditions that central bank intervention plays a role. For the United States, since 1973 we have mainly intervened to counter disorderly conditions in the exchanges. Definitions of disorder vary, but my definition includes several important elements. At base is the unwillingness of market makers to cushion the pressures hitting the market by absorbing buy or sell orders into their positions. This unwillingness reflects their perception of the increased risks involved, for whatever reason, in carrying a position if only for hours or overnight. It is generally reflected in a widening of bid-asked spreads traders quote to each other and to customers, but wider spreads are not the only piece of evidence. A trader may quote the same spreads to a good customer and then unload his position in the market as quickly as possible. Or he may go the other way and effectively refuse to quote at all. When many traders shrink back, the market loses depth and breadth, which in turn leads to a lack of resiliency. Pressures in the market become increasingly one way; rate movements become cumulative and volatile. Traders, including corporate treasurers, portfolio managers, and even the man on the street begin to respond to the rate movements alone rather than to their judgment of the medium- or long-term outlook for a currency. Under these conditions, central bank intervention can play a smoothing or cushioning role, limiting the length of the ride for the speculators and reassuring the hedgers that they can remain on the sidelines. But in the extreme, when one-way trading prevails to the extent that rates overshoot, forceful central bank action may well be needed to correct the excessive swings of the rate. On November 1, for the first time since the United States dollar was floated, the United States authorities intervened precisely for the purpose, as President Carter put it, to correct the excessive decline of the dollar.

How can these inherent problems of the exchange market be avoided? The responsibility is as great for private market participants, including the individual trader in a commercial bank, as it is for the authorities. We are in a period in which exchange market matters are unusually politically sensitive. At times of heightened tensions in the exchange markets, ill-advised actions by some market participants may not only be costly to themselves but also to the market as a whole. For the commercial bank trader, there are now a variety of carefully considered codes of ethics and internal management manuals to guide him. FOREX, both at the national and international levels, is playing a commendable role in seeking to improve the professionalism and expertise of its membership. To the extent that these efforts are successful—and this comes down to the conduct of each individual trader —the market will be improved.

This does not absolve the authorities, particularly the central bank, from responsibility to improve the

market. It is imperative that the central bank maintain close contact with the market, not only for carrying out intervention policies but also for gauging how well the market is functioning. In the Federal Reserve Bank of New York we have always sought to maintain such contacts. We have recently enhanced that effort through the sponsorship of a Foreign Exchange Committee made up of senior foreign exchange officers of banks in the United States and the heads of foreign exchange brokerage firms.

One way in which the authorities can improve the functioning of the exchange market is to avoid mechanisms which inhibit competitive forces in the market, such as arbitrary exchange controls. This is easy for someone from the Federal Reserve to say, since the United States lifted the remaining barriers to capital outflows back in 1974, and presently there is little stomach within the government to employ them again. But most controls are essentially an effort to stifle pressures coming from one side of the market. They may work well in the short run. But over time they may create serious distortions and trading problems, even to the extent of favoring some market participants over others. Moreover, they may encourage systematic evasion by some participants. Consequently, where such controls are used, they should be relaxed as soon as the opportunity arises.

Even intervention should be considered a limited instrument, reserved mainly for calming nervous markets and smoothing excessive fluctuations in rates. As one's time horizon lengthens, into periods of weeks, months, and years which can more successfully be analyzed by the standard tools of economic analysis and econometrics, the exchange markets show through as being reasonably efficient. Exchange rate movements over time tend to be consistent with the broader movements of basic economic indicators, such as trade and current account balances and relative rates of inflation. Therefore, intervention to counter longer term trends could easily be counterproductive in terms of the efforts to achieve equilibrium in the exchange market. At the same time, however, excessive dependence on the exchange rate as a means of adjustment has many drawbacks. The lags are just too long and the expectational effects too unpredictable. The focus of longer term adjustment policy should rather be on other basic policy tools, such as fiscal and monetary policy and commercial policy.

Monetary Policy and Open Market Operations in 1978

Monetary policy shifted increasingly toward restraint in 1978, as the economy moved ahead strongly and price inflation accelerated in the fourth year of the current expansion. The Federal Reserve continued to exert upward pressure on the interest rates at which reserves are supplied to the banking system, forcing the Federal funds rate up by about 3½ percentage points and raising the discount rate by the same amount. However, the expansion of M_1 exceeded desired growth rates until late in the year as economic activity and credit demands often outran expectations. Rising inflation and a continuing large international payments deficit on current account sparked repeated bursts of speculation against the dollar in the foreign exchange markets, and monetary policy increasingly took the implications of these developments for the domestic economy into account.

Monetary expansion, already rapid in 1977, continued high through most of 1978—with M_1 growth exceeding the Federal Open Market Committee's (FOMC) longer run range and M_2 and M_3 growth often well up in their ranges. (The table on page 57 shows the longer run ranges voted during the year.) M_1 rose at an 8.1 percent annual rate[1] over the first ten months and slowed thereafter, apparently reflecting a combination of factors including the introduction of new transactions options. Thus M_1 growth ran ahead of its 1977 pace for much of the year but turned out to be a bit slower—at 7.3 percent—for the year as a whole (Chart 1). Growth of M_2 and M_3 slowed considerably on average from the previous two years. Interest rate ceilings held down growth of the savings and time deposit components, though both aggregates were boosted after midyear by the introduction of money market certificates on which ceiling rates were related to weekly rates for new six-month Treasury bills. M_2 and M_3 grew 8.5 percent and 9.4 percent, respectively, over the four quarters of 1978, within the upper halves of the FOMC's longer run objectives. The broader measures that contain large negotiable certificates of deposit (CDs)—M_4 and M_5—experienced rapid growth, as an acceleration in CDs took up the slack from the slowing of the smaller savings and time deposits.

Bank loans expanded rapidly during the year, and bank credit rose by 11.3 percent from the fourth quarter of 1977 to the fourth quarter of 1978, the same as in the previous year. The strong growth of commercial and industrial loans, evident the year before at regional banks, spread to the money center banks during 1978, with demand concentrated at the large New York City banks late in the year. Commercial banks added a moderate volume of tax-exempt securities to their

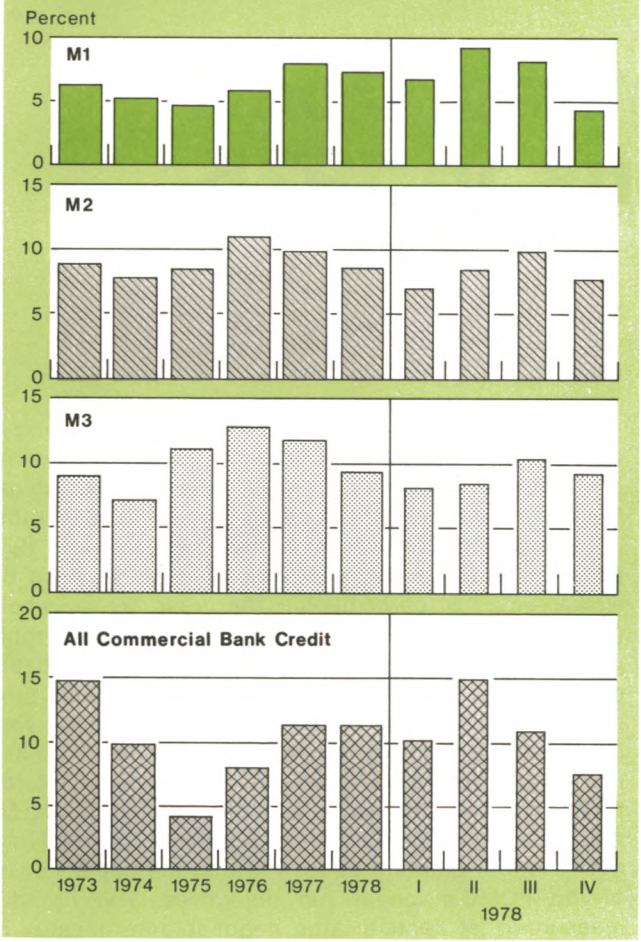
Adapted from a report submitted to the Federal Open Market Committee by Alan R. Holmes, Executive Vice President of the Federal Reserve Bank of New York and Manager of the System Open Market Account, and Peter D. Sternlight, Senior Vice President of the Bank and Deputy Manager for Domestic Operations of the System Open Market Account. Fred J. Levin, Manager, Securities Department, and Ann-Marie Meulendyke, Chief, Securities Analysis Division, were primarily responsible for preparation of this report. Nancy Marks and Connie Raffaele, members of the Securities Analysis Division staff, participated extensively in preparing and checking information contained in the report.

[1] Data in the body of the report include the effects of seasonal and bench-mark revisions published on February 9, 1979. The chronological section makes use of data as published at the time, since Federal Reserve decisions were based on them.

Chart 1

Growth of Money Supply Measures and Bank Credit

Seasonally adjusted annual rates



portfolios but liquidated Treasury securities to meet loan demand. Commercial paper outstanding expanded at an increased pace during the year, attesting to the strength of business needs for credit.

The economy in 1978

Real gross national product (GNP) expanded by an estimated 4.4 percent over the four quarters of 1978, down from 5.5 percent in 1977 but still above the post-World War II average. Prices, as measured by the GNP deflator, rose 8.3 percent over the four quarters of 1978, the second consecutive speedup from the recent low of 4.7 percent in 1976.

Employment expanded rapidly so that by the year-end 59.1 percent of the working-age population was employed, an unprecedented rate for a peacetime period; a record 95.9 million persons had jobs. The gains in employment were accompanied by a continued rapid rate of entry into the labor force so that the unemployment rate, after declining from 6.4 percent of the labor force in December 1977 to 6.0 percent in April 1978, fluctuated thereafter in a fairly narrow band averaging 5.9 percent. Still, because of structural changes in the labor force, this unemployment rate appeared to represent relatively full employment in the economy, and there were reports of developing shortages of certain types of skilled labor.

The expansion of economic activity during the year was supported by heavy consumer spending, financed to an unusually large extent by mortgage and instalment debt. Demand for housing and durable goods was particularly strong, reflecting in part the buildup in inflationary psychology. Business fixed investment also expanded substantially during the year, although growth of capacity still lagged relative to the improvement posted in earlier cycles. Surveys of investment plans continued to suggest a sense of uncertainty about expected profitability of such investment, because of inflation and its distorting effects on tax liabilities and because of the adverse impact of the 1974 recession on profits.

Securities markets and interest rates

Interest rates moved up throughout the maturity spectrum in the face of strong credit demands and rising inflationary expectations. The most pronounced increases were in the short- and intermediate-term areas where demand factors and monetary policy initiatives combined to have their greatest impact. The 3½ percentage point increase in the Committee's Federal funds rate objective over the year was accompanied by increases of similar magnitude in most other short-term rates. Yields on Treasury securities maturing in one to three years generally rose 2¼ to 3½ percentage points. Yields on somewhat longer term issues increased by 1¼ to 2 percentage points, while those on long-term issues rose by ¾ to 1 percentage point. The overall upward movement and gradual flattening in the yield curve during the first half of the year were followed, after an extended summer rally, by a dramatic shift to an inverse yield curve, which peaked around the one-year maturity. (Charts 2 and 3 illustrate the major yield movements and changes in the yield curve over the year.)

Borrowings by the Treasury were substantial during the year. The Treasury added $21.4 billion to outstanding publicly held marketable coupon issues, while replacing $52.5 billion of publicly held maturing coupon

securities. The Treasury's ongoing program of regularizing and lengthening the public debt through coupon offerings extended the average maturity of the debt by six months to three years eight months at the year-end. Treasury bills held outside the Federal Reserve and Government accounts, on the other hand, increased by only $772 million over the year. The demand of foreign official accounts for short-term bills often contributed to a market scarcity of bills when these accounts built up their holdings following dollar support activities. At such times, bill yields fell relative to other short-term market instruments, and secondary trading reflected resultant market shortages.

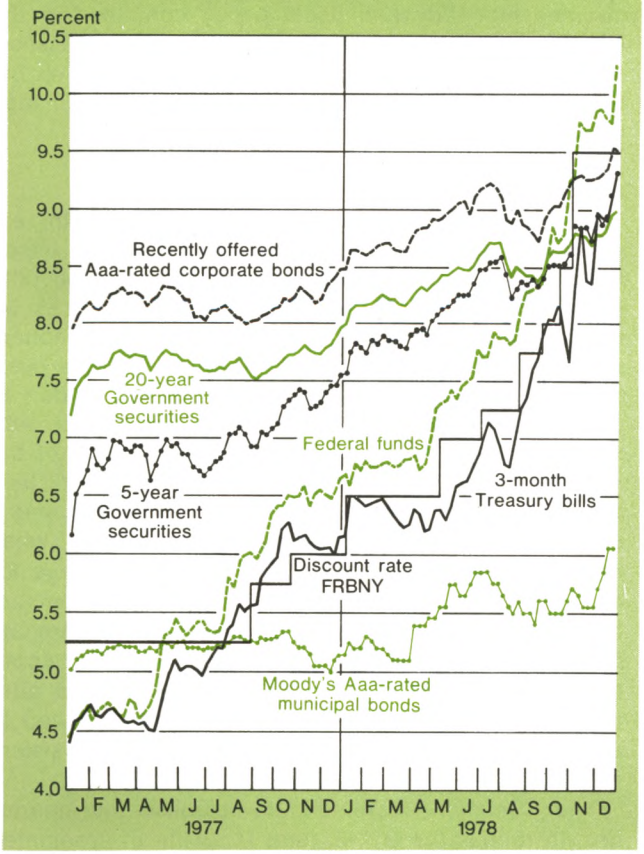
About one half of the net increase of $52.0 billion in the Treasury debt held outside the Government was financed through sales of Treasury issues to foreign official accounts. These institutions added $29.3 billion to their holdings, including $5.8 billion in nonmarketable securities. The Federal Reserve acquired $8.8 billion, and state and local governments bought $13.4 billion, largely of nonmarketable interest-arbitrage bonds. Commercial banks liquidated a substantial volume of securities, while the holdings of other financial and corporate investors showed small changes. Individuals made only slight additions to their marketable and nonmarketable debt holdings, reducing their share of the Treasury's debt.

Federally sponsored agencies that support the housing sector borrowed heavily during the year. Net new borrowing by the Federal Home Loan Banks and the Federal National Mortgage Association amounted to $13.9 billion. Pass-through mortgage certificates also continued to expand in volume. On the other hand, the various farm credit agencies raised little net new cash during the year.

The pace of business borrowing in the intermediate- and long-term sectors slackened somewhat, as businesses turned increasingly to the banks and the commercial paper market. Yields on long-term corporate issues moved up by nearly 1 percentage point, about the same as on long-term Treasury debt. Tax-exempt entities again borrowed substantially, especially through revenue-bond offerings. Tax-exempt yields moved up about ¾ percentage point in the long-term area. The yield curve for tax-exempt issues remained upward sloping.

Chart 2

Selected Interest Rates



International developments relating to the dollar

While domestic developments—especially the worsening problem of inflation—were the main focus of monetary policy during 1978, foreign exchange developments also came to bear increasingly on policy during the year. Indeed, the position of the dollar in the foreign exchange markets deteriorated sharply during the latter part of 1977, and the dollar encountered fresh sinking spells in 1978. This, together with domestic inflation, gave the Committee increasing cause for concern, as it underscored fundamental domestic as well as international imbalances. As the year began, a forceful response to domestic developments, desirable in its own right, bolstered the direct intervention in the exchange markets undertaken by the Federal Reserve and other central banks. The exchange markets stabilized for a time thereafter but, as inflationary pressures rose, participants became more and more concerned about the adequacy of the United States response. During the latter part of October, the situation became critical. The dollar dropped sharply as participants became deeply concerned that prices in the United States would continue to rise faster than those of other industrial countries—and by a widening margin.

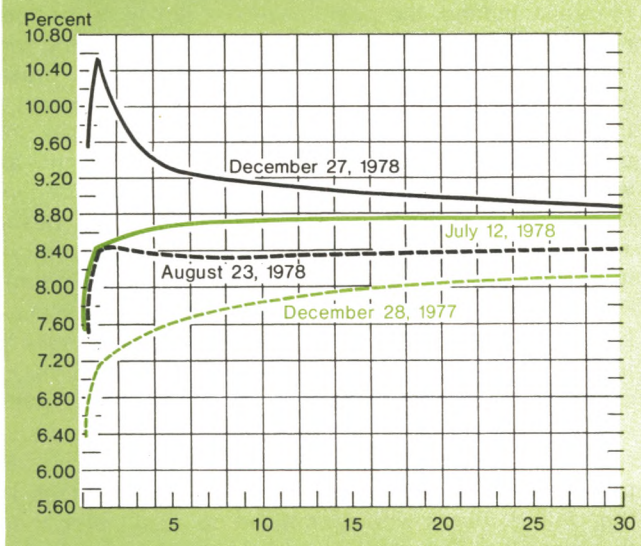
On November 1, the Federal Reserve joined with

the Administration in a series of dramatic actions to support the dollar and to dampen inflationary expectations. The Federal Reserve increased the discount rate by 1 percentage point and raised its Federal funds rate objective by about ½ percentage point. It also raised reserve requirements on large time deposits by 2 percentage points. These actions were accompanied by joint Federal Reserve-Treasury arrangements to facilitate expanded dollar support operations. Moreover, the Administration pledged to reduce the fiscal 1980 budget deficit below $30 billion.

In reaction to the new program, the dollar immediately rose sharply, as did prices of stocks and long-term bonds. Short-term interest rates rose, however, as participants anticipated that further Federal Reserve action might be necessary to defend the dollar. Subsequently, long-term interest rates resumed their climb. Data becoming available during the final months of 1978 suggested the continuation of strong economic growth and underscored how entrenched inflation had become. The exchange markets remained very nervous, with the dollar under heavy pressure at times as the resolve of the Federal Reserve and other central banks to support the November 1 program in the exchange markets was tested. Analysts noted the slower growth of the monetary aggregates during the final quarter, but were unsure whether this represented the impact of restraint or largely reflected institutional changes occurring at the same time.

Chart 3

Yield Curves for United States Treasury Obligations



Monetary Policy and Its Implementation

In making policy in 1978, FOMC members confronted a domestic economic expansion plagued with more inflation, and an international financial system whose participants were becoming increasingly concerned about the outlook for monetary growth and inflation in the United States. The dollar's key position as a reserve currency and a major vehicle for financing international trade meant that the United States economy's problems attracted world attention. Of course, part of the continuing large deficit on current account reflected the robustness of the United States economy since 1975 relative to the other industrialized nations. But the pickup of inflationary expectations in the United States at a time when inflation rates were slowing in other leading industrial countries kept market participants at home and abroad apprehensive about this divergence. These fears culminated in a wave of pessimism in October and a rush out of dollars into other currencies. The promise of more restrained monetary and fiscal policy contained in the November 1 package initiated a continuing reassessment of official resolve that restored a tentative but hopeful sense of greater stability to the exchange markets as the new year began.

Policy objectives

The longer run objectives for monetary growth, expressed in terms of four-quarter growth ranges based on the level in the quarter just ended, changed little during 1978, although the FOMC maintained, as an ultimate goal, their gradual reduction to noninflationary rates of growth. However, in view of previous overshoots, Committee members each quarter tended to place major emphasis on achieving existing growth-rate objectives. A majority felt that reductions of the ranges before achieving existing goals would lack credibility and, if achieved, might impose too much stringency on the economy. Indeed, at midyear, when the Committee extended the earlier growth range for M_1, it was recognized that, in light of the recent behavior of money demand, growth of this aggregate over the year ahead might well be around its upper limit. Also, by moving forward the base period after the rapid growth of the quarter before, it allowed in effect somewhat faster growth than was consistent with the ranges set in the previous quarter.

The Committee continued to establish four-quarter growth ranges for M_1, M_2, and M_3, with an associated

Federal Open Market Committee's Annual Growth Ranges for Monetary and Credit Aggregates

Seasonally adjusted annual percentage rates

Period	Month established	M_1	Actual	M_2	Actual	M_3	Actual	Adjusted bank credit proxy	Actual
March 1975 to March 1976..	April 1975	5 to 7½	5.3	8½ to 10½	9.7	10 to 12	12.3	6½ to 9½	3.2
June 1975 to June 1976..	June 1975	5 to 7½	4.4	8½ to 10½	8.8	10 to 12	11.3	6½ to 9½	3.2
1975-II to 1976-II	July 1975	5 to 7½	5.4	8½ to 10½	9.6	10 to 12	12.0	6½ to 9½	3.1
1975-III to 1976-III	October 1975	5 to 7½	4.6	7½ to 10½	9.3	9 to 12	11.5	6 to 9	3.7
1975-IV to 1976-IV	January 1976	4½ to 7½	5.8	7½ to 10½	10.9	9 to 12	12.7	6 to 9	4.3
1976-I to 1977-I	April 1976	4½ to 7	6.5	7½ to 10	11.0	9 to 12	12.8	6 to 9	5.0
1976-II to 1977-II	July 1976	4½ to 7	6.8	7½ to 9½	10.8	9 to 11	12.5	5 to 8	5.8
1976-III to 1977-III	November 1976	4½ to 6½	8.0	7½ to 10	11.1	9 to 11½	12.7	5 to 8	11.4*
1976-IV to 1977-IV	January 1977	4½ to 6½	7.9	7 to 10	9.8	8½ to 11½	11.7	7 to 10	11.3*
1977-I to 1978-I	April 1977	4½ to 6½	7.7	7 to 9½	8.8	8½ to 11	10.5	7 to 10	11.3*
								Bank credit	
1977-II to 1978-II	July 1977	4 to 6½	8.2	7 to 9½	8.6	8½ to 11	10.0	7 to 10	12.0
1977-III to 1978-III	October 1977	4 to 6½	8.1	6½ to 9	8.6	8½ to 10½	9.6	7 to 10	11.9
1977-IV to 1978-IV	February 1978	4 to 6½	7.3	6½ to 9	8.5	7½ to 10	9.4	7 to 10	11.3
1978-I to 1979-I	April 1978	4 to 6½		6½ to 9		7½ to 10		7½ to 10½	
1978-II to 1979-II	July 1978	4 to 6½		6½ to 9		7½ to 10		8½ to 11½	
1978-III to 1979-III	October 1978	2 to 6		6½ to 9		7½ to 10		8½ to 11½	

* The Board of Governors of the Federal Reserve System ceased publication of the credit proxy in August 1977. Bank credit growth is given as a guide thereafter.

range for bank credit.[2] The table presents a historical summary of growth ranges established since 1975. The existing objective for M_1 was maintained until October. At that time, the band of growth rates was reduced and widened to allow for the expected though uncertain impact of automatic transfer services (ATS). The new range was felt to be consistent with the same rates of expansion as the one in effect before adjustment for ATS. For M_2 and M_3, which should have felt little or no effect from ATS, the Committee extended the previous growth ranges throughout the year, although the M_3 range set in February was below that set in the final quarter of 1977. The Committee lifted the range for bank credit at its April meeting and again in July in recognition of the greater share of borrower demands being directed toward banks.

[2] Beginning with the October meeting, the Committee indicated it would track M_1+—defined as the sum of M_1, negotiable order of withdrawal (NOW) accounts, credit union share drafts, and savings deposits at commercial banks. An associated range of 5 to 7½ percent was chosen.

Intermeeting instructions to the Account Manager

The directives given by the FOMC to the Federal Reserve Bank of New York retained the format of other recent years. The Committee instructed the Manager to raise or lower the Federal funds rate within a band of tolerance whenever growth rates of M_1 and M_2 for the two-month period ending the month after the meeting appeared to be going off course. For just over half of the year the Committee used an "aggregates" directive, which called for responding to significant deviations of the aggregates from the midpoints of their two-month ranges, giving approximately equal weight to M_1 and M_2. From December 1977 through February 1978 and again in July, the Committee specified a "money market" directive, calling for a response only if projected growth was closely approaching or moving beyond the upper, or lower, bounds specified for M_1 and M_2.

In October and November, the directives took account of likely distortions to M_1 from automatic transfers, giving primary consideration to M_2, with M_1 to be considered only if its upper bound were exceeded. In December, the Committee felt that the transition

was understood sufficiently to specify a range for M_1 and to resume giving it equal weight as a guide to setting Federal funds rate objectives.

With the aggregates so strong for a large part of 1978, the Committee frequently instructed the Trading Desk to raise the Federal funds rate following the meeting without waiting for additional estimates of aggregate growth. Also, the two-month ranges set on the aggregates more often than not led to further upward adjustment in the Federal funds rate; indeed, it would have taken a sizable shortfall in growth from expected rates to have produced a reduction in the objective.

The width of the intermeeting range for Federal funds variation generally was ½ percentage point. It was twice widened at regular meetings to ¾ percentage point and twice narrowed to only ¼ percentage point, the narrowest that had ever been specified. In several months, use of the full range was subject to prior consultation. Partly as a result, further guidance was needed on eight occasions during the year and, as the directive provides, involved interim instructions from the Committee by telephone meeting or wire vote. In one case, prior to announcement of the November 1 program, a special meeting of the FOMC was called in Washington.

While the Federal funds rate and the behavior of the monetary aggregates remained the primary focus of the instructions to the Account Manager, the behavior of domestic financial markets and developments in the foreign exchange markets also figured in the directive. In January, and again in November and December, the Committee's decision to raise the Federal funds rate responded, in significant measure, to the weakness of the dollar in the foreign exchange markets. (Of course, that weakness was, in itself, partly a result of greater inflationary pressures in the United States economy than abroad.) In these instances, growth of the monetary aggregates appeared to have slackened and by themselves would not have led to restrictive policy moves. In January, the Federal Reserve expressed the hope that the higher rates would prove temporary. However, when the money measures resumed their rapid growth, and the dollar remained shaky over succeeding months, both domestic and international considerations pointed toward the need for additional restrictive steps.

Open market operations were conditioned to a significant degree by international developments. In December 1977, the Committee inserted a phrase into the domestic policy directive, instructing the Desk to give specific attention to the unsettled conditions in foreign exchange markets. Such an instruction was included monthly except in May, June, and July, when the exchange markets were relatively steady. Operationally, this meant that the Committee was prepared, in certain circumstances, to see somewhat tauter reserve conditions than otherwise. At the time of the January and November initiatives to support the dollar, the Desk avoided drastic action to push the Federal funds rate down to the stated funds rate objective. When the dollar was under particular selling pressure, aggressive actions to push the funds rate down, or even an appearance of tolerating some downward drift, could have risked aggravating the weakness in the exchange markets.

Operations

The increase in the Federal funds rate objective from 6½ percent at the start of the year to 10 percent or a shade higher by the year-end was accompanied by an overall upward adjustment in the discount rate from 6 percent to a record 9½ percent. Discount window borrowing tended to be sensitive to changes in the spreads between the two rates. Whenever the Federal funds rate moved more than about ½ percentage point above the discount rate, borrowing rose substantially. This variability occasionally made it difficult to estimate the appropriate volume of nonborrowed reserves consistent with Federal funds rate objectives. It is possible that such bulges in short-term use of the window reflected some erosion of the discipline traditionally associated with adjustment borrowing.

The forecasting of noncontrolled factors affecting nonborrowed reserves, so called market factors, continued to be difficult. Unexpected variation in the Treasury balance at the Federal Reserve persisted, and Federal Reserve float became considerably more variable. These factors were chiefly responsible for the fact that the market factor estimates made at the beginning of the week differed by about $900 million on average from the final outcome. This compared with an average difference of about $500 million in the previous year. In most weeks, open market operations were able to adjust to the bulk of the uncertainty and to maintain reasonable stability in the Federal funds rate. However, unexpected shortfalls or overshoots in reserve availability did at times cause the Desk to reverse the direction of its operations and the market to experience wider than usual fluctuations in the funds rate, particularly on settlement days.

In managing reserves, the Desk sometimes encountered difficulty in making a sufficiently large volume of repurchase agreements (RPs), particularly at times when the Treasury balance at the Federal Reserve rose sharply. For the most part, large reserve scarcities tended to develop after quarterly tax-payment dates. Government securities dealers and other market participants continued to hold small inventories, given

the negative carry on them and the expectations of further interest rate increases. The Treasury assisted on a number of occasions by reducing calls on the commercial bank tax and loan accounts or making occasional redeposits.

Reserve management was aided by the Treasury's implementation in November of the note investment option that had been approved by the Congress late in 1977.[3] This gradually returned the bulk of variation in Treasury cash balances to the commercial banks, while leaving greater stability in the Treasury balance at the Federal Reserve. However, some commercial banks chose to remit their tax and loan receipts daily to the Federal Reserve, while others imposed caps on the amount of investment funds they would accept. Predicting the amount of remittances, as well as the rate at which checks clear against Treasury balances at the Federal Reserve, remained somewhat troublesome as the new system got under way. The new system, however, held the promise of providing relief, in time, to the earlier difficulties with sharply fluctuating Treasury balances at the Federal Reserve.

Regulatory factors affecting monetary behavior

At the beginning of November, commercial banks were permitted to offer automatic transfer accounts to individuals, and banks in New York State were authorized to offer NOW accounts.[4] Both options permit households to hold interest-bearing transactions balances and thus to keep demand balances at or close to zero. Their introduction reduced the growth rate of M_1 from what it would have been otherwise.[5]

During the latter part of 1977, market interest rates began to exceed ceilings applied to small time and savings deposits. In 1978, as in past periods when such ceilings began to impinge, depositors gradually redirected their funds into other instruments, which tended to hold down the rate of expansion of M_2 and M_3. As savings and time deposit growth slowed, banks stepped up their bidding for CDs, and depositors sought out market instruments and money market mutual funds. In June, banks and thrift institutions were authorized to issue money market certificates having a $10,000 minimum, a maturity of six months, and an interest rate tied to average rates in the weekly six-month Treasury bill auction (with a 25 basis point advantage to thrift institutions). Consequently, the pace of M_2 and M_3 expansion picked up sharply through the summer and into the autumn. This regulatory change also made it difficult to assess growth of the broader aggregates relative to their behavior in the past.

Open Market Operations in 1978

January to mid-April

As the year opened, the value of the dollar in foreign exchange markets was falling sharply in increasingly disorderly market conditions. To check speculation and to reestablish order, the Board of Governors of the Federal Reserve System and the Treasury announced on January 4 that the Exchange Stabilization Fund of the United States Treasury would be used actively in market intervention, together with the $20 billion swap network linking the Federal Reserve and foreign central banks. Late on Friday, January 6, the Board approved a ½ percentage point increase in the discount rate to 6½ percent at two Reserve Banks; the other Reserve Banks quickly followed suit. The following Monday, the Account Manager, in accord with the Committee's wire instructions, began to seek reserve conditions associated with a Federal funds rate of 6¾ percent within a newly adopted range of 6½ to 7 percent. Previously, the Manager had been aiming for a Federal funds rate of about 6½ percent within the 6¼ to 6¾ percent range specified at the December meeting, although funds had actually traded above that rate at times, owing to holiday and statement-date pressures in the money market around the turn of the year (Chart 4).

The financial markets reacted quickly to the Federal Reserve's moves. Money market rates jumped by as much as 45 basis points from the time the discount rate increase was announced on January 6 to the close of business January 9, while smaller, although still substantial, advances were also registered in intermediate- and long-term yields. Subsequently, most of these increases were retraced as market participants began to feel that the Federal funds rate would stabilize at its higher level rather than rise further over the near term.

In response to the early-January initiatives, the dollar had recovered somewhat by the time the Committee met on January 17, although the foreign exchange

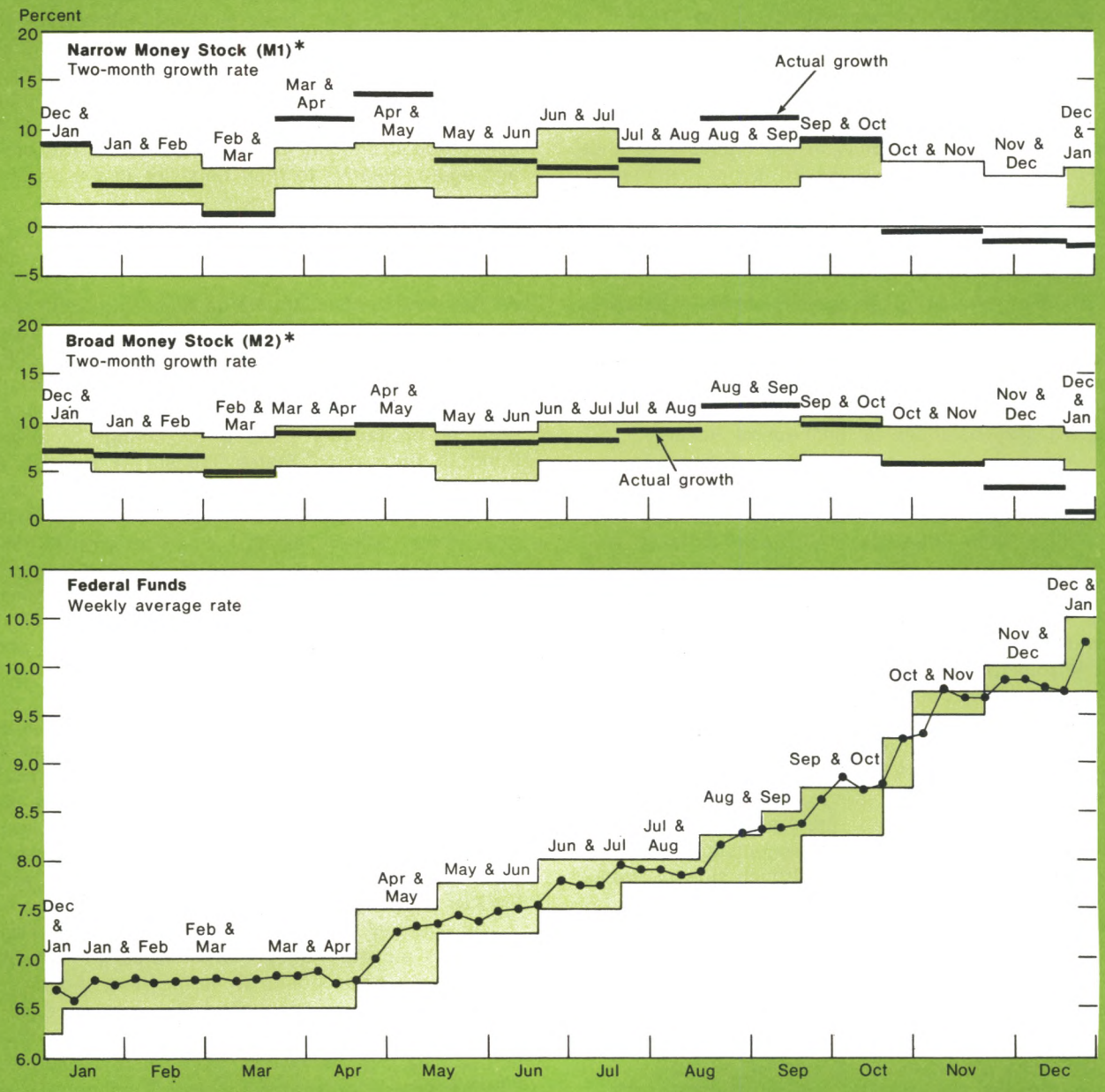
[3] A description of the new procedures can be found in an article by Joan E. Lovett, entitled "Treasury Tax and Loan Accounts and Federal Reserve Open Market Operations", this *Quarterly Review* (Summer 1978), pages 41-46.

[4] Automatic transfer accounts allow depositors to keep funds in a savings account on which a bank may offer an interest rate of up to 5 percent, with the bank transferring these funds to the depositors' checking accounts only when needed to cover clearings. NOW accounts—previously only available in New England—permit drafts directly against interest-bearing accounts.

[5] In light of the distortions to M_1 anticipated from the introduction of automatic transfers, the Committee began to track M_1+ (defined in footnote 2), an experimental measure that attempted to capture all transactions balances. The savings deposit component of this measure declined very sharply in the final months of 1978, despite the shifts into savings accounts because of the automatic transfer option. Consequently, the behavior of M_1+ was even weaker than the traditional M_1.

Chart 4

FOMC Ranges for Short-run Monetary Growth and for the Federal Funds Rate, 1978



Shaded bands in the upper two charts are the FOMC's specified ranges for money supply growth over the two-month periods indicated. No lower bound was established for M1 at the October and November meetings. In the bottom chart, the shaded bands are the specified ranges for Federal funds rate variation. Actual growth rates in the upper two charts are based on data available at the time of the second FOMC meeting after the end of each period.

*Seasonally adjusted annual rates.

markets remained in a sensitive state. Information available at that meeting presented a mixed economic outlook for the year. Most members agreed with the staff assessment that growth of economic activity would be sustained at a good pace throughout 1978. It was also felt that the unemployment rate would decline moderately further over the year, but prices were expected to rise faster than in 1977. Growth of the monetary aggregates had slowed somewhat in the fourth quarter of 1977 from the very high rates registered over the previous two quarters. Nevertheless, for the year as a whole, the expansion of M_1 had been considerably above the FOMC's projected range for the period, set one year before, while growth of the broader aggregates was near the upper bounds of their corresponding ranges.[6]

Against this background, the Committee members felt that any significant easing in money market conditions would be inappropriate, especially in view of the continued weakness of the dollar in foreign exchange markets. On the other hand, there was little sentiment for further firming action unless the monetary aggregates appeared to be growing at rapid rates. Consistent with these views, the Committee directed the Manager to continue aiming initially for a Federal funds rate of 6¾ percent and to vary the funds rate in an orderly fashion within a 6½ to 7 percent range if growth of the aggregates over the January-February period appeared to be approaching or moving beyond the limits of their specified ranges. Growth ranges of 2½ to 7½ percent for the two months were established for M_1 and 5 to 9 percent for M_2.

In the weeks that followed, projected growth of M_1 and M_2 in fact remained reasonably well within the Committee's ranges, and the Desk kept the Federal funds rate unchanged at 6¾ percent. Open market operations in the latter half of January and early February were hampered by severe snowstorms. These caused reserve management problems for banks and large reserve projection errors for the Desk as a result of unexpected bulges in float. The rise in float, along with seasonal declines in required reserves and currency in circulation, more than offset the reserves absorbed by an increasing Treasury balance at the Federal Reserve. Consequently, with few exceptions, the Desk was in the position of draining reserves over the period. To absorb reserves on a temporary basis, the Desk arranged repeated rounds of matched sale-purchase transactions in the market when the funds rate tended to drift below the System's objective. Since the reserve excess was expected to persist for several weeks, the Desk's outright transactions were also largely on the selling side. A substantial amount of the System's maturing Treasury bills was run off at the regular weekly and monthly auctions. The Desk also absorbed reserves by selling bills to foreign accounts, which continued to acquire dollars through intervention in the foreign exchange markets.[7]

Starting in late January, the Desk became able to pass through foreign account temporary investment orders to the market as customer-related RPs.[8] Thus, it could choose to execute part or all of such orders in the market under appropriate conditions of reserve availability and cost. At other times, when there was a need for the System to arrange its own RPs, the Desk could adjust the amounts made in the market to take account of the foreign orders which were arranged as matched sale-purchase transactions with the System. Over time, participants came to view the arrangement of customer-related RPs in the market as suggesting that reserve conditions—rate and availability—were reasonably close to those desired.

At both the February and March meetings, the Committee retained the 6½ to 7 percent range for Federal funds. Although economic activity had faltered in the early months of the year, the sluggishness appeared to reflect the unusually severe winter weather and a lengthy coal strike. The staff expected the resultant losses to be made up in the second quarter. Data

[6] At the time of the January meeting, M_1 was estimated to have advanced by 7.4 percent from the fourth quarter of 1976 to the fourth quarter of 1977, above the 4½ to 6½ percent range announced by the Committee for the period. Over the same interval, M_2 growth was placed at 9.6 percent and M_3 growth at 11.6 percent, compared with the Committee's ranges of 7 to 10 percent and 8½ to 11½ percent, respectively. Subsequent revisions boosted growth over the four-quarter period to 7.9 percent for M_1, 9.8 percent for M_2, and 11.7 percent for M_3.

[7] A System sale of bills to a foreign account absorbs reserves indirectly. Dollars acquired by a foreign country in the exchange markets are credited to the foreign account at the Federal Reserve and deducted from member bank reserve accounts. If the foreign account's orders to buy bills are executed in the market, the payment for the bills returns reserves to the banking system. Implicitly, this is the standard assumption made in preparing reserve projections, so that foreign countries' gains or losses of dollars are considered "neutral" in their impact on United States bank reserves. But if, instead of executing the foreign orders in the market, the System sells to the foreign account, bank reserves remain lower by the amount of the sale. Similarly, System purchases from a foreign account provide the deposits that are paid out by the account and that add to member bank reserves.

[8] During much of 1977, the Desk met such orders entirely through matched sale-purchase transactions with the System Account. In November 1977, the Internal Revenue Service ruled that income from foreign account RPs arranged with the Federal Reserve Bank of New York, which might have corresponding back-to-back RPs with dealers, as well as from those arranged as matched sale-purchase transactions with the System Account, was free of tax liability. This ruling paved the way for the above-mentioned arrangements initiated on January 23.

available at the February meeting suggested a decline in M_1 that month from its level in January and slow growth of M_2. The weakness in the monetary aggregates appeared to be related to the sluggishness in the economy. In view of the uncertainties over the economic outlook and the behavior of the aggregates, the Committee continued to specify a money market directive at the February meeting for the fifth consecutive month, reducing the likelihood that the Federal funds rate would change. At the March meeting, after new money stock estimates for the first two months of 1978 showed significantly greater growth than previously thought, the Committee returned to an aggregates directive, thus increasing the likelihood that the funds rate would rise quickly in response to indications of monetary strength.

Soon after the February 28 meeting, data and new projections for the February-March period suggested that growth of M_1 and M_2, taken together, would closely approach the lower bounds of the Committee's tolerance ranges. Ordinarily, this might have prompted the Desk to seek some reduction in the funds rate within its specified range. However, the weakness of the monetary aggregates still appeared temporary, and the dollar meanwhile had come under another heavy bout of selling pressure in the foreign exchange markets after more than a month of relative calm. Under these circumstances, the Committee decided at a telephone meeting on March 10 to retain the 6¾ percent funds rate objective for the time being.

Projections of the monetary aggregates available immediately after the regular March meeting showed a pickup in growth, and for a short while estimates for the March-April period were on the high side of the Committee's tolerance ranges. Subsequently, the unexpected strength evaporated, and the estimates fell back to rates well within the specified ranges. The Federal funds rate continued to hover close to 6¾ percent until mid-April.

Following the sharp advances in early January, most interest rates fluctuated within a narrow range over the remainder of the winter. Market participants were encouraged by the stability of the Federal funds rate, while the slowing in business activity and apparent sluggish growth of the monetary aggregates tended to offset concern over inflation and the weak performance of the dollar in foreign exchange markets. Toward the end of March, however, intermediate- and long-term yields resumed their climb, as market participants reacted to signs that the economy was rebounding and inflationary pressures were strong. Investor concerns mounted following reports of a record trade deficit in February and the significant upward revisions to the monetary aggregates for the first two months of the year. Expectations grew that monetary policy would soon have to exert greater restraint.

Mid-April to mid-October

By the time the Committee met on April 18, it was clear that the economy was recovering strongly from the weather- and strike-plagued winter. Prices had already advanced very rapidly in the early months of the year. To some extent the acceleration of inflation reflected special factors, such as curtailed food supplies associated with the harsh weather and the January boosts in payroll taxes and the minimum wage. But there was also evidence that inflationary expectations had shifted upward, and the Committee was deeply concerned about the prospects for prices. In the financial markets, upward pressure on interest rates appeared to be building. Households were continuing to take on instalment and mortgage debt at a rapid rate. Business borrowing at commercial banks had accelerated from the already brisk pace of 1977. And, to finance heavy loan demand, banks in turn were stepping up their issuance of large CDs. Although the expansion of the monetary aggregates had slowed in the first quarter, it seemed likely to strengthen along with the economy. There were already indications that M_1 would grow rapidly in April.

Under these circumstances, all the members agreed that operations designed to achieve firmer money market conditions needed to be undertaken promptly if monetary growth were to be held in a path reasonably consistent with the Committee's long-run objectives. At the same time, they felt that any initial action should be modest pending further evidence as to whether the aggregates were growing at rapid rates. Accordingly, the Committee established 7 percent as the initial Federal funds rate objective. It also raised the intermeeting range for funds to 6¾ to 7½ percent, while instructing the Manager not to aim for funds trading above 7¼ percent until the members had an opportunity for further consultation. At this meeting, the Committee restructured the language of the domestic policy directive, giving added weight to the objective of restraining inflationary pressures by placing it ahead of the objectives of encouraging continued moderate economic expansion and contributing to a sustainable pattern of international transactions.

After the Tuesday meeting, the Desk moved quickly to signal the System's firmer posture in advance of the Treasury's two-year note auction the next day and the upcoming announcement of its May refunding a week later. Early on Wednesday the Desk arranged matched sale-purchase transactions in the market when Federal funds were trading at 6¾ percent, a level at which the Desk has passed through customer RP orders to

the market on some occasions earlier in the week. The clear evidence of an increase in the funds rate caught market participants by surprise. Although many had been anticipating a rise for some weeks, they thought it would be deferred since the statistics for the first week in April—published on the thirteenth—had shown no large jump in M_1.

While an objective of around 7 percent was kept for the funds rate at the start of the April 26 week, the Desk permitted expected reserve deficits to cause the money market to firm somewhat further, given indications that money growth in April and May was likely to be strong. After it had passed through a portion of foreign account RP orders to the market when funds were at 7 percent before the weekend—thus indicating some satisfaction with that rate—it arranged such orders as matched transactions with the System when similar conditions prevailed later. Enlarged member bank borrowings over the weekend had added to reserves and, on Tuesday, the Desk was quick to respond to a softening in funds to below 7 percent by arranging matched sale-purchase transactions in sufficient volume to generate some reserve need. By the settlement day, with new data suggestive of greater strength in the aggregates, the Desk began seeking funds trading at 7⅛ percent, which became evident when it let the rate move somewhat above that level before providing reserves. With the auctions of Treasury refunding issues slated for the start of May and, after appraising the strength in the projections of the aggregates near the start of the May 3 statement week, the Desk adopted an objective of 7¼ percent for the funds rate. While interest rates had been rising since the initial firming move about two weeks earlier, sizable adjustments had proceeded smoothly and demand for the new securities was reasonably good.

On Friday, May 5, estimates of the aggregates were even stronger, with M_1 seen well above its specified range of 4 to 8½ percent and M_2 close to the top of its 5½ to 9½ percent range for April and May combined. A telephone meeting of the FOMC was held that day to discuss whether the funds rate should be permitted to rise above 7¼ percent. Staff analysis suggested that the surge in the monetary aggregates largely reflected the economic rebound, as well as several transitory factors. The majority of the members preferred to wait for additional evidence on the economic outlook and the behavior of the aggregates before tightening further. Hence, the Committee voted to retain the funds rate objective at 7¼ percent, but it indicated a preference for resolving doubt on the high side of that objective.

At each successive meeting over the spring and summer, the Committee sought a further firming in money market conditions as the monetary aggregates rose rapidly and inflationary pressures remained strong. Growth of the aggregates came in spurts, making it difficult to determine the underlying trend. The advances in April and September were particularly sharp, with more moderate increases registered in the intervening months. The Committee sought to provide for a quick Desk response to evidence that the aggregates were accelerating. Except for the July meeting, it adopted aggregates directives through September. The allowable range for the Federal funds rate remained narrow, however, ranging from ¼ to ¾ percentage point but most often at ½ percentage point for the intermeeting periods.

With M_1 and M_2 rising rapidly, the Desk often found itself operating in the upper portion of the intermeeting ranges for Federal funds specified by the Committee. On several occasions, available data suggested that growth of the aggregates would approach or exceed the upper limits of the Committee's two-month tolerance ranges at a time when the Desk was already seeking Federal funds trading at the highest level authorized without further instruction from the Committee. In a wire vote in mid-June, the Committee retained the existing Federal funds rate objective in view of the proximity of the regularly scheduled June meeting. In early September, however, the Committee raised the objective further through a special telephone meeting. By mid-October, the firming in the System's policy stance had brought the Federal funds rate up to 8¾ percent, 2 percentage points above the early-April level.

On five separate occasions over the spring through the early fall, the Board approved actions by the Reserve Banks to raise the discount rate. The cumulative effect of these actions was to increase the rate by 2 percentage points to 8½ percent by mid-October. The Board stated that the actions were taken primarily to bring the discount rate in closer alignment with other short-term rates. In announcing the October boost, it stressed its concern with continued high inflation, the rapid rate of monetary expansion, and conditions in the foreign exchange markets.

The April-October period was marked by wide shifts in investor sentiment, and interest rates showed great variation, particularly on intermediate- and long-term issues. While rates rose across the maturity spectrum during the spring and into the summer, a sharp price rally emerged toward the end of July. Two successive declines in the weekly money stock statistics, coupled with the release of data suggesting a slowdown in the pace of the economic expansion, convinced many participants that the System was likely to maintain a steady posture over the near term rather than to seek

additional firming in money market conditions. Feeling developed in some quarters that yields in the capital markets could be near their cyclical peaks. In this climate, investors rushed to lock in current yields in long-term securities, while Government securities dealers scrambled to cover short positions—which had become very large in the predominantly bearish atmosphere of the spring and early summer. Bidding interest in the Treasury's sale of three- and seven-year notes and thirty-year bonds in early August was especially strong, and average issuing yields set in the auctions were well below the levels anticipated at the time the offerings were announced in the previous week.

The rally in the money markets was brief. After dropping about 10 to 30 basis points over a two-week period, short-term rates began to rise around mid-August when the Federal funds rate resumed its climb, and they continued to advance through the remainder of the summer and fall. In contrast, the capital markets extended the rally until the middle of September. By that time, longer term yields had fallen by 25 to 40 basis points from the levels of mid-July. At first, the rise in money market rates appeared to have little effect on the long-term sectors. However, in the face of continued strong growth of the monetary aggregates and the likelihood that short-term rates would have to rise further, participants began to reassess the interest rate outlook. A further revision in the money stock measures, which boosted the growth of M_1 over the first eight months of the year, contributed to the more bearish sentiment. The turnaround in long-term yields occurred quickly. By the time the Committee met in mid-October, most of the previous declines had been retraced.

Mid-October to the year-end

The Committee faced more than the usual uncertainties at its October meeting. In the first place, starting November 1, commercial banks were authorized to begin offering their nonbusiness customers a transfer option that would allow funds to be shifted from savings accounts to checking accounts automatically. While ATS seemed certain to slow M_1 growth relative to that of GNP, the size and the speed of its effects on M_1 were difficult to estimate. Second, the precise shape of President Carter's new anti-inflation program was still to be announced. The members agreed, however, that monetary and fiscal restraint would have to accompany the program if it were to succeed in reducing the rate of inflation.

In this connection, concern was expressed about the rapid growth of the monetary aggregates over the previous calendar quarters, and most members agreed that additional firming in System policy was necessary to assure a slowdown in growth over the period ahead. Accordingly, the Committee directed the Manager to seek a Federal funds rate of around 9 percent—up from its prevailing level of 8¾ percent—while increasing the intermeeting range for funds to 8¾ to 9¼ percent. To deal with the uncertainties involved in ATS, primary weight was given to M_2 as a guide to open market operations in the intermeeting period, with M_1 entering only if its upper bound were exceeded. No lower bound was specified. The staff also began, on an experimental basis, to track M_1+ to provide the Committee and the Desk with additional background on the behavior of transactions balances until experience with the effects of ATS could be obtained.

After the October meeting, the Desk sought an increase in the funds rate to the 9 percent midpoint of the FOMC's range. In the October 25 statement week, the Desk waited for a large projected reserve need to show through in the money market but this did not develop until relatively late. To meet large reserve deficiencies, the Desk arranged repeated rounds of RPs on the last three days—announcing them in the afternoon before the day they were to be executed and extending the time limit for receiving propositions when offerings proved modest. With interest rates rising and auctions of issues offered in the Treasury's November refunding slated to begin October 31, dealer positions were very low. The Treasury assisted in easing the reserve scarcity on the final two days by making redeposits with commercial banks from its balances at the Federal Reserve. Still, the funds rate rose by nearly 50 basis points that week to just under 9¼ percent.

The firmness in the money market carried into the next statement week, though the Desk became gradually more willing to tolerate this in view of the weakness evident in foreign exchange markets and mounting indications that new policies to aid the dollar were being formulated. The higher level of funds trading—in the area of 9⅛ to 9¼ percent—imparted a sense of impending higher interest rates and caution in the market as it prepared to take on the Treasury's new offerings.

Meanwhile, the situation in the foreign exchange markets was nearing crisis proportions. President Carter's anti-inflation program, announced on October 24, had been greeted unenthusiastically in the exchange markets, and selling pressure against the dollar intensified. By the end of October, the dollar had dropped in value from its beginning-of-the-year levels by 36 percent against the Japanese yen, 35 percent against the Swiss franc, and 22 percent against the German mark. The depreciation of the dollar

threatened to undermine the nation's efforts to curb inflation and to throw the international financial system into disarray. Consequently, in the closing days of October, Federal Reserve and Treasury officials, partly in consultation with foreign officials, began to formulate measures to deal with the situation, and by the beginning of November a broad dollar defense program was ready to be put in place.

The new program, announced jointly by President Carter, the Treasury, and the Federal Reserve on the morning of November 1, involved a series of concerted actions designed, not only to halt the dollar's slide in foreign exchange markets, but also to correct the excessive declines that had taken place. It featured a marked tightening of monetary policy and the announcement that the United States, in coordination with other countries, was prepared to intervene forcefully and on a sustained basis in the exchange markets. The discount rate at the New York Federal Reserve Bank was raised immediately by 1 percentage point—the steepest increase since 1931—to a record 9½ percent. The other Reserve Banks joined the move shortly thereafter. A supplementary reserve requirement of 2 percent was placed on time deposits in denominations of $100,000 or more to help moderate the expansion of bank credit and increase the incentive for member banks to borrow funds abroad. In line with Committee discussion the previous day, with final activation of the decision left to Chairman Miller following announcement of the full program, the range for Federal funds was raised to 9½ to 9¾ percent. To finance United States intervention in the exchange markets, a $30 billion package of foreign currencies was mobilized. This included a $7.6 billion increase to $15 billion in the Federal Reserve swap lines with the central banks of Germany, Switzerland, and Japan. The Treasury announced that it would draw $3 billion from the United States reserve position with the International Monetary Fund, sell $2 billion equivalent of special drawing rights, and issue up to $10 billion equivalent of foreign currency-denominated securities. Finally, the Treasury also announced that it would expand its gold sales.

The announcements had immediate and dramatic effects on financial markets. The dollar rebounded strongly against other major currencies, the bond markets rallied, and stock prices, as measured by the Dow Jones industrial average, registered their largest one-day gain on record. In the enthusiastic atmosphere, a 3½-year Treasury note auctioned the day before as part of the November refunding rose quickly to a high premium. The remaining two auctions were postponed for a day to allow the markets a little time to adjust to the actions taken. The auction of ten-year notes on November 2 encountered weak demand, as some participants felt that the rally was being overdone, but strong interest developed for the thirty-year bond sold one day later.

In the wake of the announcements, short-term interest rates increased sharply, and trading in Federal funds on November 1 jumped immediately to the 9⅞ to 10 percent area—somewhat above the Committee's newly adopted 9½ to 9¾ percent range. In order not to blunt the impact of the dollar defense program, the Desk avoided aggressive action to push the funds rate down to the new range, and trading in funds hovered above 9¾ percent for several days. By the end of the following week, market factors began releasing reserves in substantial volume, and the funds rate eased down to a level within the specified range, but again, consistent with the dollar defense program, the Desk acted to keep trading largely in the upper portion of the range.

Desk outright sales of Government securities to foreign customers were unusually heavy in the first three statement weeks of November, amounting to over $4 billion. The sales helped absorb reserves released by a sharp drop in Treasury balances at the Federal Reserve, which arose partly because of the implementation of the new cash management program. The sales also helped meet foreign account demand for Treasury bills at a time when market supplies of these issues were scarce. On several occasions, to avoid pressing further demands for short-term bills on a virtually depleted market and adding to the downward pressure on rates, the Desk sold bills with short-term maturities to foreign accounts while purchasing a similar amount of longer term bills in the market.

At the final two meetings of 1978, the Committee voted for additional tightening of money market conditions in recognition of the intensity of inflationary pressures and in further support of the dollar defense program. It moved cautiously, however, as incoming economic and financial data presented conflicting signals on the outlook. On the one hand, the pace of business activity quickened in the closing months of the year, suggesting underlying economic strength. At the same time, however, growth of the monetary aggregates slowed sharply, especially M_1 which was much weaker than could be attributed to the effects of ATS alone. At the November meeting, the Committee raised the intermeeting range for Federal funds from the 9½ to 9¾ percent objective set on November 1 to 9¾ to 10 percent, while instructing the Manager to aim for an initial level of funds trading at 9⅞ percent. The Committee continued to deal with the uncertainties involved with ATS in the same way that it had at the October meeting—namely, by specifying only an upper

bound for the two-month growth of M_1 and by directing the Manager to place more weight than usual on the behavior of M_2 as a guide to open market operations. At the December meeting, the range for Federal funds was set at 9¾ to 10½ percent and an initial objective of 10 percent or slightly above was established. In light of the experience obtained with the effects of ATS by the December meeting, the Committee returned to setting a range for M_1 growth over the two-month period and to placing equal emphasis on the behavior of M_1 and M_2. However, the directive was structured to make the Manager more responsive to relatively high, than to relatively low, monetary growth rates. In fact, the Committee later took action to avoid having the funds rate decline when the aggregates weakened.

Money stock growth was sluggish over the final months of the year, and the weakness continued into early 1979. Following both the November and December meetings, growth estimates for M_1 and M_2 were progressively lowered to rates near or below the bottom of the Committee's corresponding ranges, raising questions about whether the Desk should modify its approach to the Federal funds rate. Other factors, however, argued for no change—including the still fragile state of the dollar, the lack of evidence that either inflation or economic activity was abating, and uncertainty about the reasons for the slowdown in monetary growth. In wire votes on December 8 and again on December 29, the Committee agreed with the Chairman's recommendations to keep the funds rate objective unchanged at the prevailing level. As the year ended, the objective remained at 10 percent or slightly above.

Yields on fixed-income securities pressed higher over the closing months of 1978. Most short-term rates moved up in rough alignment with the advance in the Federal funds rate. The rise in CD rates, however, was initially more pronounced, as banks aggressively sought to issue CDs during November. Prime lending rates were boosted further in several steps to close the year at 11¾ percent, only ¼ percentage point below the peak in 1974. The rally in the capital markets that followed in the wake of the November 1 announcements soon faded. Yields in the long-term sectors rose through most of December in reaction to indications of greater than expected strength in the economy and further evidence of the persistence of inflation. Some encouragement was taken from the moderation in the growth of the monetary aggregates, but market analysts were not confident that it would last. Toward the year-end, however, the markets stabilized as participants again debated whether long-term yields might finally be nearing their cyclical peaks.

August 1978-January 1979 Semiannual Report
(This report was released to the Congress and to the press on March 8, 1979)

Treasury and Federal Reserve Foreign Exchange Operations

On November 1, 1978, President Carter, the United States Treasury, and the Federal Reserve announced a series of actions to correct what had become an excessive decline of the United States dollar in the exchange market. Between early August and end-October, the dollar had fallen sharply against most major foreign currencies, including net depreciations of 18 percent against the German mark, 17 percent against the Swiss franc, and 7 percent against the Japanese yen. The renewed selling pressure on the dollar, as with earlier periods of decline in 1977-78, had largely been in reaction to the persistence of the large United States trade and current account deficits, compared with surpluses in several other industrial countries, and to a quickening of inflation in the United States, as against steady or slowing rates of inflation elsewhere. By late October the selling pressure had gathered such force that dollar exchange rate movements had gone beyond what could be justified by underlying economic conditions and were threatening to undermine United States efforts to curb inflation.

In fact, the United States trade deficit had begun to narrow, as manufacuring exports in particular were expanding sharply, a trend that was expected to continue. Economic growth in the United States was expected to moderate in 1979, while more rapid expansion was already under way in several other major countries. The sharp rise in United States interest rates over the course of 1978, while interest rates elsewhere were steady or rising more slowly, had opened up substantial interest differentials in favor of placements in the United States. But the market atmosphere had become so extremely bearish that few expected the dollar's slide to stop or be reversed on its own.

The November 1 program, developed in close cooperation with governments and central banks of three major foreign countries, was linked closely to the broader anti-inflation policies of the United States Government. It featured a further tightening of monetary policy, including a 1 percentage point increase in the Federal Reserve discount rate to a historic high of 9½ percent. Also, it provided for additional foreign currency resources totaling up to $30 billion equivalent to finance United States participation in coordinated intervention in the exchange markets. For the Federal Reserve, this involved a $7.6 billion increase in the swap network through increases in the swap arrangements with the German Bundesbank, the Bank of Japan,

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This is the first semiannual report on Treasury and Federal Reserve foreign exchange operations to appear since the adoption on September 1 of a new convention for quoting foreign exchange rates in the New York market. To bring market practice here into line with that in most other trading centers around the world, the market switched to express exchange rates in terms of the number of foreign currency units per dollar for currencies other than the pound sterling, which continues to be quoted in terms of the dollar value per unit of currency. In keeping with this shift in convention, all currency rates in this report except sterling are expressed in terms of the number of foreign currency units per dollar.

and the Swiss National Bank to a total of $15 billion. For its part, the Treasury announced that it would draw $3 billion in marks and yen from the United States reserve position with the International Monetary Fund (IMF) and sell $2 billion equivalent of special drawing rights (SDRs) to mobilize additional balances of German marks and Japanese yen, as well as Swiss francs. The Treasury also announced that it would issue foreign-currency-denominated securities up to $10 billion equivalent. In addition, the Treasury announced it would substantially increase the amounts of gold to be offered at its monthly auctions.

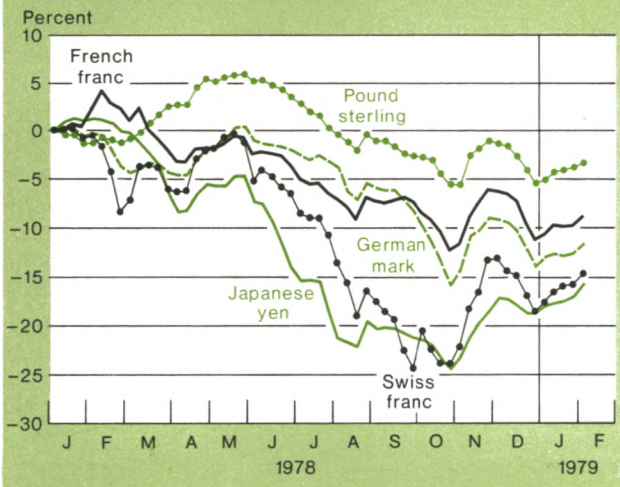
The United States authorities followed up the announcements by intervening massively in the New York market through the Foreign Exchange Trading Desk of the Federal Reserve Bank of New York in German marks, Swiss francs, and Japanese yen. These operations were fully coordinated with intervention by other central banks in their own markets and in some cases in New York. The dollar rebounded sharply, and reactions were similarly favorable in United States financial markets. Thereafter, the exchange market gradually came into better balance with good two-way trading at levels well above the late-October lows, and the authorities were able to scale back their intervention. By late November-early December, the dollar had advanced by nearly 12 percent against the German mark, 15 percent against the Swiss franc, and 13 percent against the Japanese yen.

Despite the improved outlook, however, the dollar's recovery rested on fragile footing for the time being. Many market participants remained pessimistic about the prospects for bringing inflation under control in the United States and continued to question whether the authorities would succeed in their efforts to halt the erosion of the dollar's value in the exchange markets. The dollar therefore remained vulnerable to potentially adverse political and economic shocks around the world. In early December the political upheavals in Iran, coupled with a stoppage of that country's production and export of oil, prompted a burst of dollar selling. The mid-December announcement by the Organization of Petroleum Exporting Countries (OPEC) of a greater than expected rise in oil prices by some 14.5 percent over the course of 1979 triggered additional selling of dollars. The United States authorities, along with the other central banks, again intervened in substantial amounts to blunt these selling pressures on the dollar without holding rates at any particular level. But bearish sentiment deepened, and dollar rates slipped back some 2 to 5½ percent from their early-December highs.

By the end of December, the United States authorities had sold a total of $6,659.4 million of foreign cur-

Chart 1

The Dollar Against Selected Foreign Currencies

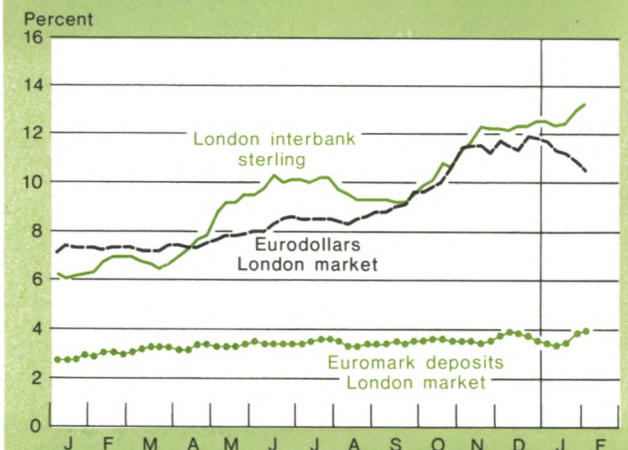


*Percentage change of weekly average of bid rates for dollars from the average rate for the week of January 3-6, 1978. Figures calculated from New York noon quotations.

Chart 2

Selected Interest Rates

Three-month maturities*



*Weekly averages of daily rates.

Table 1

Federal Reserve Reciprocal Currency Arrangements

In millions of dollars

Institution	Amount of facility January 1, 1978	Increases effective during 1978	Amount of facility January 31, 1979
Austrian National Bank	250		250
National Bank of Belgium	1,000		1,000
Bank of Canada	2,000		2,000
National Bank of Denmark	250		250
Bank of England	3,000		3,000
Bank of France	2,000		2,000
German Federal Bank	2,000	4,000*	6,000
Bank of Italy	3,000		3,000
Bank of Japan	2,000	3,000†	5,000
Bank of Mexico	360		360
Netherlands Bank	500		500
Bank of Norway	250		250
Bank of Sweden	300		300
Swiss National Bank	1,400	2,600†	4,000
Bank for International Settlements:			
Swiss francs-dollars	600		600
Other authorized European currencies-dollars	1,250		1,250
Total	20,160	9,600	29,760

* Increased by $2,000 million each on March 13 and November 1, 1978.

† Increased on November 1, 1978.

Table 2

Federal Reserve System Drawings and Repayments under Reciprocal Currency Arrangements

In millions of dollars equivalent; drawings (+) or repayments (−)

Transactions with	System swap commitments January 1, 1978	1978 I	1978 II	1978 III	1978 IV	1979 January	System swap commitments January 31, 1979
German Federal Bank	800.1	+1,008.5	+ 35.2 −800.1	+360.8 −714.9	+4,154.3 − 409.7	+188.7 −428.4	4,168.2*
Bank of Japan	-0-	-0-	-0-	-0-	+ 156.5 − 50.0	−106.5	-0-
Swiss National Bank	-0-	+ 69.0	+ 4.8 − 69.0	+165.7	+ 847.5 − 231.7	+ 33.8 −373.4	446.7
Total	800.1	+1,077.6	+ 40.1 −869.1	+526.5 −714.9	+5,158.2 − 691.4	+222.5 −908.3	4,614.9*

Because of rounding, figures may not add to totals. Data are on a value-date basis with the exception of the last two columns, which include transactions executed in late January for value after the reporting period.

* Outstanding commitments as of January 31, 1979 also include revaluation adjustments resulting from swap renewals, which amounted to $26.3 million for drawings on the German Federal Bank renewed during January.

rencies since November 1. Net of repayments, Federal Reserve commitments under the swap lines with the German Bundesbank, the Swiss National Bank, and the Bank of Japan rose to a peak of $5,456.9 million in early January. United States Treasury drawings under its swap arrangement with the Bundesbank stood at $889.4 million equivalent, and the Treasury had used $1,820.4 million of the $4.4 billion equivalent of currencies obtained through IMF and SDR transactions in November and through the issuance of $1,595.2 million equivalent of mark-denominated securities in the German capital market in December.

Though many market participants expected further downward pressure on the dollar in January, renewed selling failed to materialize and the dollar gradually regained resiliency in the exchanges. In fact, the dollar had been heavily oversold in late 1978. Moreover, on those occasions when the dollar did come on offer, the authorities quickly met the pressures, helping restore a greater sense of two-way risk in the market. As the market thus came into better balance, traders began to respond more positively to the thrust of United States policy. The Carter Administration opened the new Congressional session by calling for austerity in fiscal policy to deal with inflation and the dollar problem. Federal Reserve spokesmen continued to emphasize the need for monetary restraint. The Federal Reserve provided tangible evidence of this determination by keeping domestic interest rates firm even as the growth of monetary aggregates slowed. With the dollar taking on a firmer tone in the exchanges, the German Bundesbank was able to begin to absorb some of the excess mark liquidity created in 1978 and Switzerland and Japan lifted temporary barriers to capital inflows.

In late January the demand for dollars picked up further, as market participants began to view the Iranian situation and possible oil shortages as a potentially serious problem for Western Europe and Japan as well as for the United States. The dollar's surge caught some market participants by surprise, prompting a sudden scramble for dollars toward the month end. The central banks stepped in to avoid an outbreak of disorderly conditions in the upward direction. On these occasions, the United States authorities purchased a total of $188.8 million equivalent of German marks, Swiss francs, and Japanese yen. At end-January, dollar rates stood some 9 to 14 percent above the end-October 1978 lows.

As the dollar improved in early 1979, the United States authorities were able to step up efforts to clear away swap indebtedness, repaying a net $1,118.3 million equivalent of commitments. These repayments were effected by purchases of currencies mainly from correspondents but also in the market. By the end of January, the Federal Reserve had reduced total swap drawings outstanding to $4,615 million equivalent and the United States Treasury had reduced its swap drawings in German marks to $613.0 million equivalent. Also, in January, the Treasury issued in the Swiss market $1,203 million equivalent of medium-term notes denominated in Swiss francs. Foreign currency securities issued during the period were thereby increased to a total of $2,798.2 million valued on the dates of issue. As of January 31, 1979, the value of these liabilities amounted to $2,821.8 million.

In all, during the six-month period from August 1978 to January 1979, the intervention sales of foreign currencies by the United States authorities totaled $9,359.1 million. In German marks, sales over the six-month period amounted to $8,122.9 million, of which $4,939.2 million was for the Federal Reserve and $3,183.7 million was for the Treasury. In Swiss francs, the Federal Reserve sold a total of $1,029 million over the six-month period. Sales of Japanese yen totaled $207.3 million, of which $160.8 million was for the System and $46.5 million was for the Treasury.

In other operations, the Federal Reserve and the United States Treasury continued to repay pre-August 1971 Swiss franc-denominated liabilities still outstanding with the Swiss National Bank. The Federal Reserve bought sufficient francs directly from the Swiss National Bank to liquidate $139.6 million equivalent of special swap debt with the Swiss central bank. The Treasury used Swiss francs purchased directly from the Swiss central bank to repay $319.2 million equivalent of franc-denominated securities. As of January 31, $139.3 million equivalent of System special swap debt and $531.2 million equivalent of the Treasury's obligations still remained outstanding.

German mark

Since the mid-1970's, the German mark had been caught up in recurrent heavy inflows of speculative and investment funds, leading to a sharp appreciation of the rate against the dollar as well as against most other major currencies. The mark's underlying strength reflected Germany's large current account surplus. German industry had successfully weathered the previous substantial appreciations of the mark and had maintained, if not improved, its competitiveness in many markets. Moreover, the German government, mindful of the broad public concern over inflation, had been cautious about providing stimulus to the economy. As growth in Germany lagged behind the expansion under way elsewhere, particularly in the United States, the current account surplus mounted.

In fact, the mark's appreciation had temporarily

added to the size of the current account surplus through terms of trade effects. It also allowed Germany to make further progress in curbing inflation, to the extent that prices rose by only 2½ percent in 1978. Even so, the cumulative rise in the mark exceeded relative inflation differentials with many trading partners, including the United States, and was clearly having a depressing effect on the German economy. By 1978, the German government had moved gradually to provide more stimulus to the domestic economy through fiscal measures, but the market remained doubtful that the underlying differences in economic performance were likely to change very quickly.

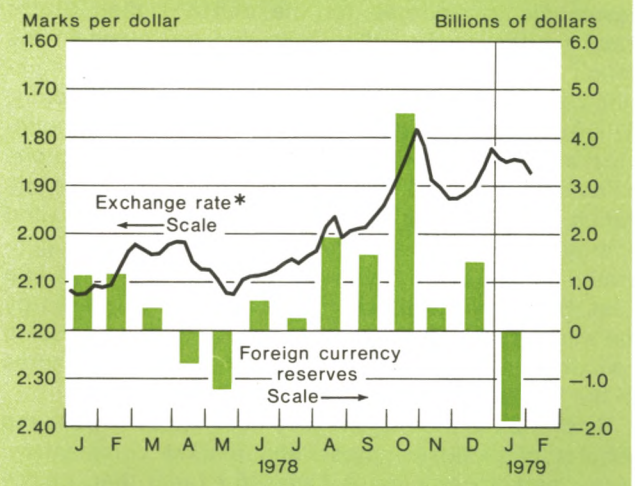
Under these circumstances, trading conditions in the exchange market between the mark and the dollar had occasionally become extremely disorderly. In late 1977-early 1978, German and United States authorities had intervened heavily in the exchanges to settle the market and to reestablish a sense of two-way risk. For the United States, the Federal Reserve and the Treasury had both intervened, mainly using marks drawn under swap arrangements with the Bundesbank. In March, the United States had announced its preparedness to sell SDRs to Germany and to draw marks from the IMF, but such operations were not necessary at the time. The dollar firmed over the next months, and the United States authorities were able to unwind a sizable part of the swap debt. By the end of July, the Federal Reserve's swap debt to the Bundesbank had been reduced to $650.5 million equivalent and the Treasury's to $197.0 million equivalent. Meanwhile, in view of the recurrent strains in the exchange markets, the governments of the European countries decided to work toward linking their currencies together under common intervention arrangements. At a summit meeting in Bremen in July, the European Community (EC) governments made a formal commitment to establish a European Monetary System (EMS) along these lines with the specifics to be negotiated by the year-end.

A sense of deep frustration nevertheless prevailed in the exchange markets about the kind of underlying adjustments that would be necessary to establish stability in the dollar-mark relationship. At the Bremen and Bonn summit meetings in July, the German government had promised to take additional stimulative measures which were subsequently implemented. But, by early August, both the Swiss franc and the Japanese yen had come into strong demand and the unsettlement in those markets triggered renewed demand for marks against dollars. The spot mark, which had been trading at DM 2.0330 at the end of July, was bid up to DM 1.9370 by August 15, a rise of 5 percent. The Bundesbank and the Federal Reserve intervened to temper the rise.

Chart 3

Germany

Movements in exchange rate and official foreign currency reserves



*Exchange rates shown in this and the following charts are weekly averages of noon bid rates for dollars in New York.

On August 16, President Carter expressed his deep concern over the decline of the dollar, asking Secretary of the Treasury Blumenthal and Federal Reserve Chairman Miller to seek ways to stem the decline. Over subsequent days and weeks, the United States authorities followed up with a series of measures. The Federal Reserve tightened money market conditions, hiked the discount rate ¾ percentage point in two stages to 8 percent by late September, and eliminated reserve requirements on member banks' Eurodollar borrowings. The Treasury announced it would triple the amount of gold at its monthly auctions. Moreover, the Administration pressed the Congress to seek means of reducing the budget deficit even further and to resolve the remaining issues which held up passage of an energy bill. The market responded favorably to these initiatives, and the mark fell back to trade around DM 1.9850 in early September.

The market's extreme pessimism toward the dollar did not lift completely, however, and trading remained volatile. Consequently, the Bundesbank and the New York Federal Reserve intervened on several occasions in late August. For the month, the Desk's sales of marks for the Federal Reserve and the Treasury amounted to $285.1 million equivalent and $277.9 million equivalent, respectively, financed partly out of balances and partly by additional drawings under the

swap lines with the Bundesbank. At the same time, the Desk was able to acquire marks, largely through non-market transactions with correspondents, to repay swap drawings.

During September, a number of potentially favorable developments emerged for the dollar. United States trade figures showed that, following the bulge in the deficit earlier in the year, import demand was beginning to slacken while exports were expanding rapidly. With economic expansion in Germany and other countries now more solidly based, official projections pointed to a further and substantial narrowing of the deficit for 1979. The Senate passed the long-awaited energy bill. And the Camp David accord had generated hopes of an easing of tensions in the Middle East. But these developments were largely ignored by the exchange markets, where traders were expressing concern over the resurgence of inflationary pressures in the United States.

By that time, the negotiations over the EMS were the subject of extensive press and market commentary. Many market participants came to expect that, before the new arrangements could be introduced, scheduled for January 1, a generalized realignment would be necessary to revalue the mark substantially relative to the other currencies. As these expectations spread, heavy demand for marks built up, particularly before weekends. The Bundesbank and the other EC central banks had to intervene in progressively larger amounts to maintain the 2¼ percent margin between participating currencies. From the July Bremen summit to mid-October, some $5 billion equivalent of marks was pumped into the market by participating central banks. Then on October 15 the mark was revalued by 2 percent against the Netherlands guilder and the Belgian franc and by 4 percent against the Norwegian and Danish kroner. This stopped the immediate speculative pressure on the snake but did not generate significant reflows.

Instead the bidding for marks continued. With the focus now shifting back to the dollar, a massive amount of hot money flowed out of dollars and into marks. Corporate treasurers, investment managers, central banks, and other dollar holders around the world sought to diversify their portfolios by buying marks and other currencies. The Federal Reserve's decision on October 13 to raise the discount rate another ½ percentage point to 8½ percent was ignored, as were the generally favorable interest rate differentials for the dollar. As the selling pressure on the dollar moved with the time zones around the clock, intervention by the German and United States authorities increased both in size and scope. On the night of October 24, when President Carter announced his new anti-inflation program calling for voluntary price and wage guidelines, the Federal Reserve, operating through United States banks with branches in Hong Kong and Singapore, intervened in marks in the Far Eastern market to counter speculative pressure on the dollar. The market was well aware of this very forceful approach by the authorities, but demand for marks continued to build, and on October 31 the rate was pushed to an all-time high of DM 1.7050. At this level, the mark had risen almost 20 percent above early-August levels, 23 percent since the beginning of the year and 34 percent since late July 1976.

In all, the Trading Desk sold $1,641.4 million equivalent of German marks during September and October, of which $976.7 million was in the last four trading days in October. Of these totals, $1,033.2 million equivalent was for the Federal Reserve and $608.2 million equivalent was done on behalf of the Treasury. Net of further repayments during those months, swap drawings on the Bundesbank had mounted to $1,256.1 million by the Federal Reserve and $650.4 million by the Treasury. Meanwhile, net purchases of dollars, together with the much larger intervention in EC snake currencies, had swollen Germany's international reserves by $8.4 billion since July to $49.5 billion by the end of October.

On November 1, President Carter announced, as a major step in the United States anti-inflation program, that it was now necessary to correct the excessive decline in the dollar. In this connection, the Federal Reserve's swap line with the Bundesbank was raised to $6 billion, along with increases in the System's swap lines with the Swiss National Bank and the Bank of Japan. The Treasury announced it would draw German marks on its reserve position in the IMF, sell SDRs to Germany for marks, and issue mark-denominated bonds in the German capital market.

The Desk followed up the announcements with a highly visible and forceful intervention operation in the New York market in German marks as well as in Swiss francs and Japanese yen. These operations were fully coordinated with those of other central banks in their own markets. In response, many market professionals moved quickly to dump their long mark positions. As the dollar then rebounded, the spot mark fell sharply to as low as DM 1.9030 on November 6, down 10½ percent from its record high just four trading days earlier. But sporadic bidding for marks by the banks' commercial customers and by central banks shifting funds out of dollars continued for some time. Consequently, as the market sought to establish a new trading range following the November 1 announcements, both the German and United States authorities continued intervening openly and forcefully in their respective markets. These operations gradually brought

the market into better balance, and by November 20 the mark declined to as low as DM 1.94. In all, the Desk intervened on twelve trading days during November, selling $2,920.8 million equivalent of marks in the market, of which $1,976.1 million equivalent was done for System account and the remaining $944.7 million equivalent was on behalf of the Exchange Stabilization Fund (ESF). Meanwhile, Germany's foreign currency reserves increased by a further $500 million which, together with the purchase of SDRs from the United States Treasury and the increase in its reserve position with the IMF resulting from the United States drawing, contributed to the $2.8 billion increase in overall reserves for the month.

During December, however, the dollar's recovery lost momentum. With the latest statistics showing the United States economy even more buoyant than expected just a month before—with prices, production, and employment all expanding rapidly—the market worried that the anticipated slowing of inflation and narrowing of our trade deficit was now delayed. Moreover, with economic activity in Germany picking up, reports circulated that the Bundesbank was increasingly concerned over the buildup of mark liquidity in domestic money markets. As a result, dealers watched closely the Bundesbank's weekly reserve figures for any indication that it had acted to offset earlier intervention by selling dollars and grew cautious about the implications of its December 14 announcement of a reduction in commercial bank rediscount quotas and a monetary growth target of 6-9 percent for 1979. In addition, the approach of the starting date for the new EMS was still a source of uncertainty as traders remained doubtful that even the new exchange rate relationships would prevail in the proposed new joint arrangement.

Against this background, the outbreak of a political crisis in Iran and a larger than expected increase in OPEC oil prices helped trigger another burst of demand for the German mark before mid-December. As the mark advanced, many corporations joined in the bidding to cover accounting as well as economic exposures before the rate rose too far. Moreover, some central banks of developing countries proceeded further with their efforts to diversify portfolios by buying marks. This demand for marks came at a time when many of the dealing banks were reluctant to undertake new transactions that would significantly alter their accounts for the year-end. Consequently, the market was even less resilient than normal, and the heavy bidding for marks propelled the rate up to as high as DM 1.8070 on January 2, almost 7½ percent above its November lows.

To moderate this advance, the United States and German authorities again intervened forcefully throughout December. Operating on fourteen trading days the Desk sold $2,796.5 million equivalent of marks including $1,575.8 million equivalent for the System and $1,220.7 million equivalent for the Treasury. These operations brought total United States intervention sales over the last two months of 1978 to $5,717.3 million equivalent of marks. As a result, total drawings outstanding on the Federal Reserve's swap line with the Bundesbank stood at $4,558.0 million equivalent by the year-end. The Treasury's outstanding drawings on its swap line with the German central bank stood at $889.4 million equivalent. But the bulk of its intervention after November 1 had been financed out of ESF balances obtained from the United States drawing on the IMF and out of the proceeds of the Treasury's first issue of mark-denominated securities. This issue, which was floated in the German capital market on December 15, was comprised of $931.1 million equivalent of three-year securities at 5.95 percent per annum and $664.1 million equivalent of four-year notes at 6.2 percent. The $1,595.2 million of proceeds was warehoused by the Treasury with the Federal Reserve.

Meanwhile, the surge in the mark ahead of the year-end had led many market participants to believe that it would advance much further in early January. But, in fact, the commercial demand for marks that had been expected in January had largely been met. The Bundesbank stepped in and intervened in size as soon as trading resumed in the new year. Also rumors circulated that new dollar defense measures would quickly be announced should the mark rise strongly against the dollar. Traders then found they had few outlets for the marks they had accumulated or had just received from the German central bank, and some moved to cover their positions. The mark thus fell back quickly, to around DM 1.85, an unexpected turnaround which had a sobering impact on market psychology. As a result, after some initial nervousness, the market took in stride the January 18 decision of the German authorities to increase minimum reserve requirements and to raise the Lombard rate ½ percentage point to 4 percent. Sentiment toward the dollar was also helped by the stress on the need for fiscal restraint in the President's budget and State of the Union message and by the Federal Reserve's adherence to a restrictive monetary policy. A scramble for oil by many countries seeking to prepare themselves for a protracted disruption of production in Iran prompted additional demand for dollars.

The mark thus came increasingly on offer toward the month end. It fell sharply on the final day of the period under review, prompting the Desk to buy $70 million equivalent of marks in the market to cover outstanding

Table 3

Federal Reserve System Repayments under Special Swap Arrangement with the Swiss National Bank

In millions of dollars equivalent

System swap commitments January 1, 1978	1978 I	1978 II	1978 III	1978 IV	1979 January	System swap commitments January 31, 1979
506.5	−95.6	−95.6	−95.6	−62.3	−18.1	139.3

Data are on a value-date basis.

Table 4

Drawings and Repayments by Foreign Central Banks and the Bank for International Settlements under Reciprocal Currency Arrangements

In millions of dollars; drawings (+) or repayments (−)

Bank drawing on Federal Reserve System	Outstanding January 1, 1978	1978 I	1978 II	1978 III	1978 IV	1979 January	Outstanding January 31, 1979
Bank for International Settlements* (against German marks)	-0-	+295.0 −295.0	-0-	+22.0 −22.0	-0-	-0-	-0-

Data are on a value-date basis.

* BIS drawings and repayments of dollars against European currencies other than Swiss francs to meet temporary cash requirements.

Table 5

United States Treasury Drawings and Repayments under Swap Arrangement with the German Federal Bank

In millions of dollars equivalent; drawings (+) or repayments (−)

Amount of commitments January 1, 1978	1978 I	1978 II	1978 III	1978 IV	1979 January	Amount of commitments January 31, 1979
-0-	+964.8	+ 35.2 −533.6	+360.8 −485.7	+802.5 −254.6	−264.8	613.0*

Because of rounding, figures do not add to totals. Data are on a value-date basis with the exception of the last two columns, which include transactions executed in late January for value after the reporting period.

* Outstanding commitments as of January 31, 1979 also include revaluation adjustments resulting from swap renewals, which amounted to $11.6 million for drawings on the German Federal Bank renewed during January.

Federal Reserve—Treasury "Warehousing Arrangement"

During the six-month period, the Federal Reserve "warehoused" foreign currencies by taking foreign exchange acquired by the Treasury that was not immediately needed to finance foreign exchange intervention in return for dollars that were needed by the Treasury in its own domestic operations. In carrying out this exchange, the Federal Reserve operated as it did in the past to buy the foreign currency in a spot purchase from the Treasury and simultaneously sell it back to the Treasury at the same exchange rate for a future maturity date—three months or even one year later. A key aspect of this type of transaction is that, since both the Federal Reserve and the Treasury agree to pay and to receive the same amount of foreign currency as specified by the use of the same exchange rate, neither party incurs any foreign exchange rate risk from this transaction.

Between the time of the initial transaction and the maturity date, the Treasury has dollars which are credited initially to its account at the Federal Reserve Bank of New York, while the Federal Reserve has foreign currency assets which it places with its central bank correspondent abroad to earn an investment return. As the dollars flow into the United States banking system, either by transfer to a Treasury tax and loan account at a commercial bank or as the Treasury finances domestic expenditures, member bank reserves increase. However, under the operating procedures the domestic Trading Desk uses to carry out objectives set by the Federal Open Market Committee, it would typically respond by absorbing an equivalent amount of reserves in its day-to-day open market operations to neutralize any unwanted expansionary effect of the use of the Treasury's balance at the Federal Reserve Bank of New York.

A warehousing transaction is reversed when the Federal Reserve repays the foreign currency it has acquired from the Treasury and the Treasury repays dollars. This could occur before the original maturity date, if the Treasury decides that warehoused foreign exchange balances will be used to finance its intervention (in which case the Treasury carries any exchange risk that may be involved) or upon maturity. Whether the Treasury acquires dollars to make the repayment to the Federal Reserve by purchasing them in the foreign exchange market, by borrowing in the domestic market, or from receipts from other sources, member bank reserves will decline. In this case, the domestic Trading Desk would offset any unwanted decline through open market operations. Thus, in practice, there is no net effect on member bank reserves as a result of operations under the warehousing arrangements.

Federal Reserve and Treasury swap debt and to maintain orderly trading conditions. The mark thus ended the period at DM 1.8720, some 9 percent below its end-October peak but still up 8½ percent over the six-month period under review.

Compared with the preceding two months, central bank support for the dollar was modest during January. The Federal Reserve Trading Desk intervened to sell only $68.9 million equivalent of marks for the System and $132.3 million equivalent for the Treasury over the course of the month. Meanwhile, it took advantage of opportunities to acquire marks, largely through nonmarket transactions with correspondents, which were used to repay swap debt. Thus, by end-January, the System's outstanding swap indebtedness to the Bundesbank was down $389.8 million net over the month to stand at $4,168.2 million and that of the Treasury had been reduced by $276.4 million to $613.0 million. These operations, repayments of swap debt by the Bundesbank's partners in the EC snake, and that central bank's own operations in the market were reflected in the $1.8 billion net decrease in Germany's official reserves over the month to $52.1 billion by January 31, 1979. But for the six-month period as a whole, Germany's reserves rose a net $11 billion.

Japanese yen

By late 1977-early 1978, the Japanese authorities faced three mutually reinforcing problems: economic growth had fallen short of the government's target, the current account surplus remained excessive at an annual rate of nearly $16 billion, and the yen was appreciating rapidly, rising 30 percent in two years to ¥227.00. Since each of these problems had significant international implications, foreign authorities were pressing Japan to hasten the adjustment process. In late 1977, the government had provided more fiscal stimulus to promote domestic growth and boost imports. In addition, Japan encouraged imports by relaxing trade restrictions on certain kinds of goods. But the impact of these measures was blunted by the persistent rise in the Japanese yen which exerted a drag on the domestic economy. Moreover, the current account surplus widened even further as the yen rate appreciated. This unexpected result reflected in good measure the terms of trade effects of the yen's rise. It also reflected

the fact that Japan's exports remained highly competitive. With the yen's appreciation serving as a further brake to domestic inflation, Japanese firms in several key industries were able to take advantage of declining costs of imported raw materials and other products, such as oil. Moreover, because of the more rapid inflation under way in many foreign markets, Japanese exporters did not have to absorb the full effect of the yen's rise on their prices. By mid-1978 the underlying adjustment to the previous appreciation of the yen was finally beginning to show through in the trade figures, as export volumes started to decline and import volumes started to rise. But, in view of the experience of the previous two years, the market was still skeptical that Japan's efforts to reduce its surplus significantly—or the United States efforts to reduce our current account deficit—were likely to succeed in the near future.

Against this background the yen had come into demand, buoyed by heavy inflows of funds again in late July-early August. The yen rate was bid up by 20 percent to ¥188.6 at the end of July and advanced a further 3¾ percent to a peak of ¥181.8 in mid-August. By that time, selling pressure on the dollar again spread to the markets for major European currencies. On August 16, President Carter expressed his deep concern over the dollar's decline, initiating a series of actions by the Federal Reserve and the United States Treasury to deal with the problem. These included intensive discussions between the United States and the Japanese authorities on means of hastening the adjustment process. In late August, the Japanese government introduced a supplementary budget which included additional stimulus, mainly through public works projects and credit availability for housing, which was expected to increase GNP by some ¥2.7 trillion. The Japanese authorities also pressed ahead on a program of emergency imports to reduce the immediate current account surplus. The market responded positively to these various official actions, and the yen settled back in late August to ¥188, where it held steady in balanced trading through mid-October.

By that time, Japan's current account surplus was more clearly on a narrowing trend. But the dollar had again come under heavy selling pressure against Western European currencies and that pressure again spilled over into the yen, which rose to a new record high of ¥176.45 by October 31. Under these circumstances, the Japanese authorities became concerned that the new appreciation of the yen might thwart even the modest progress toward internal and external balance that had just begun. The United States authorities were also concerned that the decline of the dollar was becoming excessive and threatened to undermine the efforts to curb inflation in the United States.

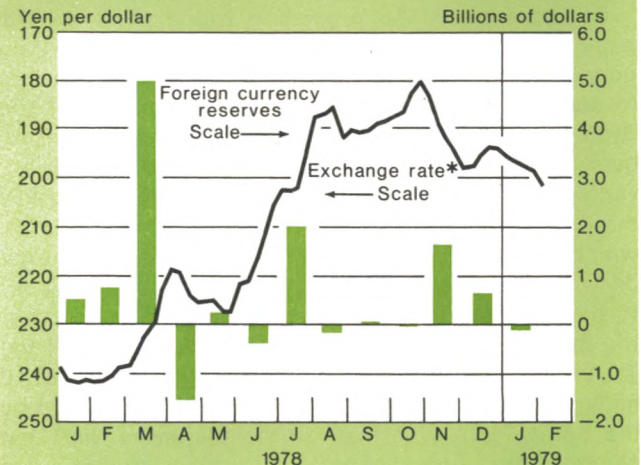
Consequently, in further discussions in late October, United States and Japanese authorities agreed that an important element of any broader package of initiatives to strengthen the United States dollar would be a commitment by the United States to intervene in Japanese yen, backed up by substantial resources, along with intervention in German marks and Swiss francs. For sometime, the Federal Reserve Bank of New York had been intervening in the New York market for account of the Japanese authorities. It was agreed that this would continue and that the United States authorities would join in this intervention using their own resources. As the $30 billion of foreign currency resources was assembled, therefore, the Federal Reserve swap arrangement with the Bank of Japan was raised from $2 billion to $5 billion, and the United States Treasury agreed to draw $1,000 million equivalent of yen from the IMF and to sell $641.7 million equivalent of SDRs to Japan.

The announcement on November 1 of these measures had a profound effect on yen trading in New York, and the yen rate fell back sharply with only modest intervention for the day. Heavy demand for yen developed the next day in Tokyo. But the Bank of Japan countered vigorously, and the Federal Reserve Bank of New York maintained a forceful presence in

Chart 4

Japan

Movements in exchange rate and official foreign currency reserves



*See footnote on Chart 3.

the New York market on that and subsequent days. In response, the pressure quickly abated and there was little need for further intervention. In all, sales of yen by the United States authorities in early November amounted to $196.7 million. Of the Federal Reserve sales, $151.7 million equivalent of yen was financed by drawings under the System's swap arrangement with the Bank of Japan and $2.8 million equivalent of Japanese yen was drawn from balances. United States Treasury sales of $42.3 million of yen were financed entirely out of proceeds of IMF drawings.

Once the sense of two-way risk was reestablished, market sentiment began to shift against the yen. Traders took account of the narrowing of Japan's current account surplus. Moreover, the wide interest differentials favoring the United States dollar over the yen generated capital outflows, as foreign governments and international institutions stepped up new borrowings in the Tokyo market and nonresidents liquidated earlier investments. Consequently, the yen rate dropped back to as low as ¥202.45 in early December, some 13 percent below the late-October peak. By that time the Federal Reserve began to acquire modest amounts of yen to repay the swap drawings of early November.

The yen then became caught up in the renewed upsurge of the European currencies against the dollar in mid-December. But, while regaining 5 percent to a high of ¥192.45, the yen lagged behind the rise in the other currencies. Consequently, intervention to check the rise was relatively modest, with the United States authorities selling a total of $10.6 million of yen. Of this amount the Federal Reserve sold $6.4 million equivalent financed by a $4.8 million equivalent drawing on the swap line with the Bank of Japan and out of balances. The remaining $4.2 million equivalent was sold by the Treasury out of balances. By midmonth, market sentiment turned hesitant toward the yen once again, as major events of concern to the market at the time—the political and economic disturbances in Iran and the jump in OPEC oil prices—were viewed as potentially serious to Japan as well as to the United States. Consequently, the yen rate began to ease through the month end, even as other currencies continued to advance.

In January, the yen softened further as Japanese trading companies bid strongly for dollars. The Japanese authorities took the opportunity to dismantle some of the barriers to capital inflows, cutting in half the marginal reserve requirement on free yen deposits and relaxing the restrictions on nonresident purchases of Japanese securities. On several days the yen declined sharply enough in the New York market that the Federal Reserve stepped in as a buyer of yen to maintain orderly trading conditions. On this basis it purchased $98.8 million equivalent for the account of the United States authorities over the course of the month. By the month end, the yen rate had fallen back to ¥201.70, for a net decline of 6½ percent for the six-month period under review. By that time, the Federal Reserve had acquired sufficient amounts of yen from transactions with correspondents and from the market to repay in full the swap drawings on the Bank of Japan. The Treasury's purchases of yen were added to ESF balances.

Swiss franc

By midsummer 1978 the Swiss franc was rising sharply, reaching new highs against the dollar and other major European currencies. Switzerland's inflation rate was running at 1.4 percent per annum, the lowest of all industrial countries. Switzerland's current account for the year, forecast to show a SF 9 billion surplus, was expected to be second only to Japan's. Also, many in the market had come to question whether the authorities would continue to resist upward pressure on the franc, since intervention in the exchanges earlier in the year had already contributed to an explosion in the monetary aggregates well above the central bank's 5 percent target. Indeed, since midyear the Swiss National Bank had been able to absorb some of the excess liquidity through domestic monetary operations and by selling dollars to nonresident borrowers under the official capital export conversion requirement. As a result, Switzerland's reserves had declined somewhat in July to $12.8 billion. But in the exchange market the Swiss franc was swept up in a burst of bidding to SF 1.7099 against the dollar and SF 0.8458 against the German mark by August 2. At these levels, the Swiss franc had gained since the beginning of the year 16 percent and 12 percent, respectively.

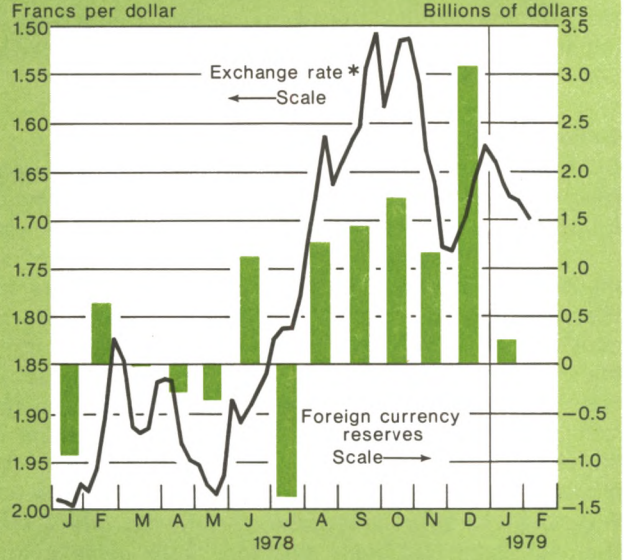
In view of the franc's rapid advance, the National Bank moved early in August to make more liquidity available to the market by open market operations, the placement of government deposits with commercial banks, and one-year swaps against dollars. These operations triggered a sharp decline in domestic and Euro-Swiss franc interest rates and succeeded for a while in blunting the franc's rise. But, in the generally unsettled markets at the time, the franc was soon rising again against the dollar, along with other major currencies. It rose as high as SF 1.5451 by mid-August before falling back by some 8½ percent in reaction to President Carter's expression of deep concern over the dollar's decline and the follow-up measures by the Federal Reserve and the Treasury.

But by September the Swiss franc was again on the rise. As before, the appreciation was for the most part caused by commercial and official shifts of funds out of the dollar. But the franc was also buoyed by flows

Chart 5

Switzerland

Movements in exchange rate and official foreign currency reserves



*See footnote on Chart 3.

of funds out of other European currencies, including the mark, in response to market concern that an expanded joint float arrangement to include all EC countries would leave the franc isolated and hence more vulnerable to even stronger upward pressures. In this environment, the rate was propelled by late September to a new record high of SF 1.4510 against the dollar and SF 0.7547 against the mark. To moderate this advance, the Swiss National Bank had gradually increased its dollar purchases in Zurich and New York, while the Federal Reserve joined in these operations on twelve trading days in August and September, selling $147.7 million equivalent of francs. These sales were financed by drawings under the swap arrangement with the Swiss National Bank, which raised the total from $22.9 million equivalent to $170.5 million equivalent.

Meanwhile, the franc's unrelenting advance in the exchanges raised the risk of severe repercussions on the Swiss economy. Producers of goods for both foreign and domestic markets were concerned about a loss of competitiveness, falling profit margins, and declining sales. But the trade balance remained strong because of the favorable price effects of the franc's appreciation on the terms of the trade. Concerned that an excessive appreciation of the franc might drive the economy into recession, the Swiss authorities took the initiative in the exchange markets in late September-early October. The Swiss National Bank intervened massively to reverse the rise in the rate both against the dollar and the German mark. Although the bulk was done in Zurich, the Federal Reserve followed up in New York, for the account of the Swiss National Bank and for Federal Reserve account. System sales of francs amounted to $100.0 million equivalent.

Also, to signal a desire for the franc to decline against the mark, the Swiss central bank bought modest amounts of snake currencies other than the mark to give the mark more room to appreciate within the joint float. Finally, to increase the depth of the Swiss franc market, the authorities raised the limit on nonresident participation in foreign borrowers' Swiss franc bond issues from 35 percent to 50 percent and allowed 50 percent of private nonresident borrowings of francs to be converted in the market.

In response to these actions, the franc initially fell back sharply, dropping to a low of SF 1.63 against the dollar and to SF 0.8350 against the mark. Later on, however, as trading conditions deteriorated and the dollar plummeted across the board, the franc rose again, moving back to its record high on October 31. But, in the wake of the earlier intervention by the Swiss National Bank and the highly publicized concern of the Swiss authorities over the franc's relationship to the mark, the Swiss franc lagged behind the rise in the mark. As a result, although the Federal Reserve supplemented its intervention in marks with sales of Swiss francs, in late October it sold only a modest $46.5 million equivalent of francs financed by drawings on the swap line with the Swiss National Bank. Meanwhile, the heavy intervention by the Swiss National Bank earlier in October accounted largely for the $4.7 billion increase in Switzerland's external reserves during August-October.

The franc's advance was abruptly reversed in response to the November 1 announcement of steps to correct the excessive decline of the dollar. These included an increase in the Federal Reserve's swap line with the Swiss National Bank from $1.4 billion to $4 billion, indications by the Treasury that it would sell SDRs for Swiss francs, and plans for the Treasury to place franc-denominated securities in the Swiss capital market. On November 1, the franc fell sharply, dropping off some 8¾ percent below its highs of the previous day. Thereafter, the franc, along with the mark and the yen, came into heavy demand in a test of the United States resolve to follow through on the November 1 program. But the earlier forceful intervention by the Swiss authorities had already made traders more cautious, and the Swiss National Bank did not have to

intervene as heavily as before. For its part, the Federal Reserve sold $351.6 million equivalent of francs in the first half of November, financed entirely by new drawings on the swap line with the Swiss central bank. This intervention helped settle the market, and by November 20 the franc had declined another 9 percent to SF 1.7640. Thereafter, the rate fluctuated fairly narrowly through early December, requiring only occasional light support from the Swiss National Bank and sales of just $29.0 million equivalent of francs by the Federal Reserve on November 21 and 29 which were financed by further swap drawings.

During December the franc came under renewed upward pressure amid uncertainties ahead of the scheduled introduction of the EMS at the month end, growing political instability in Iran, and the announcement by OPEC of a larger than expected oil price increase. As the franc rose, many multinational corporations sought to cover both economic and accounting exposures. For a while the franc outstripped the mark in its advance against the dollar, rising 9 percent by the year-end. In response, the Swiss National Bank intervened heavily and the Federal Reserve sold $354.3 million equivalent of francs through the month end, of which $33.8 million was for value in early January. These operations contributed to another $4.1 billion equivalent rise in Switzerland's external reserves since October 31 to $21.6 billion at the year-end.

But this intense bidding tapered off quickly in early January once it became clear that most companies had satisfied their near-term need for francs before the year-end. Also, timely and forceful intervention by the National Bank left the market to expect that the central banks would step in quickly to counter a renewed rush into francs. Even so, the market was aware that the heavy intervention by the Swiss National Bank had generated a 16.2 percent increase in the Swiss money supply in 1978, far above the targeted rate of increase. To ease concerns that it might suddenly tighten liquidity, the Swiss National Bank announced that, since priority was still being given to the stabilization of exchange rate relationships, it would not set a money supply target for 1979. Moreover, when the United States Treasury announced plans to sell Swiss franc-denominated bonds, the Swiss National Bank followed up with an assurance that the authorities would offset the liquidity drain caused by this issue. At mid-January, the United States Treasury placed a total of $1,203 million equivalent of franc-denominated securities in the Swiss capital market. Of this amount $744.5 million equivalent was borrowed over 2½ years at 2.35 percent per annum. The remaining $458.5 million equivalent four-year placement was at 2.65 percent. The proceeds of these securities were then warehoused by the Treasury with the Federal Reserve.

In this better atmosphere for the dollar, traders began to perceive a downside risk in the Swiss franc. In view of the 10 percentage point differential between United States and Swiss interest rates, it became im-

Table 6

United States Treasury Securities, Foreign Currency Denominated

In millions of dollars equivalent; issues (+) or redemptions (—)

Issues	Amount of commitments January 1, 1978	1978 I	1978 II	1978 III	1978 IV	1979 January	Amount of commitments January 31, 1979
Government series:							
Swiss National Bank	1,168.9	—133.8	—133.8	—133.8	— 167.1	— 69.3	531.2
Public series:							
Switzerland	-0-	-0-	-0-	-0-	-0-	+1,203.0	1,203.0
Germany	-0-	-0-	-0-	-0-	+1,595.2	-0-	1,595.2
Total	1,168.9	—133.8	—133.8	—133.8	— 167.1 +1,595.2	— 69.3 +1,203.0	3,329.3

Because of rounding, figures may not add to totals. Data are on a value-date basis.

mensely costly to remain short of dollars once the franc began to ease. The franc thus fell back sharply from its year-end highs, and this decline accelerated following the stress on anti-inflation policies in the United States. With the exchange market now in better balance, the Swiss government announced on January 23 the removal of the February 1978 ban on nonresident purchases of foreign securities. Caught by surprise, the market's initial reaction was to bid heavily for francs. But the Swiss National Bank reacted immediately with forceful intervention, and this flurry of demand quickly subsided. Thus, the franc continued to ease enabling the Swiss National Bank to sell some of its earlier dollar purchases. The franc closed at SF 1.700 on January 31, off 14 percent from the late-October peak.

For its part, the Federal Reserve did not intervene in the franc market during January. In fact, at one point in which the franc was easing particularly sharply the System was able to buy $20.0 million equivalent of francs in the market. This purchase, together with much larger amounts purchased directly from the Swiss National Bank, enabled the System to repay $605.1 million of current System swap debt, leaving $446.7 million equivalent outstanding as of January 31. For the period as a whole, the franc was virtually unchanged on balance, while Switzerland's external reserves rose a net of $8.9 billion over the six-month period to $21.7 billion.

During the period, the Federal Reserve and the United States Treasury continued with the program agreed to in October 1976 for an orderly repayment of pre-August 1971 franc-denominated liabilities. The Federal Reserve repaid $139.6 million equivalent of special swap indebtedness, while the Treasury redeemed $319.2 million equivalent of Swiss franc-denominated securities by the end of January. Most of the francs for these repayments were acquired directly from the Swiss National Bank against dollars. However, francs were also bought from the National Bank against the sale of $118.2 million equivalent of German marks which were, in turn, either covered in the market or drawn from existing balances. By end-January, the Federal Reserve's special swap debt to the Swiss National Bank stood at $139.3 million equivalent, while the Treasury's Swiss franc-denominated obligations had been reduced to $531.2 million equivalent.

EC snake

In the mid-1970's, divergencies in the performances of the major European economies had forced a number of important currencies to drop out of the EC snake, leaving the remaining currencies highly exposed to the volatility of the exchange markets. As a result, over the past three years the currencies remaining inside the joint float had advanced more rapidly against the dollar than those which had left the band, even though the differences in economic performance among all EC countries had begun to narrow. Against this background, the EC heads of state and government reached agreement at Bremen last July to create a zone of monetary stability via a new joint floating arrangement to include all EC members.

News of the agreement prompted some bidding for the currencies outside the snake as the market took the view that these currencies would henceforth trade more in line with those now in the EC band. But within that arrangement enough divergence between price and trade performances remained to raise expectations in the market that a realignment might take place among those currencies prior to the introduction of the EMS. Once the mark began outpacing the advances of other major currencies against the dollar in late July-early August, participants doubted that other participating currencies could keep pace with the German mark. As a result, the Dutch guilder, Belgian franc, Norwegian krone, and Danish krone all fell to the bottom of the joint float.

Against this background, all four currencies were subjected to outflows into the mark. In some cases, the pressures were aggravated by local considerations. The Norwegian krone was beset by commercial and professional selling pressure as the market reacted to Norway's loss of competitiveness *vis-à-vis* its major trading partner, Sweden, whose currency had been withdrawn from the EC band a year before. Evidence of deterioration in Belgium's trade position during the summer generated continued sizable selling of Belgian francs. A large-scale buildup in commercial leads and lags also weighed on the Netherlands guilder.

As the movement of funds into the mark gathered momentum, the five EC central banks stepped up their intervention to keep the joint float within its 2¼ percent limits, buying large amounts of guilders, Belgian francs, and Danish and Norwegian kroner against sales of German marks provided by the Bundesbank. By mid-October the total amount of marks created by the Bundesbank to meet these pressures had mounted up to $5.1 billion equivalent since end-June and was contributing to a strong expansion in Germany's monetary aggregates. By contrast, this intervention drained large amounts of liquidity out of the other four snake currencies. Interest rates rose steeply in each of their money markets, while the respective monetary authorities reinforced the squeezes still further by raising official lending rates.

Finally, in mid-October, the EC monetary authorities

agreed to a realignment which upvalued the mark by 2 percent against the Dutch guilder and Belgian franc and by 4 percent against the Danish krone and the Norwegian krone. Following this announcement, the heavy selling within the snake came to an end and all the joint float currencies advanced on their own to record highs against the dollar at the month end. But reversals of the commercial leads and lags or speculative positions in favor of the mark were modest. Consequently, part of the indebtedness built up while defending the snake was settled at the month end by transfers of dollar assets to Germany.

The November 1 announcement of the United States measures to support the dollar triggered a sharp fall in the mark, well in excess of the declines in the other snake currencies. The mark thus dropped to the bottom of the joint float, and strains on the band eased generally. Under these conditions, market participants began to reverse the highly expensive long mark positions they had been maintaining against the weaker snake currencies.

This unwinding proceeded slowly, however. Many uncertainties remained over the outlook for the snake in view of the scheduled introduction of the new European Monetary System on January 1. Some participants still wondered if another realignment might not occur prior to the starting date now only a few weeks away. Many traders thus continued to roll over short positions against the mark. To clear the air, the monetary authorities of the EC snake countries let it be known that the bilateral central rates presently in force between the snake currencies would be maintained in the new system. This announcement contributed further to a reduction of tensions within the snake. But Norway decided it could not risk having its currency pulled up further against the Swedish krona. Therefore, following Sweden's decision not to enter the new system, Norway announced on December 12 it could not join the arrangement and that the krone would be withdrawn from the snake effective immediately.

The decision at the year-end to delay the implementation of the new monetary arrangement had no discernible impact on trading relationships within the snake. Instead, as the mark eased back against the dollar, the process of unwinding positions taken up prior to the mid-October realignment accelerated. Benefiting from high domestic interest rates, the Dutch guilder and the Danish krone became buoyed by these reflows and traded firmly in the snake. The commercial Belgian franc was also bolstered by reflows but, amid concerns over the persistent sluggishness of the Belgian economy and the size of the government deficit, the return of funds took place more slowly and the franc stayed near the bottom of the joint float.

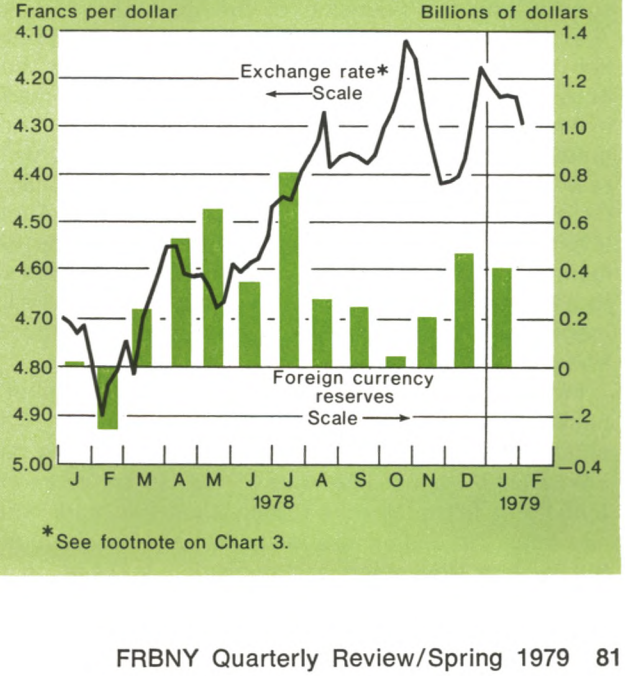
French franc

During the spring of 1978, the French government had reaffirmed its commitment to give priority to the fight against inflation and the maintenance of a sound balance of payments, while boosting employment largely through selective measures. By midyear, the economy was beginning to respond to the modest stimulus that had been provided earlier, spurred by an upturn in domestic consumption. Also, the current account had settled into strong surplus. The French franc had strengthened in the exchanges. It rose against the dollar to trade around FF 4.36 by early August. It also gained against the German mark, and the Bank of France had taken in reserves. Progress on the inflation front, however, had not yet met expectations. Looking ahead, the market was uncertain about the prospect for an early further decline in inflationary pressures since, as part of its longer term strategy to reduce the growth of public financing needs and to channel more personal savings into business investment, the government had embarked on a program to increase charges for public services and gradually to relax long-standing controls on industrial prices. Also, by midsummer, the market had become sensitive to the implications of any deterioration in economic performance relative to that of Germany in view of the possibility that France might join in an expanded EC currency arrangement

Chart 6

France

Movements in exchange rate and official foreign currency reserves



*See footnote on Chart 3.

which was scheduled for implementation on January 1, 1979.

Against this background, news during August of a quick upsurge in consumer prices, an acceleration of wage increases, and a temporary slippage in France's trade account back into deficit had a dampening effect on market psychology for the French franc. Market participants began to question whether the franc could hold its own against the German mark, and commercial leads and lags started to move against the franc. Also, since short-term interest rates had been gently declining as the franc had strengthened during previous months, some investors took advantage of a narrowing of favorable interest differentials to shift funds into other currencies. As a result, the franc lost some of its earlier buoyancy. Although at times it was bid up as the dollar came on offer in August and September, it posted little advance on balance over the two months trading around FF 4.37. Meanwhile it eased back about 4 percent against the mark by end-September. Under these circumstances, the inflows to France's reserves tapered off and the Bank of France provided some support for the rate through sales mostly of German marks but also of dollars.

In the increasingly unsettled markets that developed during October, the French franc joined to a greater degree in the rise in foreign currencies against the dollar. By this time, also, the authorities had reinforced the relatively restrictive monetary stance by reducing to 11 percent the target for monetary growth in 1979 and by tightening somewhat the ceilings on bank credit expansion. They also doubled the reserve requirements against sight deposits to 4 percent to absorb liquidity generated by the balance-of-payments surplus and the financing of the government deficit. Thereafter, an abrupt tightening in the Eurofranc market prompted importers that previously had been borrowing to bid instead for francs in the spot market in order to meet their month-end payment needs. These factors combined to push up the French franc, which rose to a record high of FF 3.97 against the dollar on October 31, some 9¾ percent above early-August levels. But the franc continued to lag behind the German mark. As a result, the Bank of France at times still provided occasional support for the franc by selling marks while otherwise taking in dollars to limit the franc's rise.

Following the announcement of the November 1 package in support of the dollar, the French franc plummeted along with other currencies, dropping back below early-August levels to FF 4.3490 by midmonth. Initially, it fell back less rapidly than the mark which had been the center of speculation against the dollar. But by late November, as the market focused on the upcoming negotiation over the EMS at an EC Council meeting December 5-6, the franc became subject again to bouts of selling pressure on expectations that it would decline against the mark before entering the new joint floating arrangement. As a result, the franc eased back against the mark to a low on December 4, while moving back up to FF 4.45 against the dollar.

Before long, however, the earlier concerns about the prospects for the French franc began to lift. Doubts about France's trade performance faded inasmuch as a surplus of around FF 2.5 billion was emerging for 1978. The market's previous fears that price decontrol would trigger an accelerated spiral of price increases no longer seemed justified in view of the more moderate rise in consumer prices reported for November. The December announcement of an agreement that all currencies coming into the EMS would enter at prevailing cross rates dispelled some of the uneasiness about implementation of the new arrangement. Also, inclusion of the Italian lira and the Irish pound in the new arrangement alleviated concerns in the market that the franc would be the only additional member. Against this background, funds began flowing from the mark back into the franc and the previously adverse commercial leads and lags started to be reversed. Moreover, since the dollar had started declining again, market participants scrambled to cover exposures and year-end needs in francs as well as in other currencies. The franc thus recovered to as high as FF 4.1200 at the Paris opening on January 2.

That day the decision not to proceed with the EMS until EC members had concluded new agricultural financing arrangements was announced. Also, forceful intervention in other markets helped to blunt any further rise in European currencies against the dollar. Thereafter, the franc began to ease back, and this tendency continued as the dollar strengthened generally during the month. Thus, the franc, closing at FF 4.2905 on January 31, was up only 1¾ percent on balance for the six-month period. Against the mark, however, the franc remained relatively firm during January with the result that it recovered to just about the levels of six months before. In view of the franc's buoyancy generally in December and against the mark during January, the Bank of France continued to buy both dollars and German marks in the market. These operations contributed to a further rise in France's foreign exchange reserves, which increased $1.6 billion over the six months to $8.7 billion as of January 31.

Italian lira

Under Italy's comprehensive stabilization program, further progress was made during the first half of 1978 in strengthening the balance of payments and

reining in the rate of domestic inflation. By midyear, the inflation rate had been brought down to 12 percent, and the current account had registered a comfortable surplus of $2.1 billion over the first six months. Coming into the summer, imports remained sluggish while exports continued to be buoyed by the existence of excess industrial capacity and by the competitive effects of the lira's decline of earlier years. With the seasonal bulge in tourist receipts adding strength to Italy's current account, the stage was set for a further widening of Italy's surplus position. Also, interest rates in Italy had been kept high, easing back less than the slowdown in the inflation rate might have suggested, in order to facilitate the financing of the large public sector deficit. Consequently, Italian residents continued to borrow abroad, and these capital inflows, on top of Italy's current account surplus, bolstered the lira in the exchanges. As a result, the lira had come into heavy demand for several months and the authorities were able to buy substantial amounts of dollars to rebuild Italy's reserve position, while moderating the rise in the spot rate. By the end of July the lira, trading above LIT 841, was at its highest level against the dollar since October 1976. Moreover, Italy's foreign exchange reserves had increased to $9.3 billion, even after the authorities had made sizable repayments of official debt to the IMF, the EC, and the Bundesbank.

During August and much of September, the lira continued to benefit from Italy's strong balance-of-payments position. The announcement on August 1 of a seven-month extension in the ceiling on the growth of bank lending reassured the market that current policies were to be maintained. Against this background and with the Bank of Italy continuing to take large amounts of dollars into reserves, the authorities took the opportunity to follow through on initiatives earlier in the year to ease exchange controls regarding commercial payment terms. Meanwhile, the minority government announced its three-year economic stabilization program which, after extensive negotiation over the summer months, had received the tacit approval of the Communist Party. This program, which was to reduce significantly the proportion of gross domestic product taken up by the public sector deficit, included a shift of government spending from current expenditures to the promotion of investment, a freeze on real labor costs together with a gradual phasing-out of automatic wage rises under the *scala-mobile* program, and improved incentives for labor mobility and a rebuilding of the financial condition of Italian enterprises.

At the same time, the authorities acted to absorb some of the liquidity being created by Italy's balance-of-payments surplus. This objective was accomplished in part by extending the maturities of new government debt after the Bank of Italy confirmed an easing of money market rates by lowering by 1 percentage point to 10½ percent its base rate for rediscounting and advances. In addition, the government continued to use some of its additions to official reserves to repay outstanding debt to the IMF and the EC, both at and prior to maturity. Moreover, to keep Italy's inflation rate more in line with its trading partners over the longer run, the Italian authorities indicated they might be receptive to some form of association for the lira with the EMS, then under consideration within the EC.

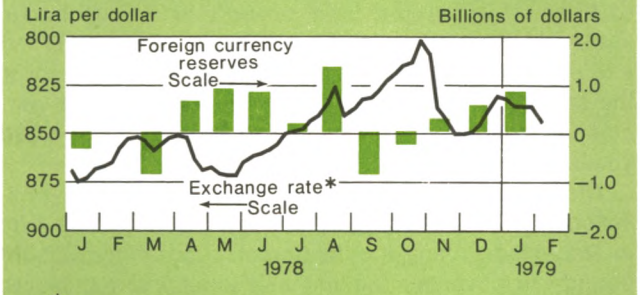
In October, however, the increasing unsettlement that was developing in the exchange markets began to affect the Italian lira as well. Although it, too, was pulled up against the dollar by the rise in the strong Continental currencies, the market began to question whether the lira would not be allowed to weaken *vis-à-vis* other EC currencies before being linked to the EMS. As a result, commercial leads and lags shifted modestly against the lira. In addition, Italian enterprises reacted to seemingly favorable exchange rates, together with the increases in Eurodollar interest rates, by paying or prepaying their Eurocurrency debts and switching back into lira financing. Consequently, the lira lagged behind the mark during October while the Bank of Italy sold dollars to provide some support for the rate. Even so, by October 31 the lira had advanced 7 percent above early-August levels to LIT 787 against the dollar.

Then, following the November 1 announcement of United States measures to strengthen the dollar, the lira declined along with other European currencies to trade around LIT 851.50. Meanwhile, new figures showed that Italy's current account, remaining strong even after the passing of favorable sea-

Chart 7

Italy

Movements in exchange rate and official foreign currency reserves



*See footnote on Chart 3.

sonal factors, was amassing a surplus of some $6 billion for the year. Also, the economy had begun to expand more rapidly and, with financing needs growing and interest rates still high, the inflows of capital resumed. With regard to the EMS, the government had negotiated flexible terms for entry, whereby the lira would be allowed to fluctuate as much as 6 percent around its central rate against each of the other currencies. Moreover, the market was reassured once prospects for a currency realignment prior to the introduction of EMS faded and numerous officials confirmed that the exchange rate relationships of that arrangement would be based on prevailing market rates. Thus, the lira came into heavy demand as the turn of the year approached, and the news on January 2 of a delay in the implementation of EMS had little apparent impact on the rate.

By January, the continuing strength of Italy's external position was again showing through in the exchange market. Although the lira tended to decline as the dollar recovered across the board, it eased back less rapidly than the German mark and other strong European currencies. In mid-January the authorities provided some relief to small firms with limited access to the Eurodollar market, by raising slightly the ceiling on domestic credit expansion applicable through March. Nevertheless, funds continued to flow into the lira, thereby keeping the rate buoyant even in the face of increasingly vocal opposition from the trade unions to the government's anti-inflation program and the withdrawal of Communist Party support to the Andreotti government at the month end. In fact, the lira closed the six-month period trading steadily at LIT 843.50 to show little net change on balance. Meanwhile, additional purchases of dollars by the Bank of Italy, again during January, helped provide a further $2 billion increase in foreign exchange reserves over the period to $11.3 billion by January 31.

Sterling

In the United Kingdom, impressive progress had been made in 1977 in bringing down domestic inflation, swinging the balance of payments into surplus, and bolstering the international reserve position. Also, by late 1977, the British authorities had succeeded in gaining leeway, under the agreements with the IMF, for providing some modest stimulus to the economy. But by late spring 1978 the markets were becoming concerned that the sudden upsurge in demand in the United Kingdom was beginning to generate additional inflationary pressures and would weaken the payments position. In June the authorities moved again to reinforce their broad anti-inflation effort through monetary restraints, including a hike in interest rates, and through a selective tightening of fiscal policy. Later, the Government announced a 5 percent guideline for wage increases over the coming year beginning in August, down from the previous guideline of 10 percent. These measures helped to reassure the market. Thus the pound had advanced to $1.95 against the dollar by early August and had firmed against other currencies as well. On the effective trade-weighted basis used by the United Kingdom authorities, the pound had reached 63 percent of its 1971 Smithsonian parity.

By early August, however, the market was again becoming concerned over the outlook for inflation in the United Kingdom. The Trades Union Congress voted to reject a continuation of an incomes policy, and highly visible wage negotiations kept the exchange market wary of a possible confrontation between the government and the unions over the 5 percent pay policy. The pound fell back somewhat and traded unevenly in the exchanges between early August and mid-October. But each time selling pressure mounted the Bank of England responded quickly to show its resolve in defending sterling, both through intervention in the exchange market and through maintaining a taut money market.

In October, as market participants increasingly turned their attention to the accelerating slide of the dollar, sterling started to advance on hot-money inflows. Spot sterling soon moved above $2.00, and a burst of buying in late October pushed the rate to as high as $2.1050 by the month end. During this upswing the Bank of England occasionally bought dollars to keep the trade-weighted effective rate from rising much above 63 percent.

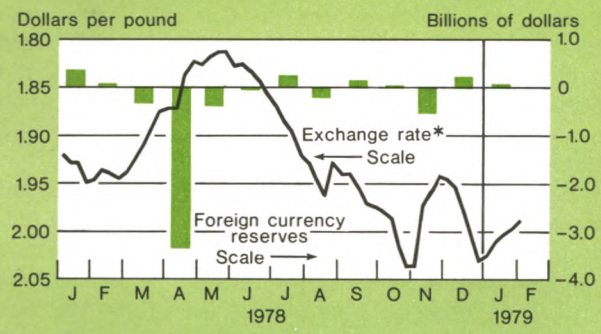
In the wake of the United States measures of November 1, sterling dropped back 6 percent to fluctuate around $1.98 against the dollar, without any appreciable change on an effective basis. Meanwhile, union opposition to the continuance of an incomes policy was hardening. Interest rates abroad were rising sharply, particularly in the United States. And, as sterling came on offer, in response to these uncertainties the Bank of England again provided support in the exchange market to steady the effective rate. Short-term sterling interest rates were allowed to rise and, on November 9, the authorities hiked the minimum lending rate 2½ percentage points to 12½ percent, its highest level in two years.

Thereafter, sterling was bouyed by inflows of interest-sensitive funds. Also, with the spot rate holding firm in December, many multinational corporations bought pounds to cover accounting and economic exposures and to satisfy year-end payment needs. The political uncertainties in Iran and the mid-December increase

Chart 8

United Kingdom

Movements in exchange rate and official foreign currency reserves

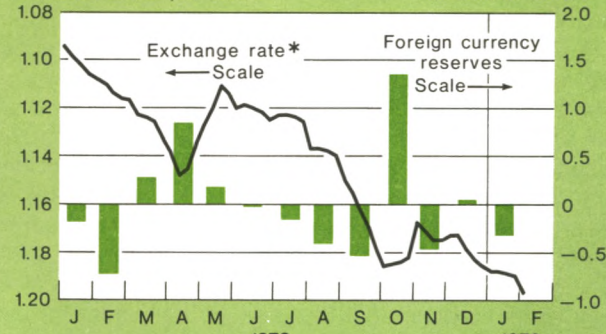


*See footnote on Chart 3.

Chart 9

Canada

Movements in exchange rate and official foreign currency reserves



*See footnote on Chart 3.

in OPEC oil prices had little impact on sterling since the United Kingdom, as an oil producer itself, was seen as less vulnerable to a cutoff of oil supplies from Iran and as perhaps even benefiting from the larger than expected rise in oil prices. As a result, when the dollar came on renewed offer during December, sterling was bid up to a high of $2.0480 by early January. Meanwhile, the government had announced it would not join the EMS but would undertake, as it had in the past, to keep sterling relatively stable *vis-à-vis* its principal trading partners.

In view of the United Kingdom's comfortable reserve position and the high level of interest rates, sterling held firm in the exchanges in early 1979, despite a spate of highly disruptive strikes. Sterling eased off against the dollar as dollar rates generally improved, but it held steady in effective terms. By the close of the period the spot rate was at $1.9872, up 3 percent on balance for the six-month period. Meanwhile, although the authorities had intervened on both sides of the market, these operations had largely netted out. Consequently, official reserves which were $17.6 billion at end-January were unchanged on balance over the six-month period.

Canadian dollar

By late summer, the Canadian dollar had been declining almost without interruption for nearly two years. Even so, the current account remained in substantial deficit and long-term foreign borrowings by private interests and provincial authorities were not sufficient to close the overall payments gap. Moreover, the rate of domestic inflation remained high, aggravated partly by the depreciating currency, and unemployment continued to hold at uncomfortably high levels.

Earlier in 1978, the authorities had moved cautiously to stimulate employment through selective fiscal policy measures while maintaining a firm monetary policy in light of concerns over inflation and the exchange rate. The authorities had also arranged for some $7.7 billion of official long-term international borrowings both to close the payments gap and to bolster reserves which had been depleted through intervention to cushion the decline of the exchange rate. Nevertheless, the deep-rooted pessimism toward the Canadian dollar persisted in the exchange market, as the prospect of a national election to be held sometime within the year left the market uncertain about the outlook for the Canadian economy. Amidst these uncertainties, sudden shifts of sentiment left the market subject to increased volatility. In addition, selling pressures were aggravated at times when the United States dollar was declining, because market participants would sell Canadian dollars against United States dollars either to finance acquisitions of currencies rising in the exchanges or to offset for internal accounting short-dollar positions against these currencies.

In August-September, after trading around the Can.$1.14 level, the Canadian dollar again came under heavy selling pressure in the exchanges following some disappointing trade and price figures. Also, the further rise in interest rates in the United States had prompted some outflows of interest-sensitive funds from Canada. In response, the Bank of Canada raised its discount

rate to 9½ percent and announced a reduction of its monetary growth targets for the coming year. The authorities also arranged for a further $750 million bond issue in the United States market. The selling pressure continued, however, with the Canadian dollar slipping a further 3 percent against the United States dollar. Meanwhile, a sustained intervention effort contributed to a decline in Canada's external reserves by a net $924 million in August-September to $3.7 billion.

In early October the spot rate dipped to as low as Can.$1.1958 before bottoming out. In addition, the Canadian authorities hiked the discount rate further to 10¼ percent and operated in the bond market to lift long-term Canadian interest rates. Interest-sensitive funds thus began to move back into Canada. In addition, the trade figures for September were back in significant surplus and the rise in consumer prices slowed, giving a boost to market sentiment toward the Canadian dollar. Thus, the Canadian dollar moved back up from its early-October lows against the United States dollar, and the Bank of Canada intervened to moderate the rise. These official dollar purchases, combined with the receipt of proceeds from the New York bond issue and the takedown of additional credits on the facility with the chartered banks, were reflected in a $1.4 billion rise in external reserves to $5.1 billion at the month end.

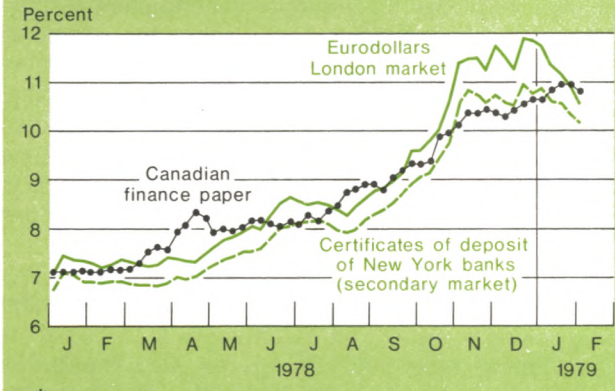
On November 1, when the United States announced its major support package and the United States dollar rose sharply against the currencies of Western Europe and Japan, the Canadian dollar eased only slightly *vis-à-vis* the United States dollar. But then, as interest rates in the United States rose by more than rates in Canada, interest incentives favoring Canada were nearly eliminated, even after the Bank of Canada raised its discount rate to 10¾ percent on November 6. Moreover, the latest figures on Canada's price and trade performance released during the month were less encouraging. Bearish sentiment resurfaced for the Canadian dollar and, as selling pressure built up once again, the rate drifted downward in November and December.

In early January, the Canadian authorities announced plans for a new official borrowing abroad, a $500 million equivalent issue denominated in yen, and the Bank of Canada raised its discount rate by ½ percentage point to 11¼ percent. These initiatives helped stabilize the exchange rate, but the latest round of trade figures announced in late January proved to be disappointing to the market. The rate thus dipped to Can.$1.1989 at the month end, down 5½ percent for the six-month period, before firming somewhat in February. Meanwhile, Canada's reserves declined not only by $700 million from end-October levels but also by $200 million on balance over the six-month period to $4.4 billion as of January 31.

Chart 10

Interest Rates in the United States, Canada, and the Eurodollar Market

Three-month maturities*



*Weekly averages of daily rates.

Profits and losses

The stepped-up intervention by the United States authorities beginning on November 1 involved a variety of financing techniques. In addition to use of the swap arrangements, the Treasury drew marks and yen on its reserve position with the IMF and sold SDRs to both Germany and Japan against their respective currencies. Also, the Treasury issued mark- and Swiss franc-denominated notes in the German and Swiss capital markets, thereby raising foreign currency assets against medium-term liabilities in those currencies. The acquisitions or borrowings of currencies and the sale and repayment of currencies took place at varying exchange rates. Thus the profit and loss implications became much more complex.

At the same time, at the end of 1978 the Federal Reserve, in presenting its annual statement of condition, shifted to accounting practices under which all foreign currency assets and liabilities are periodically revalued in dollars at current spot market rates. The ESF had adopted this accounting practice in 1977. For both institutions this meant that, in addition to profits and losses actually realized on foreign exchange transactions, unrealized profits and losses are also reported. New arrangements were also reached with foreign central banks to revalue, beginning in January, maturing swap drawings that were being renewed at current market rates. This practice generated realized profits

Table 7

Net Profits (+) and Losses (−) on United States Treasury and Federal Reserve Current Foreign Exchange Operations

In millions of dollars

Period	United States Treasury		
	Federal Reserve	Exchange Stabilization Fund	General Account
1961-77	+51.2	− 5.1	
First quarter 1978	− 0.2	− 0.2	
Second quarter 1978	−17.2	− 2.9	
Third quarter 1978	−11.0	− 0.1	
Fourth quarter 1978	− 5.0	−68.0	+4.8
January 1979	+ 6.7	+ 1.2	+8.9
Unrealized profits and losses on outstanding assets and liabilities as of January 31, 1979	+ 2.5	+41.3	−7.8

Data are on a value-date basis.

Table 8

Net Profits (+) and Losses (−) on United States Treasury and Federal Reserve Liquidations of Foreign Currency Debts Outstanding as of August 15, 1971

In millions of dollars

Period	Federal Reserve	Exchange Stabilization Fund
1971-77	−583.9	−516.2
First quarter 1978	− 58.7	− 81.1
Second quarter 1978	− 60.6	− 84.8
Third quarter 1978	− 84.2	−117.8
Fourth quarter 1978	− 60.4	−156.7
January 1979	− 16.3	− 62.6
Unrealized losses on outstanding liabilities as of January 31, 1979	−121.4	−462.9

Data are on a value-date basis.

or losses depending on whether the dollar rose or fell over the period of the swap drawing.

Table 7 presents the profit and loss data for the Federal Reserve and the United States Treasury, separating out the results between the Treasury General Account and the ESF. Losses on pre-August 1971 Swiss franc debt, undertaken to protect the United States gold stock, are presented separately in Table 8.

Table 7 covers all Treasury and Federal Reserve purchases and sales in the foreign exchange market. Federal Reserve operations mainly reflect current swap operations, while ESF data also reflect foreign currency acquisitions from IMF drawings and SDR sales. The Treasury General Account operations reflect the issuance of foreign currency-denominated securities and sales of some of those proceeds in the market. Foreign exchange operations are closely coordinated between the Treasury and the Federal Reserve. The incidence of realized profit and loss, however, falls on the different participants in the operations depending on the nature of the transaction and the exchange rate at the particular time. The ESF, the Treasury General Account, and the Federal Reserve had both profits and losses on individual transactions but, as the table indicates, losses exceeded profits on balance in 1978.

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