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CORPORATE DEMAND FOR LIQUID FINANCIAL ASSETS, 1947-62

by

Gloria Shatto

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CHAPTER I

INTRODUCTION

This paper focuses on corporate holdings of liquid financial assets in the postwar period (1947-62). Changes in the pattern of corporate holdings of those assets and factors which affect their holdings are investigated.

Liquid financial assets held by the corporate business sector are defined in Flow of Funds Accounts, 1945-62\(^1\) as demand deposits and currency, time deposits, and U.S. Government securities. To understand corporate behavior with respect to holdings of liquid financial assets, it is necessary to give some consideration to the vast array of alternate financial assets in which corporations invest. The growth of these financial assets is reflected in increased corporate holdings of them.

The theoretical analysis of the corporate demand for liquid financial assets is stated in terms of the firm's demand for money vis-à-vis money-substitutes,\(^2\) which include financial assets other than solely liquid financial assets.


\(^2\)Alternative terms such as cash and cash-substitutes are also used in the discussion.
One reason for using this approach is that it allows us to relate our theory to existing theories of the demand for money and to use certain relevant portions of these theories. In addition, money holdings in the postwar period represent the largest single item in the corporate sector's total holdings of liquid financial assets. By analyzing the theoretical behavior of the corporate demand for money, certain aspects of the behavior of corporate demand for other liquid financial assets can be inferred.

Money is defined as coin and currency, outside the banking system, and demand deposits held by the public—i.e., held by sectors other than the Federal Government, the Federal Reserve, and commercial banks. In trying to discern corporate behavior we look at cash and liquid financial asset holdings from several vantage points. First, information is given about financial assets held by the entire corporate nonfinancial business sector in Flow of Funds Accounts, 1945-62. Second, annual data of cash and Government security holdings for all manufacturing corporations are found in Statistics of Income;¹ and third, quarterly data for all manufacturing corporations are found

in Quarterly Financial Reports. The information about manufacturing corporations in the last two sources is subdivided by industries. To supplement this aggregate information, the writer interviewed one Houston-based firm in each of four industries and obtained additional insight into cash handling and managerial practices associated with the firm's liquid financial assets.

The main hypothesis is formulated in terms of the corporate demand for money but it is closely related to the corporate demand for other financial assets. In the postwar period, the corporate sector's demand for money has declined relative to sales, total assets, and total financial assets. The hypothesis is that this relative decline in the corporate demand for money is caused by the growth of money-substitutes, higher costs of money resulting from more effective monetary policy, expectations of increasing economic stability, the growth of trade credit, and developments within firms which result in more efficient utilization of cash. A sub-hypothesis is that the fluctuations in the declining cash/sales and cash/total assets ratios are mild because firms use cash-substitutes to make adjustments to cash needs.

In addition to the long-run trend in the postwar

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period, short-run changes in the pattern of financial asset holdings are investigated and the implications which these changes have for monetary and debt management policy are examined. We are also interested in the impact of monetary policy, working through interest rates, on the maturity structure of Government security holdings and the composition of liquid financial assets in corporate portfolios.

An examination of corporate holdings of liquid financial assets from all the directions mentioned reveals that there is much information which is unavailable or obscured in aggregate data. For instance, a complete breakdown of cash-substitutes in corporate portfolios is not available. Also, annual cash data, and even quarterly data, may be arranged by the firm to make a favorable impression on stockholders. A balance sheet arranged to show a certain level of cash can offer no insight into the firm's day-to-day cash holding practices. This information is not available because it is a very competitive and highly guarded area. In company interviews, the writer was shown daily cash forecast figures, but these could not be recorded.

Fortunately, the trend of declining cash ratios for the corporate sector is fairly obvious and is substantiated by all sources of information. Applying available economic information, we hope to explain the underlying postwar changes in corporate holdings of cash and cash-substitutes.

A study of this type is of contemporary interest because of its implications for theory and policy, and the
postwar period is a specially interesting period for an investigation of the behavior of liquid financial assets. The income velocity of money rises in the postwar period in contrast to its secular decline from 1869-1960.\textsuperscript{1} This postwar rise in velocity cannot be explained by Friedman in terms of his permanent income theory. Instead, he asserts that the velocity rise is caused by a reaction to the wartime fall in velocity\textsuperscript{2} and by expectations of decreased economic instability.\textsuperscript{3}

This study does not deal with the income velocity of money for the entire economy as does Friedman's study. However, the information obtained in this study about corporate money holding behavior throws light on the postwar changes in the corporate sector's income velocity of money, which, in turn, may contribute to our knowledge of the behavior of the aggregate income velocity of money.

A separate study of the corporate sector is warranted because the activity of the corporate sector represents a significant portion of the entire economy's activity; and until recent years, relatively little was written which was specifically concerned with the corporate demand for financial assets. The corporate behavior in holding liquid


\footnotesize{\textsuperscript{2}Ibid., pp. 639-41.}

\footnotesize{\textsuperscript{3}Ibid., p. 675.}
financial assets differs from that of other sectors. Specifically, in the postwar period, the corporate income velocity of money rose at a greater rate than the income velocity of money of other sectors. These points are elaborated in the following sections.

**Reasons for Corporate Study**

It is estimated that corporations—which are the dominant form of business organization in the U.S.—generate about three-fourths of national income and employment in the private non-agricultural economy.\(^1\)

In all the major fields where large scale investment is required for effective operation—utilities, communication, manufacturing, mining, and transportation—corporations account for close to 90 percent or more of the industry's business. Even in wholesale and retail trade they do over half of the business. Only in agriculture, construction and services has the corporation not taken over.\(^2\)

The corporate nonfinancial sector is of interest to us in that it accounts for a significant portion of the economy's holdings of liquid financial assets.\(^3\) Changes in this sector's holdings of cash, Government securities, and other financial assets are important to monetary and debt

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\(^2\)Ibid.

\(^3\)In 1962, the corporate nonfinancial business sector held $31.8 billion of demand deposits and currency out of total domestic sector holdings (excluding U.S. Government) of $145.4 billion. (This is about 22%) The corporate sector held $19.4 billion in Government securities out of $110.1 billion held by all private domestic nonfinancial sectors (or about 18%). *Flow of Funds*, pp. 3, 6.
management authorities.\textsuperscript{1}

**Differences: Corporate Sector--Consumer Sector**

Often the consumer and corporate sectors are lumped together to present a picture of the nonfinancial sector; however, motives and behavior of the two sectors differ. For example, money turnover rates of the two sectors differ: corporate velocity exceeds consumer velocity. The consumer sector has greater money holdings than the corporate, although corporate cash expenditures exceed consumers.

"Benchmark estimates of velocity rates reveal much larger differences between the corporate and consumer sectors than between large and small corporations or among industries."\textsuperscript{2}

The types of assets held by the consumer and corporate sectors differ in that large corporations are more able to utilize money-substitutes such as treasury bills and commercial paper than are individuals or small companies. The costs of dealing in these securities and the large

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\textsuperscript{1}Since Government securities represent one of the best money-substitutes for corporations, it is interesting to note the shift in the relative importance of corporate holders during World War II. In December, 1939, private non-bank investors held $22.7 billion of Federal securities, of which nonfinancial corporations held $2.2 billion--or about 10\%. By June, 1945, private non-bank investors held $128.2 billion, but the nonfinancial corporate sector held $23.3 billion--or about 18\%. The magnitude of Government security holdings by nonfinancial corporations has been below $14 billion (10\%) only once (1958) in the postwar period after 1948, and has been higher than $24 billion (17\%) in early 1956 and in 1959-60. U.S. Treasury Department, Treasury Bulletin (Washington, D.C.: U.S. Government Printing Office, relevant issues).

denominations in which they are sold preclude participation in the market for most individuals.

Money turnover rates are higher for corporations than for individuals partly because of the continuity of business receipts. This continuity of transactions together with the larger magnitude of corporate activities allows corporations to synchronize expenditures with receipts more easily and thus reduce transactions balances.

The greater continuity of receipts also allows corporations to maintain relatively smaller precautionary balances than consumers. It is estimated that this is true in terms of absolute size as well as in terms of the ratio of money to income or expenditure.¹

There may be economies of scale in cash holding for transactions which would suggest that corporations hold smaller cash balances per unit of expenditure than individuals do. Baumol shows that the individual—or the individual firm—under certain restrictive assumptions, will demand cash in proportion to the square root of the value of his transactions. This means the demand for cash rises less than in proportion to the volume of transactions.² Since the cash expenditures of corporations exceed those of individuals, the implication would be that corporations hold less cash per dollar of expenditure than do individuals.

¹Ibid., p. 1562.

Cash balances per unit of transaction tend to be more stable for business firms than for households. McCall argues that business firms tend to decide what constitutes an appropriate cash balance on the basis of some ratio of cash to transactions, while individuals determine cash balances on other criteria. He finds that the level of business expenditures (bank debits) and the level of business cash balances (bank deposits) were positively related over time, while personal debits and deposits were unrelated.¹

The postwar years from 1947-62 provide an interesting period for the investigation of corporate holdings of liquid financial assets because of the shifts which have occurred in the holdings of these assets during that period. Concentration on the corporate sector's behavior may improve our over-all understanding of the aggregate demand for liquid financial assets; and with increased knowledge of corporate behavior in holding cash and other financial assets, policy may be directed specifically to affect the corporate sector.

CHAPTER II
THEORY

Discussing the theory of corporate demand for liquid financial assets in terms of the demand for money vis-à-vis money-substitutes allows us to relate the corporate theory to existing theories of the demand for money and to utilize relevant parts of these theories. In order to describe the corporate sector's behavior, the demand for financial assets of the individual firm is analyzed, and this same pattern is attributed to the entire sector.

I. EXISTING THEORIES

Money has always held a central position in economic literature and a multitude of theories about the demand for money exists.\(^1\) Implicit in the quantity theories were demand for money theories. For example, Fisher made the distinction between the equation of exchange, as an identity which always held in equilibrium, and his more sophisticated theory in which all variables in the equation changed during transition periods. The latter theory, in which Fisher attempted to explain the relationships between the variables,

\(^1\)An interesting survey of the theoretical literature about demand for money is given by J. C. Gilbert, "The Demand for Money: The Development of an Economic Concept," Journal of Political Economy, 61 (April, 1953), 144-59.
represented a theory of the demand for money.¹ The cash balance version of the quantity theory, associated with the names of Walras, Marshall, and Wicksell, centered attention on the demand for money-to-hold and differed from the transactions approach in its emphasis on the level of income.

Keynes' criticism of the classical quantity theory was aimed at the most naive version of that theory.² The approach used by Keynes gave a different emphasis to monetary theory in the analysis of motives for holding cash and in the prominence given to the monetary determinants of the interest rate.³

The most influential critic of the Keynesian view of the theory of the demand for money has been Milton Friedman, whose criticisms have ranged from the question of the


²It is recognized that certain classical economists understood the relation between money and prices in a more sophisticated form than the rigid quantity theory. Keynes also failed to take account of the work of Wicksell which stated the relationship between money and prices via interest rates. Knut Wicksell, Interest and Prices (New York: Augustus M. Kelley, 1962) and Lectures on Political Economy, Vol. II (London: Routledge & Kegan Paul, Ltd., 1962).

validity of separating motives for cash holding\(^1\) to the overemphasis of the role of interest rates.\(^2\)

In Friedman's theory, the quantity of money demanded was a function of "permanent income," not of "measured income." His thesis that money is a luxury good was supported by his empirical findings that a 1% increase in real income per capita was associated with a 1.8% increase in real cash balances per capita.\(^3\)

Friedman found that the secular behavior of velocity was relatively stable and gave this as evidence that cash balances did not appear to be highly sensitive to "the" interest rate. His findings that the cyclical movement in velocity could be largely explained by using "measured income" rather than "permanent income" in the numerator of the velocity formula, also led him to conclude that cash


balances were not very sensitive to interest rates.¹

Like the Keynesian approach, modern quantity theory analyses stress the relationship between money and income. Contemporary quantity theorists believe the demand for money is a stable function and they emphasize the role of the money supply as the crucial variable affecting policy.²

Johnson argues that both Keynesian theory and the quantity theory have evolved from their position in the 1930's and today monetary theorists using either theoretical framework approach the demand for money in essentially the same way.³

¹Meltzer, using a demand function which he considered conceptually similar to Friedman's, reached the conclusion that interest rates played a significant role in the long-run demand for money. He also found, contrary to Friedman's thesis that money is a luxury good, that the income elasticity of the demand for real money balances was approximately unity. Allan H. Meltzer, "The Demand for Money: The Evidence from the Time Series," Journal of Political Economy, 71 (June, 1963), 219-46.

²Yet modern quantity theorists define their analysis as a theory of the demand for money. For example:
"The quantity theory is . . . a theory of the demand for money. It is not a theory of output, or of money income, or of the price level. Any statement about these variables requires combining the quantity theory with some specifications about the conditions of supply of money and perhaps about other variables as well." Milton Friedman, "The Quantity Theory of Money--A Restatement," Studies in the Quantity Theory of Money, ed. Milton Friedman (Chicago: The University of Chicago Press, 1956), p. 4.

³"The modern quantity theorist is committed to neither full employment nor the constancy of velocity, and his theory is a theory of the relation between the stock of money and the level of money income, that is, a theory of velocity and not of prices and employment." Johnson, p. 344n.
Much of the significant literature on the demand for money failed to emphasize the importance of all liquid financial assets or to describe the functions performed by these money-substitutes. Keynes discussed the motives for holding money as opposed to holding bonds, and gave little emphasis to the near-money assets, but was clearly aware of the full spectrum of financial assets.\(^1\) Although Friedman's empirical work included time deposits with money, his theory of the demand for money did not include any treatment of the demand for other financial assets. He specifically rejected the growth of money-substitutes as a significant explanation for the postwar increase in the income velocity of money.\(^2\)

The Gurley-Shaw thesis is a major theoretical contribution emphasizing the importance for monetary theory and

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\(^1\)"Without disturbance to this definition, we can draw the line between 'money' and 'debts' at whatever point is most convenient for handling a particular problem. For example, we can treat as money any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as debt what cannot be recovered for a longer period than this; or we can substitute for 'three months' one month or three days or three hours or any other period; or we can exclude from money whatever is not legal tender on the spot. It is often convenient in practice to include in money time-deposits with banks and, occasionally, even such instruments as (e.g.) treasury bills. As a rule, I shall, as in my Treatise on Money, assume that money is co-extensive with bank deposits." John Maynard Keynes, *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace and Company, 1938), p. 167n. Hereafter this will be written General Theory.

\(^2\)Friedman and Schwartz, p. 661.
policy of the role of non-monetary financial assets.\textsuperscript{1} Their analysis is primarily concerned with the financial assets created by non-banking financial intermediaries, and gives inadequate attention to the financial assets created by the Government.\textsuperscript{2} Another criticism is that Gurley-Shaw usually combine the consumer and corporate sector's demands for money or their demands for non-monetary financial assets. We believe that a separation of the two sectors would be instructive because the business sector's motives for holding non-monetary financial assets differ from consumer's motives; and the pattern of financial asset holdings, and their use in each sector, would have different implications for monetary policy.

Until recent years, relatively little was written about the corporate demand for liquid financial assets.\textsuperscript{3} The theoretical analyses of Baumol\textsuperscript{4} and Tobin\textsuperscript{5} were

\textsuperscript{1}This thesis was developed in a series of journal articles and was culminated in: John G. Gurley and Edward S. Shaw, Money in a Theory of Finance (Washington, D.C.: The Brookings Institution, 1960).

\textsuperscript{2}The public debt is not entirely neglected. \textit{Ibid.}, pp. 275-80.


concerned with the individual's or the firm's transactions demand for money. Friedman asserted that his theory of the demand for money was applicable to the business firm's cash balances, even though it was initially used to describe consumer cash balances.\(^1\) Recent studies have concentrated on holdings of cash and other financial assets of the non-financial business sector or some sub-sector of corporations.\(^2\)

II. THE FIRM'S DEMAND FOR LIQUID FINANCIAL ASSETS

A. THE DEMAND FOR MONEY VIS-À-VIS MONEY-SUBSTITUTES

Assumptions

The firm\(^3\) is assumed to be a profit maximizing unit, and this is exhibited in its handling of liquid financial assets. For theoretical discussion, the financial assets available for the firm to hold are either money or money-substitutes, with money defined as coin and currency, outside the banking system, and adjusted demand deposits. The

---

\(^{1}\)Friedman, "The Demand for Money: . . . ," pp. 334-35.


\(^{3}\)The terms "firm" and "corporation" are used synonymously, although all data refer to the corporate sector.
interest return on money is assumed to be zero; this ignores both an implicit positive return on use, plus a possible negative return due to bank service charges. Money-substitutes include the whole spectrum of financial assets held because they offer an interest return. These assets are substitutes for money in that they can easily be converted to cash. Initially, money-substitutes are assumed to be homogeneous assets with a single yield. The interest yield on money-substitutes as well as interest rates on borrowed money are determined by the monetary authorities and thus "given variables" in so far as the firm is concerned. The firm's demand for money is independent of the supply. It is assumed that the existence of real assets owned by the firm exerts no influence on the firm's preferences for money as opposed to money-substitutes.

We are not concerned with the determination of the appropriate total financial asset holdings of the firm, but assume these holdings are adequate. The central concern of this thesis is the firm's determination of appropriate holdings of money versus money-substitutes.

**Motives for Holding Financial Assets**

What are the motives which a firm has for holding money? Which motives can be satisfied by holding money-substitutes? It is obvious that the firm needs money to carry on its normal business operations, and this includes money held in banks as compensating balances for credit lines when borrowed money is used for carrying on
transactions. Cash is needed for daily expenditures and is held to avoid risks of default on payments. This transactions motive\(^1\) may be satisfied by money-substitutes in the case of liquidity needs for known expenditures at some future date. Funds for items such as taxes, dividends, planned investment and inventory expenditures, etc., can be held in money-substitutes and converted into cash on the date of payment. For example, financial assets built up for planned investment in plant and equipment may be held as money-substitutes for a considerable time period between the decision to invest and the actual investment.

The firm needs liquid financial assets for contingencies. Money holdings for contingencies may also be discussed in terms of motives described in liquidity preference analysis. Here the motives are modified to apply to corporations in the postwar era.

The precautionary motive is exemplified by the firm's holding cash balances to relieve fear of uncertainty and dangers of insolvency. If the firm relies on banks to provide sudden unexpected cash needs, the precautionary motive may be satisfied by cash balances held in banks to meet requirements imposed by the banks in fulfillment of lines of credit arrangements. However, we argue that the precautionary motive can be largely satisfied by holdings of

\(^1\)Keynes divided the transactions motive into the income and business motives. (Keynes, pp. 195-96.) Keynes' classification of motives is found in the General Theory, chapter 15.
money-substitutes in the postwar period.

In the speculative motive, Keynes was discussing the motives for holding money as opposed to bonds, and interest rates played a significant role. We shall shift emphasis away from interest rates and use the speculative motive to describe the firm's holding liquid financial assets in order to take advantage of any investment opportunity. This motive may explain money holdings for investment in financial assets (in which case, the interest rate becomes more important), or it may explain money-substitute holdings for investment in real assets or alternative financial assets.

Demand for Money Under Various Circumstances

Assume the firm's real demand for money to satisfy each of the three motives is a function of real income and the interest rate. For simplification, the only interest rate (i) is that on the homogeneous money-substitutes. We deal with the firm's real demand for the stock of money, while holding real income and the price level constant. This assumes that the firm is free from money illusion and holds money only for its real purchasing power.

A hypothetical schedule of the firm's real demand for money (M/P) is drawn below for the income level Y₁. This

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1 Keynes described the speculative motive as "the object of securing profit from knowing better than the market what the future will bring forth." General Theory, p. 170. This motive involved holding money to speculate about the future prices of claims other than money. The amount of money held to satisfy this motive depended mainly upon the current rate of interest and expectations about the future rates of interest.
schedule is drawn on the assumptions that tastes remain constant with respect to the stock of money-substitutes, and the firm's demand for money is independent of the supply.

\[ \begin{align*}
Y_i &= \frac{M}{P} \\
\end{align*} \]

- Figure 1.

The demand for money schedule slopes downward and becomes perfectly elastic at the interest rate which equals the total of the costs of converting from money-substitutes to money plus the subjective costs of risk.

Because all three motives enter into the firm's decisions about the portion of financial assets held in money form, we consider the situations under which the various motives are operative.

**Complete certainty, no brokers' fees.**—Under conditions of complete certainty, in which perfect foresight prevails, the business firm has no precautionary or speculative demand for money. If we assume a positive rate of interest on money-substitutes, with no brokers' fees for movements between money and money-substitutes, and if we ignore the time and trouble of converting assets, then the amount of money demanded by the rational firm could equal
zero. This is obviously true in the case where receipts and payments can be perfectly synchronized. If complete synchronization is not possible, the existence and cost of credit facilities, together with the return available from money-substitutes must be considered. The amount of money desired for holding should equal zero if, over the period, the return from money-substitutes exceeds costs of credit. If credit costs exceed the yield from money-substitutes, the firm should prefer to hold enough money to cover transactions needs; the amount demanded would depend on the pattern of receipts and expenditures.

**Complete certainty, positive brokers' fees.**—If we assume brokers' fees for movements between cash and cash-substitutes, the amount of cash demanded for transactions is normally positive. The amount of cash-substitutes demanded depends on the interest rate, the amount of the excess cash to be invested, and the known length of investment time. Financial investments occur only when this interest return exceeds the cost of investing (i.e., the broker's fee). The yield from investments is greater, the higher the interest rate, the larger the sum to be invested at one time, and the longer the investment time. The last two items imply the spreading of fixed investment costs.

**Uncertainty, no brokers' fees.**—The more interesting cases, and those more relevant to our economy, are cases where uncertainty exists as to future events, interest rates, and investment opportunities. Here transactions,
precautionary, and speculative motives may exist for holding cash; institutional arrangements, such as compensating balance requirements, can potentially exert pressures for additional cash sums to be held in our own economy.

Consider the case where there is uncertainty, and assume no brokers' fees exist for switching between assets. A sufficient basis for a positive amount of cash to be demanded for transactions is either that there is a time delay or some inconvenience in switching between assets, or that credit costs exceed the interest yield on financial assets, or that there is uncertainty as to interest rates and future events. A certain sum is needed for transactions purposes, to bridge the gap between receipts and disbursements and to provide for day to day changes in cash requirements of firms; however, all anticipated requirements for transactions purposes need not be maintained in cash form. For example, transactions needs for a definite date in the future—such as tax accruals, and accumulation of funds for the payment of dividends and interest and for debt repayment or amortization—can be held in interest-earning form with a maturity which exactly meets the date the sums are needed. Transactions sums to provide for anticipated peak seasonal and cyclical demands for funds can also be held in money-substitutes. The higher the yield on cash-substitutes, the shorter the period necessary to make it worthwhile for transactions balances to be invested.

Precautionary balances may largely be held in
cash-substitutes. If the assumption that money-substitutes are homogeneous is relaxed and the stock of money-substitutes is thought of as some aggregate average of assets whose yields and risks differ, the firm may hold money-substitutes which have the shortest maturity and minimal risk. If the unforeseen contingency does not arise, the corporation has made a net profit by having held precautionary balances in cash-substitutes.

Speculative balances held to anticipate future interest rate movements in financial investment opportunities could be held in short-term money-substitutes until the interest rate reaches the level at which the firm wishes to invest in longer-term financial assets. If speculative balances are held in anticipation of future changes in the goods market or real investment opportunities, the balances may just as easily be held in money-substitutes as in cash. In this case, for speculative balances to be held in money-substitutes rather than money, the money-substitutes must be highly liquid, divisible, and relatively stable in value. These reserves give the corporation greater flexibility in the timing aspect of its capital expenditure program, and the form of the reserves need not be cash if liquidity can be attained in interest-earning form. This also includes the temporary investment of proceeds derived from long-term borrowing or new issues of equity financing held prior to their disbursement in connection with investment in plant and equipment.
Uncertainty, brokers' fees. — When brokers' fees are added, the additional costs must be offset by higher interest yields or larger stocks of money invested—assuming costs are cheaper per dollar invested as the size of the sum invested goes up. Thus it can be seen, without going through the analysis of each motive, that a larger part of the firm's financial assets will be held in money.

B. DIVISION OF FINANCIAL ASSETS BETWEEN MONEY AND MONEY-SUBSTITUTES

Under the assumptions of uncertainty and the existence of brokers' fees, it is clear that the transactions, precautionary, and speculative motives can be satisfied partially by holdings of money-substitutes as well as money. Since money-substitutes yield an interest return, inherent in our hypotheses is the suggestion that the profit maximizing firm attempts to hold some optimum cash balance. The yield on money-substitutes may be considered as some aggregate average, and therefore, the yields and risks on available money-substitutes vary.

Determining the Optimum Cash

The optimum cash for any firm is a unique decision for that firm at any point of time. Accurate decision making can only be achieved with complete knowledge of the firm's financial situation and economic goals. Only financial managers can estimate the degree of risk the firm would assume for cash insolvency or the subjective utility gained by the firm in holding cash above the minimum required.
In determining the optimum cash to hold, the firm's financial officer through careful analysis of all the firm's operations, investment plans, and other economic statements can estimate the timing and amounts of cash flows.\textsuperscript{1} The financial officer can also evaluate all of the alternative approaches to meet cash needs most economically. Using the cash flow analysis, the officer can then determine the minimum cash with which the firm could operate, assuming the firm is taking advantage of all the measures at its disposal for efficient utilization of cash. This minimum must be sufficiently large to compensate banks for their services, when banks do not have specific charges.

The financial officer must first consider the costs to the corporation if its cash balances fall below this minimum or if the minimum is incorrectly calculated. The most extreme risk would be that illiquidity could force the firm into bankruptcy if the firm had inadequate cash-substitutes. Here the cash shortage must be so severe that legal contracts are defaulted, creditors force the firm into bankruptcy, and all operations of the firm are discontinued. This possibility is ruled out of consideration, and it is assumed that the firm holds adequate financial assets. The financial officer is able to determine the minimum financial assets that the firm must hold on the basis of his knowledge of the degree of liquidity inherent

in other items in the firm's portfolio of current assets. Here the maximum risk assumed in maintaining the minimum balance of financial assets is that the firm may have to sell real assets at a loss or may be forced to forego a lucrative real investment opportunity because of inadequate liquidity. When deciding the liquid financial asset needs, the financial officer considers both the firm's ability to generate money internally and its ability to secure funds from capital markets and banks.

As a very minimum, the firm could hold only enough cash to satisfy transactions demands. Even those transactions which are foreseeable at a future date can be carried in short-term money-substitutes if the interest yield exceeds the costs of investment by a sufficient amount. The precautionary and speculative motives can be satisfied by an array of cash-substitutes. To satisfy the speculative motive, very short-term cash-substitutes could be held in order to speculate on prices of longer term financial assets (as long as interest return exceeds brokers' costs) and on prices of non-financial claims.

Just as the profit maximizing firm attempts to maintain optimum levels of assets such as inventory, it should also attempt to hold optimum levels of cash. If a firm satisfies all three motives for liquidity solely by cash holdings, we might define this as the maximum cash holding and expect that the firm invests cash above this maximum in cash-substitutes. The firm experiences opportunity costs
from failure to invest excess cash in safe short-term financial assets which yield a return. Beside this net interest lost, there are opportunity costs of earnings foregone from failure to invest in real assets. Excess cash holding may also have costs in terms of growth and in terms of loss of potential investors; for example, excess cash holdings may cause the corporation to appear less attractive in the eyes of potential investors. Subjective judgment is required to weigh the reduction in risks, which large cash balances give, against the costs of the insurance they provide.

The optimum cash holding is then some point between this minimum and maximum, and the optimum cash for any firm will include the minimum plus some sum as a protection against risks of uncertainty. Here it is difficult to evaluate the weights which the financial officer will give to the various factors which affect these risks. Perhaps some computation can be made of the probability of the occurrence of various events which the firm is trying to avoid.\(^1\) However, we are unable to measure these subjective evaluations of risk which the financial officer must consider.

\(^1\)Considerations must be given to the fact that an extremely one-sided cash flow will cause off-setting effects. For example, if cash inflow drops due to a drop in sales, receivables will also be reduced and cash out-flow will drop due to disinvestment in inventories. Thus a large drop in sales will result in a much smaller drop in cash.
Factors Which Affect the Division of Assets Between Money and Money-Substitutes

Although the following factors affect the division between holdings of cash and cash-substitutes, the discussion below is usually presented in terms of the effects on cash.

Size of firm.--In our theory, "the firm" is assumed to hold both cash and cash-substitutes, but in reality all firms may not hold cash-substitutes. Smaller firms typically operate at a minimum cash balance by necessity, and their cash holding above minimum transactions needs may not be large enough to warrant investment in money-substitutes. Most of the non-monetary financial assets are held by medium- and large-size firms. It is to be expected that the larger the firm (measured by size of total assets), the greater the proportion of money-substitutes in the total financial asset portfolio.

Bank relations.--The optimum cash holding depends on the extent of reliance on banks for short-term cash and on the degree of variability of alternative sources of liquid funds available to the corporation. For example, the optimum cash holding is smaller for the firm which has large reserves of borrowing power. Even with ready access to bank funds, the firm must hold certain balances to compensate banks or to cover the costs of maintaining credit lines.

The major part of the precautionary and speculative demands for money may be satisfied by either holdings of
money-substitutes, by borrowing arrangements with banks, or by some combination of the two. If credit lines are established to avoid the risk of contingencies otherwise satisfied by precautionary and speculative balances held in money-substitutes, the additional costs of the credit line may be offset by investments in money-substitutes which have a higher degree of risk and thus a higher interest yield.

Interest rates. -- The real demand for cash balances is inversely related to the interest rate as shown in Figure 1. The higher the interest rate, relative to the costs of making short-term financial investments, the smaller the optimum cash balance may be and the larger the number of transactions between cash and cash-substitutes. The size of the excess cash and the length of time it is to be invested in relation to interest rates are of course important. As noted by Hicks, "With any given level of costs of investment, it will not pay to invest money for less than a certain period, and in less than certain quantities."¹ Keynes emphasized the effect of interest rates on the speculative balances,² but it has been shown that the interest


²In all fairness, it should be stressed that Keynes also recognized the effects of both income and interest rates on transactions balances. "So far as the active circulation is concerned, it is sufficiently correct as a first approximation to regard the demand for money as proportionate to the effective demand, i.e., to the level of money income; which amounts to saying that the income velocity of the active circulation is
rate also affects the size of transactions balances. ¹

The firm reacts to higher interest rates in two ways: a rise in lending rates causes an increase in the opportunity cost of holding money and results in a decrease in money holding by the firm; a rise in borrowing rates causes the firm to hold additional cash in order to avoid the necessity of seeking external funds. In a period when corporations are financing internally, the first influence is likely to be the dominant one.

**Income and transactions.**—It is generally assumed that the demand for money increases when income increases, and this entails a rightward shift in the demand schedule for money (Figure 1). We argue that cash is primarily held for transactions motives and cash-substitutes primarily satisfy other motives for liquidity. Although changes can occur in the pattern of transactions between financial assets which are independent of changes in income, transactions are treated as related to income. Baumol’s theory suggests

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independent of the quantity of money. That is, I say, only a first approximation because the demand for money in the active circulation is also to some extent a function of the rate of interest, since a higher rate of interest may lead to a more economical use of active balances.” John Maynard Keynes, "The Theory of the Rate of Interest," The Lessons of Monetary Experience, ed. A. D. Gayer (New York: Farrar & Rinehart, Inc., 1937), p. 149.

¹W. Baumol, "The Transactions Demand . . ." and J. Tobin, "The Interest-Elasticity . . ." Tobin's thesis is that the transactions demand for cash varies inversely with the interest rate because of "the cost of transactions between cash and interest-bearing assets." Ibid., p. 241.
that economies of scale exist in cash holding for transactions purposes. Given the price level, the firm's transactions demand for cash varies in proportion to the square root of the value of its transactions.\footnote{Baumol, p. 546.}

**Taxes.**--It is expected that changes in taxes would affect the demand for money vis-à-vis money-substitutes. For example, a rise in the level of taxes produces a substitution effect which leads to shifts into convenience-yielding assets (cash) and out of money-yielding assets. A wealth effect, resulting from the reduction in income from money-yielding assets, causes just the opposite switching between assets, i.e., an increase in investment in money-yielding assets and a shift away from convenience-yielding

\footnote{A square root formulation was used by Edgeworth to explain banking theory. See: F. Y. Edgeworth, "The Mathematical Theory of Banking," Journal of the Royal Statistical Society, 51 (March, 1888), 113-27. He says that if the liabilities of a bank were doubled, the demands with which the bank is faced would not be doubled but would increase less than in proportion to the liabilities.

"But the proposition that the demands which a bank has to meet do not increase in proportion to the liabilities must be stated and applied with caution. It is true only of drains which are made up of a number of independent tributaries. It would not be true of autumnal drains due to regular causes. Suppose that in consequence of harvest operations or other periodical causes there is an autumnal drain of a million pounds upon the reserve of a bank. If we could conceive the business of the bank to be doubled, other things being undisturbed, there is every reason to suppose that that drain would be doubled. What would not be doubled is the margin of reserve which a prudent banker must keep in order to meet the possible excess of demands made upon him above the average of such demands. In our ideally doubled bank the autumnal average will be doubled, but the fortuitous excess above that average will not be doubled." Edgeworth, p. 125.}
assets. We cannot know which effect will be stronger or predict the exact effect on the demand for cash or cash-substitutes.

If we relax the assumption that money-substitutes are homogeneous, the differential tax treatment of various money-substitutes results in a different pattern of demand for each type of financial asset. Also, the firm is cognizant of the higher tax rate on interest yields than on capital gains and this, along with the tax level, influences the firm's decisions about financial investments.

Risk.--The smaller the degree of risk associated with holdings of cash-substitutes, the greater the magnitude of these holdings vis-à-vis cash. Both risk of default and risk of capital loss must be appraised by the firm. The risk associated with certain money-substitutes, such as Government securities, is primarily based on expectations of interest rate change rather than any risk of default. The central bank through its actions and statements of planned actions or of desired results can affect the firm's expectations about the variability of interest rates.

C. TOWARDS MORE REALISTIC DESCRIPTIONS OF FINANCIAL ASSETS

Factors Affecting the Firm's Total Financial Asset Holdings

Although this does not influence the hypotheses being tested, it is interesting to discuss factors which might change the firm's total financial asset holdings. Indeed, total holdings of cash plus cash-substitutes, held to satisfy the three liquidity motives, would be expected to decline
as a percentage of total assets and sales if the firm were subject to certain institutional changes such as an acceleration of tax payments. Similar changes in the firm's asset structure would occur if other assets held by the firm increased in liquidity or if earnings on real assets increased relative to those on financial assets.1 Institutional changes, from a period in which the firm is faced with a shortage of goods to one in which goods are readily available, would be accompanied by a shift in the firm's pattern of financial asset holdings.2

In theory, the sum of money plus non-monetary financial assets may exceed the firm's demands for transactions, precautionary, and speculative balances. It is assumed that these excess financial assets are an alternative to

1The profit rate on real assets affects the firm's decision to invest in non-monetary financial assets. If the profit rate were very high and the yield on money-substitutes were very low, all financial assets above those needed to satisfy the three liquidity motives would be invested in real assets. The firm might also be expected to issue its own commercial paper to finance further purchases of real assets as long as profits exceed the interest yield. However, this is an oversimplification. The existence of uncertainty prevents the profit rate and interest rate from being equal. For example, the risk of loss upon a forced resale might be much greater for a real asset than for a financial asset because of the lack of an organized market for used real assets and because real assets often have widely divergent "new" and "used" prices.

2This is likely to be a characteristic situation following a war or strike. Similarly, when expectations of war or strikes create fear of future shortages of goods, firms reduce financial asset holdings and spend for capital goods or inventories.
real asset holdings.\(^1\) We have no way to separate financial assets which are held as substitutes for real goods from those which are substitutes for money.

**Characteristics of Cash-Substitutes**

As noted earlier, liquidity preference theory considers money holding versus bond holding, but part of our emphasis is on the financial asset holdings between these two poles. These money-substitutes were discussed as a homogeneous asset with a single yield, but actually that definition might be considered as some aggregate average of financial assets whose yields, risks, and maturities vary widely. The characteristics of these financial assets may range from near-money to bonds; on that scale, every other financial asset is a better money-substitute than bonds.

This broader definition allows the composition of non-monetary financial assets, and perhaps their aggregate degree of substitutability for money, to change. It also allows the firm to choose between various types of financial assets for different liquidity needs.

### III. SHIFTS IN THE SCHEDULE OF DEMAND FOR MONEY

The principal hypothesis pertains to the relative decline in the corporate demand for money during the postwar

\(^1\)An increase in holdings of non-monetary financial assets has different monetary implications depending on which assets they replace. The Gurley-Shaw thesis stresses the importance of this point. See: John Gurley, "Monetary Theory and Financial Institutions," Employment, Growth, and Price Levels, Hearings Before the Joint Economic Committee, 86th Congress, May 28, 1959, pp. 864-65.
era and to the factors which caused the decline. For the individual firm, a decline could be characterized by either movement along a single demand schedule, or by a leftward shifting of the schedule of the demand for money. We shall analyze the theoretical implications of several factors which we believe caused the relative decline in the demand for money.

There remain the assumptions of uncertainty, the existence of brokers' fees, a zero interest yield on money, and a positive yield on money-substitutes. A schedule of the firm's real demand for money, as a function of interest rates and real income, is plotted in Figure 1. It must be remembered that prices and income are held constant and tastes are assumed unchanged in the discussion of the firm's real demand for money balances along any single schedule. A similar schedule of the demand for money is used in the theoretical analysis which follows. The analysis, as in all partial equilibrium models, ignores what is happening in other markets; furthermore, we are not really concerned with an equilibrium, and thus, we give very little attention to the supply of money.

It was argued that the firm may hold both money and money-substitutes to satisfy all three liquidity motives. Factors which affect the division of holdings between money and money-substitutes were mentioned, and it was suggested that precautionary and speculative balances were primarily held in money-substitutes.
In order to keep the analysis related to velocity studies which are generally not concerned with the group of money-substitutes, we concentrate on the relative decline in corporate money holdings. Since it is hypothesized that the growth of money-substitutes is a key explanation of the relative decline in money holdings, our theory includes the behavior of all liquid financial assets. Institutional changes in the postwar period caused revisions in the pattern of the corporate demand for money. In the following section is an analysis of the theoretical behavior of the firm's demand for money under various circumstances.

A. FACTORS CAUSING SHIFTS

Growth in Quantity and Improvement in Quality of Cash-Substitutes

Growth of substitutes.--Assume new cash-substitutes become available which are relatively safe, are highly marketable, and which offer an interest return. An increase in such offerings is likely to force their interest yield upward to insure their purchase. Assuming the interest return exceeds the costs of investment, firms replace money holdings with the more attractive money-substitutes. Thus the introduction of the new cash-substitutes causes the demand schedule for money to shift to the left, ceteris paribus.

The new schedule of the demand for money may become steeper for the following reason: as firms satisfy the speculative motive, which is more sensitive to interest rate
changes, the demand schedule which remains after subtracting speculative balances held in money-substitutes is relatively more steep. On the other hand, another reason would tend to make the new schedule less steep: at high interest rates, the firm has a greater incentive to reduce money demand and to hold securities because of the greater interest earnings and the potential for capital gains.

**Maturity of money-substitutes.**—Assume new money-substitutes become available which have a shorter maturity than that of the average outstanding instrument. If the average maturity structure of the cash-substitutes in the corporation's portfolio is shortened, *ceteris paribus*, how does the corporation's demand for money change? Because of the increased liquidity of the financial assets, the demand for money is decreased at every interest rate. At high interest rates, the prospects for larger capital gains are reduced by holding shorter maturities. The demand for money at high interest rates is not reduced as much as at lower rates, where the possibility of significant capital loss is reduced. Thus a greater reduction in demand for money occurs at lower rates than at higher ones; the new demand schedule is steeper.

For this argument to be relevant, it is assumed that corporations first choose to hold a certain maturity of cash-substitutes and then later choose money-substitutes with a shorter maturity. This behavior could be a reflection of the maturity structure of the economy-wide holdings
of the national debt, because it is known that the maturity structure of the Federal debt has shortened in the postwar period. In general, corporations have principally invested in the short-term issues. At the margin, however, it is conceivable that there has been a tendency for corporate holdings of cash-substitutes to become concentrated in shorter maturity instruments and, as a consequence, the demand for money schedule has been modified as described in the above paragraph.

**Improved quality of substitutes.**—An improvement in the quality of money-substitutes which in any way increases their substitutability for money—such as improved marketability, less risk of default, increased liquidity, guarantee by the Government or a Government agency, tailoring to specific use of corporations, etc.—reduces the demand for money at every interest rate. Here the incentive to hold less money should be greater at high interest rates than at low, as a result of these increases in quality.

**Effects of the Reduction of Uncertainty on Corporate Demand for Money**

If the corporation had less fear of future recessions or of periods of prolonged lagging economic activity, its demand for cash would be reduced at every interest rate. The primary reduction would be in precautionary balances, although a reduction in fluctuations could also reduce average transactions balances. Given the availability of good
cash-substitutes\(^1\) and less uncertainty about future economic developments, the firm can hold more of its transactions balances and its necessary precautionary balances in cash-substitutes, thereby reinforcing the leftward shift in the schedule of the demand for money. Measures by the Government to allay the fears of impending recessions could reduce the size of total precautionary balances held in money or money-substitutes.

**Growth of Trade Credit**

Trade credit receivables are related to a corporation's sales and fluctuate with sales. Trade credit in most cases is a selling device and the cost of extending it is included in the cost of the product. If an increase in trade credit occurs in conjunction with an increase in sales, the relevant schedule of the demand for money is one associated with a higher income level; this means a movement rightward to a higher demand curve in the family of demand schedules. We are not concerned with demand changes associated with higher sales and income at the moment, however.

If sales are constant and trade credit increases—meaning an increase in the actual practice of extending trade credit—corporations have a change in the structure of their financial assets. One would expect the growth of trade credit receivables to be principally at the expense

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\(^1\)Cash-substitutes for which the risk of capital loss and risk of default are minimal.
of cash. Trade credit extension, depending on its maturity, delays the inflow of cash and increases the need for transactions balances and, because of potential credit risks associated with the buyers, may increase the need for precautionary balances. After trade credit has been increased, there are two offsetting influences. First, there is an increase in the amount of money demanded at every interest rate. The exact nature of this increase would depend on the quality of the credit extended and its associated risks.

Second, the factor offsetting the increase in the demand for money caused by an extension of trade credit is the greater degree of planning which it allows. For example, suppose this increase in receivables of the firm is matched by a comparable increase in payables (i.e., the firm has had an increase in credit extended to it). The greater volume of trade credit—receivables and payables—allows the firm to plan the timing of inflows and to synchronize a larger portion of its receipts and disbursements. The amount of money the corporation wishes to hold may decrease below its former level because of the greater ease of planning and certainty of timing which the larger volume of trade credit allows and because of the greater amount of financial assets in the corporation’s portfolio.

Given this increased volume of trade credit, it is expected that the schedule of demand for money shifts leftward, ceteris paribus, more than the initial rightward shift. Even if the corporation were a net extender of trade credit,
the improvement in planning, which trade credit allows, may still result in a greater leftward shift in the firm's schedule of demand for money.

**Higher Cost of Money**

Given the firm's initial schedule of demand for money, assume tighter monetary policies are instituted and achieved by Federal Reserve open market sales of securities. Higher market interest rates, resulting from the leftward shift in the supply of money, entail tighter money for the firm. We assume the firm cannot influence the interest rate level but adjusts to the new level, ceteris paribus, by moving upward along its schedule of the demand for money to a new equilibrium. (See Figure 2.)

\[ \begin{align*}
\frac{\text{M}}{P} \\
\end{align*} \]

**Figure 2**

Higher interest rates produce an incentive within the corporation to develop techniques to utilize cash more efficiently. This incentive stems from the opportunity costs of holding money, which if safely invested could bring a
return, or from the actual costs of borrowing money. In addition, other sectors of the economy, especially the financial sectors, are making technological improvements and developing financial innovations in response to the tighter money situation, and this produces external economies from which the corporate sector can benefit. For example, technological changes, such as the introduction of computers and data processing techniques, and financial innovations, such as new instruments, can increase the efficiency of the payment mechanism and thus allow the firm to reduce the transactions demand for money at every interest rate. Certain techniques for greater utilization of cash such as delaying payments may benefit the individual firm. However, if that practice is adopted by all firms, obviously there is no net increase in utilization of cash.

By devising a variety of cash saving techniques, including using near-cash instruments to perform cash functions, the firm can actually reduce its demand for money at every interest rate. This is an irreversible process in that once the financial techniques are developed, a subsequent fall in the interest rate resulting from monetary ease does not cause an offsetting rightward shift in the firm's demand for money. The new techniques for efficient cash utilization are not abandoned in a period of falling interest rates.
B. THEORY RELATED TO EXPERIENCE

We cannot empirically relate the theoretical schedules of the demand for money, which were developed in the previous sections, to the corporate schedules in the postwar period because we cannot know their actual slope or shape at any time. Only a single point on the schedule can be known at one point in time for an individual corporation or for the corporate sector as a whole. Although the shifting of the schedules cannot be shown empirically, the analysis developed in the previous sections can be used to argue that, if the events mentioned occur, the corporate schedules of demand for money would behave as described. Later, it will be argued that, in fact, changes occurred in the postwar period which, our analysis indicates, would cause just such leftward shifting.

This leftward shifting is consistent with observed data which show that corporations have steadily reduced their cash holdings relative to transactions (sales). The shifting is also consistent with observed data in the postwar period which show that the corporate income velocity of money has increased since 1949, relative to the income velocity of money for the entire economy.

The analysis so far has been based on the assumption of a constant level of income, but in theory, a whole family of schedules of demand for money exists—one for each level of income. Our argument is that in the postwar period, the entire family has shifted leftward. The
individual firm is assumed to move to higher demand schedules for money as its sales and income rise. Although the leftward shifting, resulting from the various factors already mentioned, and the movement rightward as income increases may be analyzed separately, it is impossible to know the firm’s schedule or to explain how much the firm’s increase in money demanded, caused by higher income, has been offset by leftward shifting of the family of schedules of demand for money.

It is conceivable that the leftward shifting of the schedules of demand for money in the postwar period is partially a reflection of a tendency of firms to reduce cash holdings to that amount necessary for transactions purposes and partially a reflection of the firm’s ability to reduce the amount of cash holdings necessary for a given volume of transactions. We shall argue that corporate behavior was characterized by both types of occurrences in the postwar period.

C. AGGREGATION PROBLEM

We have argued in the case of the firm’s demand for money that various influences may cause the schedule of demand for money to shift leftward. Since these factors affect the demand for money, the simple model $M/P = f(i,Y)$ which was used can be extended.

Then, the firm’s real demand for money is a function of the yield on money-substitutes, the availability and quality of money-substitutes, expectations about economic
stability, the level of managerial efficiency in conserving cash, tastes (perhaps corporation policy with regard to financial asset structure), as well as real income.

Our theory suggests that individual firms tend to reduce cash holdings toward that level necessary for transactions purposes. Although the amount would vary by firm, and theoretically the fraction of total transactions needs held in cash form should vary, the theory leads us to expect that the general behavior of all firms in moving toward smaller cash holdings—primarily balances held for transactions purposes—was similar in the postwar period.

Aggregation requires that independent variables which affect the corporate demand for money change in roughly the same way for all firms. It can be assumed that interest rates on cash-substitutes and the availability of cash-substitutes are similar for all firms. We can assume tastes are similar by reasoning that the desire to increase total profits would make the preference for relative holdings of various financial assets approximately similar. However, expectations, managerial efficiency, and income would vary among firms.

Friedman, when confronted with a similar problem,
defined the individual unit's demand for money:  

\[ \frac{M}{P} = f(r_b, r_e, \frac{1}{P} \frac{dP}{dT}; \bar{w}; \frac{Y}{P}; u) \]

He notes that \( \frac{1}{P} \frac{dP}{dT}, \bar{w}, \) and \( Y \) differ substantially among units (firms or households). He then says "an approximation is to neglect these difficulties" and take this equation as applying to the aggregate demand for money . . . .

This is the procedure that has generally been followed and it seems the right one until serious departures between this linear approximation and experience make it necessary to introduce measures of dispersion with respect to one or more of the variables.²

The cash holding by an individual firm can be depicted as:

![Graph showing the relationship between M (money), k, k', and Y (income or sales)]

Figure 3

¹Milton Friedman, "The Quantity Theory . . . ." P. 11. Here \( r_b \) = the market bond interest rate; \( r_e \) = market interest rate on equities; \( \frac{1}{P} \frac{dP}{dT} \) = the size of the appreciation or depreciation in money value per $1.00 of physical goods; \( w \) = the ratio of non-human to human wealth or, of income from non-human wealth to income from human wealth; \( \frac{Y}{P} \) = real income, or the real return to all forms of wealth other than the money held by the ultimate wealth-owning unit; and \( u \) = those variables which influence tastes. Ibid., pp. 6-11.

We have argued that various factors can cause the firm's schedule of demand for money to shift to the left or similarly, can cause the k curve shown above to rotate downward to k'.

We assume that k is constant for the individual firm—and for all firms in the corporate sector—at any point in time, though it is not constant over time. The economy is made up of a group of firms whose Y's and k's differ. Assume that all firms are growing together; i.e., assume each firm in the economy produces a constant per cent of GNP over time. Since all firms are affected by the same economic influences in varying degrees, those factors which cause k to rotate in the individual case cause it to rotate for the corporate sector as a whole.

Given a number of firms:

<table>
<thead>
<tr>
<th>Firm a</th>
<th>Firm b</th>
<th>Entire Corporate Sector</th>
</tr>
</thead>
</table>

\[ M_a \quad M_b \quad + \quad + \ldots + = \quad M \quad k \]

\[ Y_a \quad Y_b \quad Y \]

**Figure 4**
By adding all sales and all money demands at time $T_1$, the average velocity of money income for the corporate sector can be determined. Then by doing the same thing at time $T_2$, we get a new value for aggregate $k$. The income velocity of money for the entire corporate sector must be some weighted average of that for all individual firms.

It is possible to get a stronger result (a greater rotation in the aggregate $k$) in the sense that the decline in cash holdings of the entire corporate sector would be greater, if we assume that those firms which utilize cash more efficiently are more profitable. If being more profitable allows greater growth in those firms which economize cash, they may produce a larger percentage of GNP. Over time, their $k'$ curves would rotate farther to the right and the average income velocity of money for the entire corporate sector would increase by a greater amount—or the $k'$ curve for the entire corporate sector would show greater rotation to the right.

The problems of aggregation are very difficult. It is necessary to bridge the gap between the firm and all firms. It is desirable to abstract, describe a typical firm, and then relate its behavior to that of all firms. Conversely, it is hoped that information obtained from aggregate data implies a behavior which is consistent with that which one would expect the individual firm to exhibit.

We shall use Friedman's approach to approximate the aggregate corporation function from the individual firm's
function of the demand for money. Friedman's aggregate approximation applies to both the individual consumer and the individual firm; following this line of reasoning, the aggregate demand for money of all firms could be approximated as easily. Intuitively, it seems that income, price expectations, etc., would differ less among all firms than among all firms plus households.

D. HYPOTHESES RESTATED

The main hypothesis is that corporations in the post-war period have reduced cash balances relative to their level of activity because of the following reasons:

(1) The greater availability of cash-substitutes. We contend that because of an increase in the quality and quantity of these money-substitutes, corporations have made greater use of them. The increase in the use of money-substitutes, coupled with major financial innovations, has allowed firms to operate with relatively less money.

A sub-hypothesis is that these cash-substitutes allow corporations to keep cash balances at a minimum for transactions needs, and the cash-substitutes are used in adjusting to cash needs. Because of the way corporations can use these cash-substitutes, cash balances may remain relatively stable; major adjustments to liquidity needs occur through the medium of cash-substitutes.

Trade credit may verge on being a money-substitute. We suggest that this characteristic of trade credit, together with the greater ease of planning which the existence
of trade credit allows, has resulted in a reduction in the corporate demand for money in the postwar period.

(2) Higher cost of money. Tight monetary policy has produced an incentive for corporations to utilize cash more efficiently and to invest excess cash in cash-substitutes.

(3) Technological developments and improved managerial skills in utilizing cash. The relative increase in velocity of money in the business sector could not have been achieved without these improvements.

(4) Relative economic stability. Increasing economic stability and expectations of the business sector that Government policy would maintain stability have affected the behavior of firms and have resulted in a relative decline in their cash holding.

E. POSTWAR EXPERIENCE

If the aggregate corporate demand for money declined relative to sales and total assets, in the way which our hypothesis suggests and for the reasons which our theory indicates, money-substitutes should behave in a predictable manner. In the following chapters, we analyze the behavior of money and money-substitutes in the postwar period and investigate the role which money-substitutes played as the adjustment medium to cash needs.

We ignore the existence of a theoretical long-run schedule of corporate demand for money in an attempt to concentrate on factors which cause shifts in the short-run schedule. If monetary authorities plan short-run programs
to effect either ease or restraint, the authorities must have some approximation of the effects of the policy on various sectors. We believe that the monetary planner, in that case, has some notion of what the corporate demand for money would be at all interest rates within a close range of the existing rate. In order to bring about short-run policy changes, the planner would be more interested in knowing this short-run schedule than in ascertaining the long-run schedule.

The short-run schedules may actually shift along the long-run schedule of the demand for money. In a subsequent chapter, we discuss several postwar changes which our theory suggests would cause such leftward shifts in these schedules of the demand for money. The implications which these shifts have for monetary and debt management policy are also discussed.
CHAPTER III

POSTWAR RECORD

In the preceding chapter, the theory of corporate demand for liquid financial assets was discussed in terms of holdings of money vis-à-vis money-substitutes. Although the principal focus in this thesis is on corporate holdings of liquid financial assets, additional attention is given to other money-substitutes when information is available. We hope to broaden our knowledge of the corporate sector by examining three separate sources of aggregate data for an indication of the postwar trend in specific financial ratios: liquid financial assets to total assets, sales, and total financial assets. Additional information relating to the postwar behavior of corporate holdings of liquid financial assets is obtained from company interviews.

I. AGGREGATE DATA

A. FLOW OF FUNDS ACCOUNTS

In Flow of Funds Accounts, 1945-62,¹ annual data of total financial assets of the corporate nonfinancial business sector are subdivided into the following categories:

¹Flow of Funds, pp. 5-6.
Liquid assets
- Demand deposits and currency
- Time deposits
- U.S. Government securities
- State and local obligations
- Consumer credit
- Other loans (finance paper)
- Trade credit
- Other financial assets (foreign currency and deposits and direct investment abroad)

Although we are not interested in all items classified above as financial assets,\textsuperscript{1} we can inspect annual data of corporate trade credit and holdings of money and key money-substitutes, plotted in Chart III-A, and compare their relative growth rates. Corporate holdings of money-substitutes exceeded their money holdings; clearly, trade credit and the stock of all money-substitutes grew at a faster rate than money in corporate portfolios during the postwar period. Chart III-B illustrates the decline of cash and Government securities as a per cent of total financial assets.

This categorization of financial assets in the Flow of Funds Accounts, 1945-62 is the best source of information on corporate holdings of various cash-substitutes. Other statistical data show only "cash"--including some cash-substitutes--and "U.S. Government securities" or "Government obligations"--including state and local obligations. No

\textsuperscript{1}Trade credit is explicitly treated, but no further mention is made of consumer credit because we feel it does not merit specific analysis for manufacturing corporations. Also, in Flow of Funds data for the entire corporate sector, consumer credit represents less than 5\% of total financial assets.
CHART III-B
DEMAND DEPOSITS AND CURRENCY, GOVERNMENT SECURITIES, AND TIME DEPOSITS AS A PER CENT OF TOTAL FINANCIAL ASSETS

Source: Flow of Funds, 1945-62
other statistical source shows the variety of marketable securities in corporate portfolios.

The relative stability of the growth of corporate holdings of demand deposits and currency, compared with that of time deposits, suggests one reason why the former alone might represent a more accurate definition of the money supply.\(^1\) We believe time deposits, particularly negotiable CD's which have recently mushroomed in corporate portfolios, symbolize a money-substitute for firms; such assets, held in interest-yielding form should be analyzed separately from money.

Confining the discussion to liquid financial assets, we see from Chart III-A that corporate holdings of Government securities and time deposits have fluctuated more than holdings of cash. We argue that cash is relatively stable because the cash-substitute holdings are adjusted to satisfy cash needs. When cash inflows exceed the amount the firms wish to hold, the excess funds are invested in cash-substitutes; and conversely, when the cash inflows are deficient, the corporations adjust cash balances by disinvesting cash-substitutes. Time deposits and Government securities, classified as liquid financial assets, might be considered as the nearest substitute for cash; thus, the greater fluctuations in these assets than in cash suggest

\(^1\)An unresolved controversy in monetary theory revolves around the appropriate financial assets to include in a definition of money. (See: Johnson, p. 344.)
their use as the medium of adjustment which our theory hypothesizes.\textsuperscript{1}

B. STATISTICS OF INCOME

Statistics of Income, compiled on an annual basis, present data from all corporation income returns. Although balance sheet data and income statements are presented for more than 90\% of all industrial corporations, we are using only the data for "Total Manufacturing Corporations" in the tables marked "All returns with balance sheets."\textsuperscript{2} The manufacturing sector was chosen from this group because it represents a sizable part of the activity of the total industrial group.\textsuperscript{3} Another reason was that quarterly data for manufacturing corporations were published and it was hoped that the two series would give complementary information;

\textsuperscript{1}Part of the greater fluctuations in corporate holdings of the interest-yielding financial assets are in response to interest rate differentials among the various assets and to variations in corporate evaluations of risk associated with the assets.

\textsuperscript{2}The data for "All industrial groups" include returns for agriculture; mining; manufacturing; transportation, communication, electric, gas, and sanitary services; wholesale and retail trade; finance, insurance, and real estate; and services.

\textsuperscript{3}"Corporations account for more than 95 per cent of total receipts from all manufacturing activity in the United States; manufacturing corporations account for more than half of all corporate profits." (Quarterly Financial Report, Fourth Quarter, 1959, p. 2.)

"The manufacturing industry plays an important role in the corporate income and tax changes in the United States, since it accounts for about 50 per cent of compiled receipts and net income, and about 60 per cent of the total tax liability for all corporations." (Statistics of Income, 1952, p. 6.)
however, it was found that the two series were not comparable.

Data from the manufacturing sector of Statistics of Income are plotted in Chart III-C. Both cash and Government obligations declined as a per cent of total assets during the postwar period and fluctuations in Government obligations were greater than those in cash. It must be remembered that this cash figure is overstated because it includes much more than our definition of money\(^1\) and the Government obligation figure includes more than U.S. Government securities.\(^2\)

Holdings of U.S. Government securities by manufacturing corporations were listed separately after 1954 (see Table I). Corporate holdings of Government obligations were probably understated in the postwar period.\(^3\)

\(^1\)For years 1947-1958, cash is defined as "including bank deposits." In 1959 and 1960, cash "Included such items as bank deposits, checks, deposits in or shares of building and loan associations savings accounts, and cash in sinking or other funds." (Statistics of Income, 1959-60, p. 30.)

\(^2\)Government obligations include "obligations of the United States or agency or instrumentality thereof as well as obligations of States, Territories, and political subdivisions thereof, the District of Columbia, and United States possessions." (Statistics of Income, 1947-48, p. 381.) Prior to 1954, this total was not subdivided; after 1954, it was broken down into three components, shown in Table I.

\(^3\)Throughout this period some Government obligations were probably categorized incorrectly; "Where investments are not segregated as between 'Government obligations' and 'Other,' the entire amount is included in 'Other investments'." (Statistics of Income, 1947, p. 381.) This does not present a problem for our analysis; it is mentioned merely to show cognizance that some understatement of Government obligations occurred.
CHART III-C
CASH AND GOVERNMENT OBLIGATIONS AS A PER CENT OF TOTAL ASSETS
ALL MANUFACTURING CORPORATIONS

Source: Statistics of Income
--- cash
....... Government obligations
### TABLE I

SELECTED BALANCE SHEET ITEMS - TOTAL MANUFACTURING  
(In millions of dollars)

Percentage figures represent per cent of total assets

<table>
<thead>
<tr>
<th>Year</th>
<th>Total assets</th>
<th>Cash</th>
<th>Total government obligations</th>
<th>States, U.S. U.S. Possessions obligations</th>
<th>Not stated</th>
<th>Other investments</th>
<th>Other current assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
<td>$</td>
<td>%</td>
<td>$</td>
<td>%</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1947</td>
<td>$111,356</td>
<td>$11,884</td>
<td>10.7</td>
<td>$7,066</td>
<td>6.3</td>
<td></td>
<td>$10,708</td>
</tr>
<tr>
<td>1948</td>
<td>121,708</td>
<td>11,778</td>
<td>9.7</td>
<td>7,548</td>
<td>6.2</td>
<td></td>
<td>11,137</td>
</tr>
<tr>
<td>1949</td>
<td>123,755</td>
<td>12,610</td>
<td>10.2</td>
<td>9,439</td>
<td>7.6</td>
<td></td>
<td>11,350</td>
</tr>
<tr>
<td>1950</td>
<td>141,600</td>
<td>13,370</td>
<td>9.4</td>
<td>12,201</td>
<td>8.6</td>
<td></td>
<td>12,328</td>
</tr>
<tr>
<td>1951</td>
<td>160,876</td>
<td>14,542</td>
<td>9.0</td>
<td>12,757</td>
<td>7.9</td>
<td></td>
<td>13,257</td>
</tr>
<tr>
<td>1952</td>
<td>170,282</td>
<td>14,748</td>
<td>8.7</td>
<td>11,881</td>
<td>7.0</td>
<td></td>
<td>14,041</td>
</tr>
<tr>
<td>1953</td>
<td>176,805</td>
<td>14,847</td>
<td>8.4</td>
<td>12,975</td>
<td>7.3</td>
<td></td>
<td>14,292</td>
</tr>
<tr>
<td>1954</td>
<td>181,891</td>
<td>15,745</td>
<td>8.7</td>
<td>11,936</td>
<td>6.6</td>
<td>$342</td>
<td>$11,204</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$391</td>
</tr>
<tr>
<td>1955</td>
<td>201,360</td>
<td>15,999</td>
<td>7.9</td>
<td>15,183</td>
<td>7.5</td>
<td>491</td>
<td>11,756</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,936</td>
</tr>
<tr>
<td>1956</td>
<td>216,363</td>
<td>15,514</td>
<td>7.2</td>
<td>11,112</td>
<td>5.1</td>
<td>549</td>
<td>9,813</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>750</td>
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<tr>
<td>1957</td>
<td>224,910</td>
<td>15,165</td>
<td>6.7</td>
<td>11,155</td>
<td>5.0</td>
<td>639</td>
<td>9,737</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>779</td>
</tr>
<tr>
<td>1958</td>
<td>235,836</td>
<td>16,231</td>
<td>6.9</td>
<td>11,764</td>
<td>5.0</td>
<td>951</td>
<td>10,182</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>632</td>
</tr>
<tr>
<td>1959</td>
<td>252,134</td>
<td>15,239</td>
<td>6.0</td>
<td>15,390</td>
<td>6.1</td>
<td>1,596</td>
<td>13,431</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>363</td>
</tr>
<tr>
<td>1960</td>
<td>262,308</td>
<td>15,373</td>
<td>5.9</td>
<td>12,879</td>
<td>4.9</td>
<td>1,280</td>
<td>11,007</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>592</td>
</tr>
<tr>
<td>1961</td>
<td>275,964</td>
<td>16,064</td>
<td>5.8</td>
<td>12,548</td>
<td>4.5</td>
<td>1,217</td>
<td>10,629</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>702</td>
</tr>
</tbody>
</table>

Source: Statistics of Income
marketable securities were not listed separately until 1959 when a new balance sheet item "Other current assets including short-term marketable investments" was added. The percentage of marketable securities in the new account was not ascertainable. Short-term marketable securities before 1959 were included in "Other investments," and although other money-substitutes were included in this category throughout the postwar period, it is impossible to know their magnitude.

From Statistics of Income, we cannot distinguish a clear division of money and money-substitutes in the portfolios of manufacturing corporations during the postwar period. The fluctuations in holdings of Government obligations again exceed those of cash holdings. The ratio of cash to total assets declines and we can infer the decline would be greater if cash-substitutes were not included in the cash figure.

1"Includible in the new account were certain assets previously regarded either as Other investments, such as short-term nongovernment securities and short-term loans to subsidiaries, or as Other assets, such as dividends receivable." (Statistics of Income, 1959-60, p. 41.)

2"Also included in Other current assets was Prepaid expenses and supplies, a separate asset account in prior years, as well as some of the assets previously included in Other investments and Other assets." (Statistics of Income, 1959-60, p. 16.)

3After 1959, "Other investments were, in general, long-term nongovernment investments and investments which could not be classified at all. Nongovernment investments generally not held for conversion to another form within the coming year included certain stocks, bonds, loans on notes or bonds, loans to subsidiaries, and other types of financial securities." (Statistics of Income, 1959-60, p. 41.)
Comparison With Prewar Cash Holdings

The only available comparable data of prewar and postwar cash holdings are found in Statistics of Income. The ratio of cash to total assets for all manufacturing corporations for selected prewar years are shown below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1926</td>
<td>6.0%</td>
</tr>
<tr>
<td>1927</td>
<td>5.4</td>
</tr>
<tr>
<td>1928</td>
<td>5.8</td>
</tr>
<tr>
<td>1929</td>
<td>5.5</td>
</tr>
<tr>
<td>1933</td>
<td>7.3</td>
</tr>
<tr>
<td>1935</td>
<td>7.8</td>
</tr>
<tr>
<td>1937</td>
<td>6.3</td>
</tr>
<tr>
<td>1939</td>
<td>8.7</td>
</tr>
<tr>
<td>1940</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Comparing these with postwar data in Table I, it can be seen that the 1961 cash ratio of 5.8% is slightly higher than the 1927 and 1929 ratios. The 1961 ratio, however, is considerably lower than the same ratio for the 1930's and World War II years.

The ratio of cash to gross sales is lower in the postwar period than in the 1920's, and this suggests greater efficiency in utilization of cash in the postwar period.¹ In 1957, the ratio of cash to gross sales was 4.7%; this same ratio was 5.6% in 1929 and 6.1% in 1928.

Our interests are not in comparing the postwar period with other periods but rather in scrutinizing postwar behavior of cash and cash-substitute holdings of corporations.

However, a few comments can explain why we think the postwar period is unique. The postwar rise in the income velocity of money contrasts with the long run secular decline in velocity from 1869-1960. Friedman compares the velocity rise from 1946-1960 (interrupted from 1951-54) with a similar rise from 1932-1942 (interrupted from 1937-40) and asserts they are both a reaction to a previous fall in velocity.¹

We argue that the postwar declines in cash/sales and cash/total assets of the corporate sector are caused by several factors which affect cash holding. These factors were probably not operative in the 1930’s when monetary policy was ineffectively attempting to induce consumption and investment spending.² It is unlikely that the factors which affected cash holding in the prosperous postwar period were comparable in the depression years of the 1930’s.

It is difficult to believe that the cash/sales ratio of corporations in 1962—seventeen years after the end of World War II—continues to decline primarily as a reaction to a wartime fall in velocity. We submit that other factors have influenced corporate cash holding in the postwar period, and as long as those factors remain operative, corporate cash ratios will continue to fall.

¹Friedman and Schwartz, p. 641.

²Yields on new issues of Government bills were below one per cent from 1932-42 except for four months. Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, 31 (May, 1945), 484-85.
C. QUARTERLY FINANCIAL REPORTS (FTC-SEC)

We can see from the FTC-SEC data, used in Chart III-D, that the ratio of cash to sales declined during the postwar period. It is also apparent, in Chart III-E, that cash holdings declined as a percentage of total assets. The ratio of U.S. Government securities/total assets fluctuates more than the cash/total assets ratio.

Ratios such as cash/total assets and Government securities/total assets are used because a better comparison of the behavior of these assets can be made when both have a common denominator. The stock "total assets" appears to be the best denominator. This approach—using a percentage figure—may also be preferable to using an absolute figure to compare cash holdings at different points of time because it tends to remove those changes in cash holdings which are caused solely by changes in the sample.

The balance sheet of the Quarterly Financial Report indicates the following liquid financial assets: (1) Cash on hand and in bank\(^1\) and (2) U.S. Government securities, including Treasury savings notes.\(^2\) Other cash-substitutes are included with "Other current assets" but one cannot know their magnitude or composition. From this data, it is not possible to analyze holdings of cash vis-à-vis

\(^1\)It must be remembered that some cash-substitutes such as time deposits are included with cash.

\(^2\)The Quarterly Financial Report notes that this includes tax anticipation bills and non-guaranteed Federal agency issues.
CHART III-D
CASH AS A PER CENT OF NET SALES - ALL MANUFACTURING CORPORATIONS
Source: Quarterly Financial Report
CHART III-E
CASH AND GOVERNMENT SECURITIES AS A PER CENT OF TOTAL ASSETS
ALL MANUFACTURING CORPORATIONS

Source: Quarterly Financial Report

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<table>
<thead>
<tr>
<th>Year</th>
<th>Cash</th>
<th>Government Securities</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>12.5</td>
<td>5.0</td>
</tr>
<tr>
<td>48</td>
<td>10.0</td>
<td>5.5</td>
</tr>
<tr>
<td>49</td>
<td>9.5</td>
<td>6.0</td>
</tr>
<tr>
<td>50</td>
<td>8.5</td>
<td>6.5</td>
</tr>
<tr>
<td>51</td>
<td>8.0</td>
<td>7.0</td>
</tr>
<tr>
<td>52</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>53</td>
<td>7.0</td>
<td>8.0</td>
</tr>
<tr>
<td>54</td>
<td>6.0</td>
<td>8.5</td>
</tr>
<tr>
<td>55</td>
<td>5.5</td>
<td>9.0</td>
</tr>
<tr>
<td>56</td>
<td>5.0</td>
<td>9.5</td>
</tr>
<tr>
<td>57</td>
<td>4.5</td>
<td>10.0</td>
</tr>
<tr>
<td>58</td>
<td>4.0</td>
<td>10.5</td>
</tr>
<tr>
<td>59</td>
<td>3.5</td>
<td>11.0</td>
</tr>
<tr>
<td>60</td>
<td>3.0</td>
<td>11.5</td>
</tr>
<tr>
<td>61</td>
<td>2.5</td>
<td>12.0</td>
</tr>
<tr>
<td>62</td>
<td>2.0</td>
<td>12.5</td>
</tr>
</tbody>
</table>

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%
cash-substitutes because of the lack of any distinct division among the financial assets; Government securities are the only cash-substitute listed separately. If time deposits and CD's were removed from the cash figure, the relative decline in cash holding would be greater.

We shall ignore the limitations of the data and discuss the two items: cash and Government securities. The greater fluctuations in securities than in cash (Chart III-E) suggest that the securities could function as the medium of adjustment to cash needs.

The declining ratio of cash/sales over the postwar period offers some evidence to support our hypothesis that corporate schedules of the demand for money have shifted leftward. Net sales are the best available measure of income in FTC data; and since both cash and sales for each quarter are in current dollars, prices are constant in the cash/sales ratios. At least, the declining cash/sales ratio does not contradict our hypothesis that the corporate schedule of demand for money, at a constant income level, has shifted leftward in the postwar period.

II. INDIVIDUAL FIRM DATA

One firm in each of four industries was interviewed to obtain additional information about corporate practices in the management of liquid financial asset holdings.¹

¹See Appendix A for a list of questions asked and responses given by the firms.
Information obtained from the case studies adds a degree of verification to parts of our hypothesis. It was found that cash declined as a per cent of total assets and as a per cent of sales, in all four firms, and declined in absolute amount in three of the firms during the postwar period.

Certain factors appear to have influenced the cash holding behavior of the firms. The rising costs of money affected Anderson, Clayton's borrowing habits; higher costs of money caused the firm to borrow in the market which had the lowest interest rates. Conoco was especially cognizant of the opportunity costs of idle funds and vigorously attempted to get maximum utilization from cash and to invest excess cash in marketable securities with the maximum yield--within choices determined by company policy. In both companies, as well as in Company X, the higher interest rates gave the firms an incentive for the more efficient use of cash.

All companies reduced average cash holdings because of technological developments and financial innovations. Several of the companies mentioned ways in which float was reduced; these depended on the introduction of banking innovations, communication improvements, and practices developed by the firms. Conoco improved cash management by centralization of certain banking functions, the use of area concentration banking arrangements, the use of lockboxes, and general efficiency in banking relationships. Company X
utilized short-term bank funds and longer-term funds from alternate sources in a way which minimized costs and allowed the firm to keep cash at minimum levels. All firms mentioned benefits attained from the improved speed in processing data and from more reliable information.

Three of the firms exerted some degree of bargaining power with banks to obtain greater use from funds at lower costs. Conoco's success in getting banks to bid for handling its accounts and the resulting practice in which Conoco held CD's as compensating balances are good indications that banks can also compete with other financial institutions and can create innovations which will increase their profits. Since banks have a monopoly on the payment mechanism they are certain to get some corporate funds. After this initial relationship is established, as the Conoco case illustrates, banks can attract excess corporate funds by tailoring instruments to corporate needs and creating financial innovations in conjunction with banking services to fit the corporation's specifications.

The concept of an optimum cash balance varied in the firms interviewed. For Conoco, the optimum was that amount of money needed to support the activity in each account. In many cases this was the minimum cash required to compensate banks for services, and the appropriate amount was determined by the mutual agreement of Conoco and the banks. In Company I, the optimum was a sum large enough to compensate banks; however, the cash figure on the annual balance sheet
was not allowed to fall below a certain sum felt to be a "safe" amount by the Treasurer. In Company X, the optimum cash for day-to-day operations was the minimum required to cover planned disbursements for each day. Careful cash planning allowed a high level of synchronization of receipts and disbursements, and credit line arrangements were used when disbursements exceeded receipts. The target cash figure for Anderson, Clayton in each bank depended on the minimum cash needed for transactions and for supporting bank credit lines. During the postwar period, in three of the firms the concept of the amount of cash believed to be an optimum changed so that a smaller sum is accepted as an optimum.

Conoco was the only company which invested in marketable securities, and their ability to invest in these cash-substitutes appears to have added to the stability of the firm's cash holdings and to have increased the firm's efficiency in cash utilization. Employees in the Treasury Department seemed very sophisticated in their awareness of the profitability of optimum use of cash and of efficient investment of all sums above the target cash figure. Management would demand an explanation if the investment officer left $50,000.00 or more--above the target cash balance--idle over a weekend.

The level of interest rates on various cash-substitutes determined the composition of Conoco's portfolio of marketable securities. From the list of securities which
company policy allowed to be purchased, the financial officer chose those securities with the highest yield. However, these policies of the Board of Directors placed constraints on the firm's ability to maximize profits, because profitable foreign bills and dollar deposits in foreign banks were not included on the approved list.

In making investment decisions, Conoco's financial officer considered the cash forecast of the day's receipts and disbursements, the cash forecasts for the week and month, and the securities existing in the firm's portfolio: their maturity structure as well as other qualitative factors. Part of the financial investments were made for future planned construction, and the maturity of these marketable securities matched the date the funds were needed; maturities were chosen similarly in financial investments made for other known operating needs. The remainder of financial investments were made to obtain the highest interest yield possible within the constraints set out by the Board of Directors.

It appeared that Conoco after 1952 used marketable securities as the medium for adjusting to cash needs, and the Assistant-Treasurer agreed that this was a plausible description of Conoco's behavior. After 1952, security holdings dropped to low levels during contraction periods, as would be expected, with the exception of 1957-58, when
long-term borrowing\textsuperscript{1} resulted in an increase in security holdings.

Three of the companies engaged in extensive cash forecasting, and in each case, the financial officer believed this resulted in more efficient utilization of cash and lower costs for borrowed cash. When borrowing was necessary, careful cash planning allowed the financial officer to know the proper amount and the appropriate time for borrowing. In the case of Conoco, this planning also resulted in better knowledge about the availability of excess cash and allowed greater return from investments in cash-substitutes. Although it seems reasonable to assume that a firm which is very static or which increases sales at a steady and predictable rate needs less cash planning, it was an unexpected revelation that the financial officer of Company Y did not engage in any cash forecasting.

All indications lead to the conclusion that careful cash planning and more efficient use of cash resulted in greater earnings for the firms. There are indications that firms became more aware of opportunities to utilize cash efficiently in the postwar period. Firms, in fact, devised methods to use cash more effectively and exerted pressure on banks to develop means for facilitating efficient use of cash.

\textsuperscript{1}This borrowing consisted of a $42,000.00 bond issue in October, 1957.
III. SUMMARY

From aggregate corporate data and from individual company interviews, it is clear that the relative demand for money has declined in the postwar period. Corporate ratios of money to sales, to total assets, and to total financial assets have all steadily decreased, while relative holdings of cash-substitutes have increased according to Flow of Funds data.

The interviews with Houston firms, although limited in scope and small in number, offer some verification of our hypothesis. Financial officers believed the postwar relative decline in cash holding was caused by various factors, among which were: higher interest rates, growth in quantity and quality of money-substitutes, financial innovations, technological improvements, developments in managerial techniques, and increased stability in the postwar period.
CHAPTER IV

EXPLANATIONS OF DECLINING CASH RATIOS

In this chapter, several factors are discussed which help explain the relative decline\(^1\) in the corporate demand for money during the postwar period. Though the importance of each factor cannot be ascertained, we believe the combination largely explains the corporate pattern of financial asset holdings.

I. GROWTH OF CASH-SUBSTITUTES

This section emphasizes the quantitative and qualitative growth of various financial assets which corporations have held since 1947 as alternatives to cash. This includes an analysis of the manner in which firms use cash-substitutes as the medium of adjustment to cash needs. The first subdivision below contains a description of these financial assets, although no data are available to show the exact magnitude of corporate holdings of each cash-substitute.

Statistics which show corporate holdings of Government securities do not generally indicate the maturity structure

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\(^1\)Relative decline means the decline in cash holding relative to sales and to total assets, i.e., the decline of the ratios discussed in the last chapter.
of these investments. A maturity distribution of the Government debt held by nonfinancial corporations was published in the Treasury Bulletin,\textsuperscript{1} for the first time, in 1960.\textsuperscript{2} Obviously, the shorter term securities are better cash-substitutes, and it appears that corporate holdings have shifted toward these during the postwar period. This shifting does not represent a net addition to corporate holdings of Government debt but rather a substitution of short-term for long-term securities. The greater yield on short-term debt relative to long-term induced this behavior in corporations.\textsuperscript{3} This change in corporate holdings was in the same direction as economy-wide changes in U.S. Government security holdings; between February, 1946, and the end of 1960, "the maturity structure of the marketable debt was significantly shortened."\textsuperscript{4}

A. DESCRIPTION OF CASH-SUBSTITUTES AVAILABLE IN THE POSTWAR PERIOD

Liquid financial assets which corporations have held since 1947 as alternatives to cash will be described under


\textsuperscript{2}This monthly series beginning with data for June 30, 1960, also includes a breakdown of corporate holdings by type of security. The survey uses data from 499 corporations (later reduced to 469) and represents about one-half of total Government securities held by nonfinancial corporations.

\textsuperscript{3}Friedman and Schwartz, pp. 660-61.

the following headings: (1) Government obligations; (2) Bank-related instruments, (3) Corporate-related instruments, and (4) Foreign instruments.

**Government Obligations**

Treasury bills, the most common security held by corporations, are discount obligations of the Government which are purchased below par of 100 and which mature at par in 90 to 92 days. Risk of capital loss is very slight on these bills; and their interest return, though taxable as ordinary income, is exempt from state income taxes and from intangible taxes. For most of the postwar period, these securities represent the ultimate in safety, marketability, and liquidity for corporations.

Tax anticipation bills or certificates mature a few days after tax dates but can be submitted for the payment of Federal income taxes with full interest paid to the date of maturity. These are ideal for investing tax accrual funds because there is no market risk at the tax date and the yield is improved because of extra days' interest.

Certificates of indebtedness are subject to a greater degree of principal risk because of their longer maturity—up to one year. This is also true of Treasury notes, but both usually have "rights values" in terms of refunding issues. Interest on certificates is taxable as ordinary income; however, their effective yield may be increased because any increase in value to maturity is taxed as capital gains.
From 1941-1953 the Treasury offered Savings Notes with a two- or three-year maturity. Though not traded in the open market, these notes could be used without notice for payment of taxes two months after issue date at purchase price plus accrued interest, and they were redeemable for cash four months after issue date.

Bonds mature in six to thirty years and thus are subject to risks of capital loss. In a survey of holdings, it was noted that corporations held Series F and G Savings Bonds, which are essentially demand obligations in that they can be redeemed on thirty days' notice at reduced interest rates.¹

Tax exempt securities usually have limited marketability compared to Government bonds and their longer maturities make them subject to capital loss. However, three types are commonly used by corporations for short-term investments: (1) short-term state and municipality securities issued in anticipation of taxes or in anticipation of proceeds from long-term bond financing, (2) early maturities of serial bond issues, and (3) instruments of local housing authorities. The latter (PHA's) are supported by the credit of the Public Housing Administration and have a high degree of marketability.

Federal Agency securities, though not guaranteed by

the Government, are often considered as safe as T bills to
corporations. Their yield is usually higher than that on T
bills and some issues are very marketable. Agencies which
issue bonds and notes include the Federal Land Bank, Fed-
eral Home Loan Bank, Banks for Cooperatives, Federal
Credit Bank; some of the Agency issues, such as Federal
Intermediate Credit Debentures, have a high degree of mar-
etability and can be sold in reasonable amounts as easily
as T bills.¹

Bank-Related Instruments

Time deposits have the advantage of liquidity and re-
quire little management. Their interest returns rose con-
siderably during postwar years and at times exceeded inter-
est rates on T bills.

Bankers' acceptances, created when a bank accepts and
thereby guarantees payment of a trade credit, are marketable
and virtually riskless.

Time certificates of deposit² were issued for many
years and, though legally negotiable, were never readily
marketable. Early in 1961, banks began issuing negotiable
time certificates of deposit which were interest paying
commercial deposits that could be traded like ordinary

¹Sprowls, p. 18.
²For an excellent survey of the growth of CD's see:
Robert Lindsay, "Negotiable Time Certificates of Deposit,"
Federal Reserve Bulletin, 49 (April, 1963), 458-68.
securities. They had a higher yield than T-bills and offered an additional profit to those investors who, after purchasing them, later sold them in the secondary market.\footnote{Jean Ross-Skinner, "The Profitable Art of Handling Corporate Cash," \textit{Dun's Review}, 79 (May, 1962), 41.} An active market in CD's developed and they became an important money market instrument.\footnote{In December, 1962, business firms were the original purchasers of about seventy per cent of the total volume of CD's outstanding. (Lindsay, pp. 463-64.)} CD's had the additional feature of availability with the exact maturity date desired, and these instruments were especially attractive to corporations when yields of CD's exceeded those of T-bills.

To avoid rate limitations imposed by Regulation Q, corporations found that they can operate through both U.S. and foreign banks to place dollar-time deposits in foreign countries. With these deposits, firms enjoy the benefits of higher foreign interest rates; and firms avoid the expense of hedging against currency fluctuations because the deposits are denominated in dollars. European banks and Canadian banks have been the recipients of sizable dollar deposits.\footnote{For an interesting description of the current uses of Euro-Dollars see: Oscar L. Altman, "Euro-Dollars: Some Further Comments," \textit{International Monetary Fund Staff Papers}, 12 (March, 1965), 1-14.}

\textbf{Corporate-Related Instruments}

Corporations seldom invest in corporate bonds other
than their own; the exception is an occasional purchase of bonds nearing maturity. Corporations often purchase their own bonds to anticipate sinking fund requirements and to retire outstanding debt with cash balances. Preferred stock may offer the corporation a high yield and a tax rate advantage. On the other hand, bonds and stocks have limited marketability and are subject to risks of default and risks due to price fluctuations.

Another investment medium, seldom used by corporations for short-term investments, is issues of railroad equipment trust certificates. Short-term issues are limited in supply and no secondary market exists in which longer term securities can be purchased as they reach the one year maturity range; also, a transfer tax causes them to be locked-in until maturity.

Commercial paper ranges in maturity from thirty days to nine months, and yields are somewhat higher than yields on similar maturities of T bills. No secondary market exists, though issuing companies traditionally repurchase their notes at the same rate of discount for which they were sold, when liquidation is necessary prior to maturity. Although the notes of individual issues have stated maturities and limited availability, the buyer is faced with a diverse group of commercial papers of many companies and a

wide range of maturities. Many companies hold large amounts of finance paper except at year-end when they switch these securities to T bills for tax benefits and for "window dressing" (arranging the balance sheet to impress stockholders). ¹

Foreign Instruments

The United Kingdom and Canada issue treasury bills—similar to U.S. Treasury bills—whose yields often rise substantially above those on U.S. bills. U.S. corporations often invest in foreign T bills when the yield on foreign bills significantly exceeds the yield on U.S. bills, so that corporations can earn a higher yield even after the cost of hedging against currency fluctuation in the forward market. ²

U.S. corporations invested in commercial paper issued by Canadian corporations, because at times the yields were far above U.S. yields. In May, 1962, for example, hedged 91 to 180 day Canadian finance company paper yielded about 3.35%, ³ while the yield on similar U.S. finance company paper was 2.95%. ⁴

¹Sprouls, p. 19.

²In some portfolios, foreign government securities appear which may be statutory holdings of companies operating abroad and may not be subject to normal investment decisions. Sometimes holdings of foreign securities may essentially be a deposit with foreign governments or foreign companies to guarantee specific performance of contractual obligations. (Jacobs, p. 344.)


⁴Federal Reserve Bulletin, 49 (May, 1963), 672.
B. DEVELOPMENTS IN CASH-SUBSTITUTES WHICH ALLOWED CORPORATE MONEY/TOTAL ASSETS TO DECLINE

In the previous chapter using Flow of Funds data, it was shown that holdings of cash-substitutes by the corporate sector increased substantially in the postwar period. These cash-substitutes exhibited qualitative improvements as well as quantitative growth. Improvements in qualities such as profitability, safety, marketability, and liquidity enhanced the abilities of the instruments to function as substitutes for money. It is this quantitative and qualitative growth in the cash-substitutes which allowed corporations to decrease their money holdings/total assets and money holdings/sales.

The profitability of investing excess cash has increased over the postwar period because of rising interest rates. Profitability has also increased because of the development of trading techniques which increased the yield to maturity. For example, total profits from short-term investments such as Government securities were increased by "playing the yield curve"; this involved selling securities shortly before they reached maturity and earning a capital gain as well as the interest return. Companies with excess short-term funds earned a yield higher than that on T bills through link-financing; the bank, linking borrower and lender, guaranteed the loan.

The literature suggests that financial officers became increasingly aware of the profitability of investing in
short-term marketable financial assets other than Government issues and of wise trading of the Government securities.\textsuperscript{1} Chart III-A shows that the rate of increase in holdings of cash-substitutes other than Government issues exceeds the rate of increase in corporate holdings of Government securities and of cash. It is recognized that changes in the investment practices of corporations can affect the relative rates of growth of the various sectors of the money market and can have an impact on other sectors of the economy.\textsuperscript{2}

Corporate holdings of cash-substitutes tended to display the quality of safety to a large extent. The fact that the major part of corporate financial assets was held in

\textsuperscript{1}For example, Donald Jacobs compares the marketable security portfolio of 100 of the largest nonfinancial corporations for the years 1951, 1954, and 1957. He notes a trend toward investment in non-Treasury issues, especially important after 1954. He explains this behavior as caused by higher yields on non-Treasury issues. He thinks corporation finance officers believe the yield differential of non-Treasury issues is not entirely offset by increased risk or loss of liquidity. He attributes this change in their investment attitude to the increased financial sophistication of the financial officers and to the efforts of the sellers of the non-Treasury issues. Jacobs, pp. 341-52.

See also: Ross-Skinner, p. 39.

\textsuperscript{2}For example, it was found by Selden that when corporations increased their holdings of commercial paper, funds tended to be withdrawn from large metropolitan banks and converted into commercial paper holdings. The finance companies used these funds to acquire consumer-installment contracts all over the country and thus dispersed funds to smaller banks and away from larger metropolitan banks. Selden noted that nonfinancial corporations now hold over half of all outstanding commercial paper. See: Richard T. Selden, Trends and Cycles in the Commercial Paper Market (New York: National Bureau of Economic Research, Inc., 1963), pp. 84-88.
short-term issues\textsuperscript{1} made the risk of capital loss small, and the tendency of corporations to shift holdings toward shorter term cash-substitutes\textsuperscript{2} during the postwar period decreased the risk of capital loss. Corporate money-substitute holdings in Government securities were free from risk of default, and holdings of Government agency securities were generally believed to be safe from default risk\textsuperscript{3} even though no Government guarantee was associated with them. Corporations shied away from holdings of common stocks in the postwar period.\textsuperscript{4}

Innovations, such as repurchase agreements, resulted in greater liquidity for all types of money-substitutes. The corporation could insure its ability to obtain cash from cash-substitutes on the date it was needed by specifying an exact date for repurchase when the cash-substitutes were originally purchased. Liquidity was increased even more in those repurchase agreements in which the dealer consented to repurchase securities immediately upon the corporation's request.\textsuperscript{5}

\textsuperscript{1}This was illustrated in studies of marketable securities held by samples of corporations. See: Sprowls, Table II, p. 12, and Jacobs, p. 343.

\textsuperscript{2}Friedman and Schwartz, pp. 660-61.


\textsuperscript{4}Common stocks, bonds, and call-loans represented a significant part of financial assets in corporate portfolios during the 1920's and 1930's. (See: Lutz, p. 56.)

\textsuperscript{5}Lasher, p. 52.
The gradual corporate shifting toward holdings of shorter term instruments increased the liquidity of the corporate portfolio of cash-substitutes. The liquidity of a cash-substitute and its suitability as a repository for contingency and operating funds were also affected by general economic trends. We shall argue later that in the postwar period, business expectations were increasingly optimistic about the Government's ability to avoid recessions and to bring about price stability. Since prices were relatively stable after 1951, and the period was free from major depression, it could be argued that the increase in corporate preferences for holdings of cash-substitutes relative to holdings of cash indicates that the liquidity of the cash-substitutes did not decline in the estimation of corporations.

An example of increased marketability in cash-substitutes was strikingly presented by time certificates of deposit. Although CD's were always legally negotiable, they became highly marketable in early 1961 when New York City banks offered them in marketable form and a securities firm announced it would handle them in open trading. Other banks and dealers quickly joined in and an active market developed in CD's.¹

CD's became even more marketable when the number of denominations was increased. Originally, they were issued

¹Lindsay, p. 458.
in denominations of one million dollars or more. As the market broadened and as a wider spectrum of corporate purchasers became interested, more CD's in smaller denominations became increasingly marketable.¹

In the postwar period, there existed a wide variety of cash-substitutes whose flexibility allowed corporations to hold financial assets tailored to their specific needs. For example, cash-substitutes could be obtained whose maturity exactly matched the date funds were needed for payments such as taxes, dividends, real investments, etc.

Cash-substitutes, when purchased to carry out future transactions, reduced the need for cash holding. The qualities of liquidity, marketability, and safety which the cash-substitutes possessed allowed the corporations to adjust to cash needs by switching in and out of these money-substitutes. The cash-substitutes, acting as the medium of adjustment, allowed corporations to hold less cash for a given volume of transactions. Corporate cash holdings could remain relatively stable while adjustments to cash needs occurred in the money-substitutes. We argue that the quantitative and qualitative growth of cash-substitutes allowed the firms to function using less cash at every interest rate and altered corporate schedules of the demand for money accordingly.

¹Ibid., p. 459.
C. USE OF CASH-SUBSTITUTES AS THE MEDIUM OF ADJUSTMENT TO CASH NEEDS

The discussion is confined to liquid financial assets because balance sheet data for manufacturing corporations list only cash and Government securities. The behavior of Government securities is analyzed to determine their role as the medium through which adjustments to cash needs are made. We fully recognize that adjustments to the demand for money are accomplished through the medium of all cash-substitutes, but Government securities represent the best single example of a cash-substitute in the portfolios of manufacturing corporations.

Behavior Which the Hypothesis Implies

Our hypothesis is that corporate holdings of cash are a relatively stable, though declining, part of total assets and this stability is achieved because firms use cash-substitutes as a medium of adjustment to cash demands. This suggests that financial officers have some target ratio of cash/total assets which is needed for transactions. Cash inflows above the target level are diverted into securities. Liquidity needs, when cash falls below the optimum, are satisfied by disinvestment of holdings of securities.

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1FTC-SEC data include other marketable securities in the balance sheet item "Other Current Assets." It must be remembered that time deposits and some CD's are included in the cash figure.

2Hereafter, these Government issues are referred to as securities throughout this section.
It is expected that corporate behavior during contraction period would differ from that during expansion. In the early expansion period, cash inflows typically exceed the target transactions demand for money and excess cash is invested in securities. Corporate motivations for such investments differ and within a single firm, several motives may guide these investments. Part of the securities may represent temporarily idle funds invested for the yield; for these, firms may not have concrete plans for their future use. Another part of the funds invested temporarily will be used for future transactions, such as taxes, dividends, and other regular operations of the firm. Part of the securities represent precautionary balances to sustain the corporation in subsequent periods of contraction or during unexpected catastrophes, and others are for specific planned investment expenditures. Clearly, some of these represent real-investment substitutes as well as cash-substitutes.

In the contraction period, aggregate corporate sales fall, cash inflow declines, and cash holdings would decline if it were not possible for the firms to adjust to cash needs by disinvestment of securities—firms sell securities before maturity or fail to reinvest them when they mature. Manufacturers react to declining sales in a number of other ways which offset the tendency toward a reduction in cash holdings; the firms curtail output, cut inventory levels, convert accounts receivable to cash, reduce investment
outlays, and postpone equipment replacements. Firms may also sell real assets which are not needed in the operations of the business.

**Investment in plant and equipment.**—Let us consider in more detail one of the reasons for corporate holdings of cash-substitutes—the temporary investment in securities for future real investment outlays. We analyze the pattern of investment in plant and equipment over certain phases of the cycle, and discuss the response to this investment pattern which we would expect firms to make in their holdings of cash-substitutes.

It is assumed that firms reduce excess capacity during contraction by postponing equipment replacement; and, in fact, expenditures for plant and equipment by manufacturers declined during each contraction after 1947. In the postwar period, the trough of the cycle of expenditures on plant and equipment lagged the trough of aggregate economic activity dated by the NBER.¹ The NBER bench marks for peaks and troughs are given in Table II.

We began with the early expansion period at the trough of expenditures on plant and equipment. The decision to invest in plant and equipment is made when the economic outlook and expected sales indicate a future increased demand for the product. In the expansion phase, expenditures on

TABLE II

POSTWAR BUSINESS CYCLE PEAKS AND TROUGHS
DATED BY THE NATIONAL BUREAU OF ECONOMIC RESEARCH

<table>
<thead>
<tr>
<th>Months</th>
<th>Quarters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak</td>
<td>Trough</td>
</tr>
<tr>
<td>Nov. 1948</td>
<td>Oct. 1949</td>
</tr>
</tbody>
</table>


plant and equipment constitute an offset to fund flows into securities. Expenditures of this sort are not instantaneous after the decision to invest is made, and the planned investment may be long-term in nature and require completion in stages. This requires planning for the sale of the added production as well as planning for the payment of the additional plant or equipment.

There are time lapses between the original decision, the initial steps in the project (at which time partial payment may be made), intermediate points, and finally, completion of the project (at which time, final payment is made). Plans to finance the project must accompany the long-run investment plans. Changes in the level of holdings of securities may reflect the expenditures on plant and equipment.¹

Individual firms channel funds into securities as payment dates approach and then convert the securities to cash as payments are made. Although payments are made in cash, our hypothesis suggests that the holdings of securities adjust to cash needs. Security holdings should rise just before payments are made, and should fall when cash payments are made and securities are disinvested in order to maintain the target cash figure.

Aggregate data for plant and equipment investment for

¹We are not discussing the sources of these external funds from capital markets and banks or investigating the details of the internal generation of the funds.
all firms include investment in projects at all stages of completion. It is expected that this aggregate figure will rise during the expansion period. (See Chart IV-A.) It must be remembered that although aggregate data of expenditures on plant and equipment reveal a characteristic pattern, not all firms are expected to behave similarly.

How will corporate holdings of securities change during the entire expansion phase if part of the securities are held for subsequent expenditures on plant and equipment? In the very early expansion period, plant and equipment expenditure is at its cyclical trough which is probably the minimum replacement level. Given some autonomous investment in plant and equipment, more investment expenditures follow as expectations of future demand become more optimistic. Monetary and fiscal policies tend to stimulate recovery. Growth forces such as population increases and technological developments also increase the expenditures for plant and equipment. In the early expansion phase, corporations tend to increase holdings of securities; and as plant and equipment expenditures increase, corporate holdings of securities also increase. Plant and equipment expenditures at this stage represent the first portion of expenditures, and expectations are that completion of investment plans will require greater cash payments. Security holdings are built up for these future planned expenditures.

As the expansion phase proceeds, expenditures for plant and equipment continue to rise, and disinvestment in
CHART IV-A

ALL MANUFACTURING CORPORATIONS

New Plant & Equipment Expenditures (Survey of Current Business)
Holdings of Cash & Government Securities (FTC-SEC)

Shaded areas represent periods of contraction - peak to trough - dated by NBER
holdings of securities occurs. The higher levels of outlays for plant and equipment are now drawing down security holdings set aside for the completion of projects. Holdings of cash and securities and expenditures on plant and equipment are shown in Chart IV-A.

The peak of the cycle of expenditures on plant and equipment typically occurs early in the contraction period. During contraction periods when expenditures on plant and equipment actually decrease, security holdings are still declining and tend to reach their lowest levels.

Postwar Evidence

Our hypothesis suggests that a disinvestment of securities occurs during contraction periods and an increase in holdings occurs during the initial expansionary period if securities are used as the medium of adjustment to cash needs. If securities perform this function, cash holdings may remain relatively stable. In the following section, the behavior of liquid financial assets in corporate portfolios is investigated using additional data.¹

Nonfinancial corporate sector.—Flow of Funds’ quarterly data are plotted in Charts IV-B and IV-C for the years 1952 through 1962. These show changes in corporate

¹In his study of large nonfinancial corporations, Heston found evidence that Government securities were used as a medium of adjustment. "It was found that securities tend to be adjusted to their equilibrium position more slowly than cash. One reason suggested for this is that securities, relative to cash, tend to bear the brunt of short-run adjustments of the firm." (Heston, p. 157.)
CHART IV-B

NET ACQUISITION OF LIQUID ASSETS

- Demand Deposits and Currency
- - - U.S. Government Securities

Corporate Nonfinancial Business Sector
Seasonally adjusted annual rates in billions of dollars
Source: Flow of Funds Accounts, 1945-62

Shaded areas represent periods of contraction - peak to trough - dated by NBER
**CHART IV-C**

**NET ACQUISITION OF TIME DEPOSITS**

Corporate Nonfinancial Business Sector

Seasonally adjusted annual rates in billions of dollars

Source: Flow of Funds Accounts, 1945-62

Shaded areas represent periods of contraction - peak to trough - dated by NBER
holdings of cash, Government securities, and time deposits. The shaded areas represent cyclical contractions as defined by the NBER. In all three contractions there is a sustained disinvestment of Government securities as our hypothesis suggests.¹ There is a net investment in time deposits during each contraction; however, this net investment is smaller than the disinvestment of securities.

Sustained disinvestment of Government securities, not related to a cyclical contraction, occurred during one period, beginning in the first quarter of 1956. Several reasons were given for this disinvestment.² The economy was on the brink of contraction in 1956 after a period of rapid expansion in 1955.³ Real GNP and industrial production decreased during the first half of 1956 and production gain over the previous year occurred only in the fourth quarter. A fall in aggregate demand caused declines in several sectors (especially automobiles and home building) and slower growth in others. Lack of investment was not a factor in the decline; in fact, manufacturing capacity was growing faster than production throughout the year. The

¹Some part of this is caused by lower interest rates on Government securities compared to interest rates on other financial investments. There is no indication that these lower interest rates have caused a general movement into cash during the contraction, however. This will be discussed in the section on interest rates.


³See: Hickman, p. 123.
corporate sector in 1956 maintained investment expenditures in spite of the drop in cash inflow, when sales and production fell. This put pressure on corporate liquidity and the adjustment to liquidity needs was accomplished by corporate disinvestment of Government securities.

Another reason for the disinvestment in Government security holdings in 1956 may be related to the impact of the acceleration of tax payments. Tax payments were unusually high in March, 1956, and borrowings for tax payments in March, 1956, exceeded any prior experience. It is consistent with our thesis that Government security holdings would react to the liquidity shortage as they did.

Manufacturing corporations.--Holdings of cash--including bank deposits--and Government securities of all manufacturing corporations (based on FTC-SEC data) are


2Other factors (listed by Ronk, pp. 480-81) which may have contributed to the liquidity shortage in 1956 are:
(1) Before March, 1956, inventories and receivables were growing; working capital had not increased proportionately, so corporations had used funds representing tax reserves to finance the increase in receivables and inventories.
(2) Extra tax payments had occurred in the latter half of 1955 as the program to accelerate tax payments increased and corporations paid taxes on 10% of current year earnings. In addition, extra taxes were paid ($300 to $400 million) due to repeal of a tax law (Section 462) relating to deductions for accrued expenses.
(3) Plant and equipment spending had been rising and exceeded internally generated funds.
(4) Some long-term financing was probably postponed by corporations in the expectation of lower interest rates.
plotted for the years 1952-62 in Chart IV-D. The shaded areas represent periods of contraction dated by the NBER. The manufacturing corporations show a severe decline in their holdings of Government securities as each trough approaches. In every case, cash holdings do not appear to go through any extreme variation during the contraction period.

The relative stability of cash and the response of cash-substitutes as the adjustment medium is illustrated in Chart IV-E for a period beginning four quarters prior to each trough and ending four quarters after each trough. The corporate holdings of cash and securities are set equal to 100% at the peak quarter and changes are shown relative to the peak. In the first two recessions, cash is relatively stable and the adjustments to liquidity needs are made via the medium of securities. In the third recession, 1961, time deposits and CD's became more important financial assets in corporate portfolios and obviously performed much of the adjustment function after the trough. The inclusion of CD's and time deposits with cash, in FTC-SEC data, must explain the larger fluctuations in the cash figure for the last recession. CD's, because of their higher yield, perhaps became a better cash-substitute than securities in 1961-62.
CHART IV-D

ACTUAL HOLDINGS OF CASH AND GOVERNMENT SECURITIES - ALL MANUFACTURING CORPORATIONS

in billions of dollars

Source: Quarterly Financial Report

Shaded areas represent contraction periods dated by NBER

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Cash

Government securities
CHART IV-E

CHANGES IN CASH AND GOVERNMENT SECURITIES FOUR QUARTERS BEFORE AND AFTER THE TROUGH

Peak quarter = 100%

Source: Quarterly Financial Report

1954 III Trough = 0

1958 II Trough = 0

1961 I Trough = 0
II. RISING INTEREST RATES

A. POSTWAR TREND

Interest rates on cash-substitutes have risen over the postwar period; this trend in Government securities is depicted in Chart IV-F. Higher rates produced the incentive for corporations to invest excess cash and provided the impetus for corporations to avoid holding idle cash balances. Higher interest rates implied both rising costs of borrowing cash as well as rising opportunity costs of holding excess cash which has been internally generated. Corporations responded to higher rates by changing the composition of their financial asset holdings; that is, they have reduced the percentage of their holdings of cash and increased the percentage of their holdings in cash-substitutes.¹

Corporate holdings of Government securities were primarily in issues which matured within one year, and the postwar trend has been toward holdings of shorter-term issues.² It is believed that part of this movement was caused by the structure of rates.³

Tighter monetary policy in the postwar period is evidenced by rising interest rates and by credit rationing.


²Friedman and Schwartz, pp. 660-61.

³Chart IV-F shows rates on several maturities of U.S. Government issues, and it can be seen that at times long-term rates were no higher than short-term rates. Thus, short-term securities were more attractive for corporations in that their yield was slightly less than the yield on long-term securities, and the risk of capital loss was much smaller in the short-term investments.
CHART IV-F
INTEREST RATES ON U.S. GOVERNMENT SECURITIES (ANNUAL AVERAGE)
Sources: Federal Reserve Bulletin, Treasury Bulletin

- Treasury Bonds
- 3 - 5 Year Taxable Issues
- 9 - 12 month issues
- 3 month bills (new)
Higher interest raises the cost of money, whereas credit rationing limits the total amount of credit given at the existing interest rate. The lenders limit the amount of credit by some arbitrary standard of the credit-worthiness of potential borrowers. At high interest rates, potential borrowers may still seek credit, while a more forceful restraint on the supply of credit may be imposed by credit rationing.\footnote{For the development of the theory of the effect of interest rates on the supply side of credit and a review of prewar literature on credit availability, see: Robert V. Rosa, "Interest Rates and the Central Bank," Money, Trade, and Economic Growth (New York: The MacMillan Co., 1951), pp. 273-76.} This is discussed in the literature under the general topic of "credit availability" which is described as "the complex of noninterest-rate lending terms prevailing in the market at any time."\footnote{Jack Guttentag, "Credit Availability, Interest Rates, and Monetary Policy," Southern Economic Journal, 26 (January, 1960), 222. He emphasizes that changes in availability originate on the demand side, while other articles equate availability with supply of credit. For example, see: John Karsken, "Lenders Preferences, Credit Rationing, and the Effectiveness of Monetary Policy," Review of Economics and Statistics, 39 (August, 1957), 292-302.}

After the Accord, the possibility of higher interest rates was generally anticipated since the Federal Reserve was no longer committed to support the price of Government securities. The Federal Reserve was free to use its powers to promote monetary stability. It was expected that higher interest rates and generally tighter money would be used to counteract inflationary pressures.
Interest rates fluctuated in the postwar period and the corporation financial officer had to make investment decisions based on the current rate and his expectations of future rates. In the officer's investment horizon of even one year, clearly there were times when rates were so high that his expectations would logically have been slanted toward a fall in rates. However, for the postwar period as a whole, the trend has been one of rising interest rates, and this has resulted in corporations holding a larger portion of financial assets in cash-substitutes.

Higher interest rates gave the incentive for firms to survey their cash needs and to utilize cash-substitutes to a greater extent. We argue that the postwar trend of tighter monetary policy resulted in modification of corporation's liquidity preference schedules—a leftward shifting of the family of schedules of the corporate demand for money.

B. EFFECTS OF MONETARY POLICY ON CORPORATE HOLDINGS OF LIQUID FINANCIAL ASSETS

We contend that monetary policy in the postwar period affected corporate holdings of liquid financial assets in several ways:

(1) The higher cost of money and generally higher interest rates after the Accord gave corporations the incentive to economize cash and to look for profitable short-term financial investments. This led to a decline in relative holdings of cash and to an increase in relative
holdings of cash-substitutes in corporate portfolios. This was discussed above and requires no further analysis.

(2) Monetary policy, by causing yield differentials, affected the composition of corporate liquid financial assets other than cash.

(3) Monetary policy, working through the interest rate structure, affected the maturity pattern of Government security holdings in corporate portfolios.

Digression

In this section, corporate reaction to monetary policy will be confined to behavior of the three liquid financial assets. We shall digress from the trend analysis and consider (a) changes in liquid financial asset holdings during periods of ease and restraint and (b) changes in corporate holdings of Government securities compared to changes in holdings by commercial banks and the monetary authorities. The digression is followed by an analysis of the effects of monetary policy on the composition of liquid financial assets and on the maturity pattern of Government securities in corporate portfolios.

Corporate holdings of liquid financial assets during ease and restraint.--Chart IV-B indicates that a very particular pattern in corporate holdings of Government securities emerged during the contraction periods; a period of sustained disinvestment occurred as each trough approached. Following the first two troughs, a period of net investment in Government securities occurred for at least
four quarters during the expansion period. However, the expansion period after the third contraction (1961) did not show this behavior. This was an unusual period in many ways; for example, during this period, the economy was plagued with a lagging growth rate and chronic unemployment. The Federal Reserve's stated policy of ease was somewhat thwarted by the need to keep short-run interest rates high in an attempt to alleviate the balance of payments problem which was being aggravated by capital outflows. The Federal Reserve's policy of ease attempted to keep long-term rates low in order to encourage investment and growth, while keeping short-term rates high to prevent short-term capital outflows from the U.S.

An examination of the net acquisition of Government securities during the periods of monetary ease and restraint reveals no clear pattern of behavior.¹ (See Chart IV-G.) This does not come as a surprise. For one thing, the policy of monetary ease which exists over any interval is not a uniform policy. The intensity of ease varies from very moderate to very strenuous. The interval of ease usually includes most of the contraction period (though the timing of monetary policy varies in each contraction); and thus, during that period of ease, net disinvestment of securities occurs. In the postwar era, the periods of ease in two cases extend beyond the cyclical trough and net

¹For a discussion of the method used to determine periods of monetary ease and restraint, see Appendix B.
CHART IV-G
CORPORATE NONFINANCIAL BUSINESS SECTOR
NET ACQUISITION OF U.S. GOVERNMENT SECURITIES AND DEMAND DEPOSITS AND CURRENCY

---------- Net acquisition of demand deposits and currency
........... Net acquisition of U.S. Government securities
Seasonally adjusted annual rates in billions of dollars
Shaded areas: red = monetary restraint
           green = monetary ease
Source: Flow of Funds Accounts, 1945-62
security investment occurs. As a result, no particular pattern of investment is evident during an entire ease period or during an entire restraint period.

Chart IV-G reveals that no particular pattern of investment emerged during ease or restraint, in corporate holdings of demand deposits and currency. However, a net increase in corporate holdings of time deposits tended to occur in periods of ease while disinvestment occurred in periods of restraint. (See Chart IV-L.) This behavior, probably related to interest rate differentials, is discussed later.

Changes in corporate holdings of Government securities compared to changes in holdings by commercial banks and the monetary authorities.--Corporate holdings of securities do not show a consistent pattern in ease or in restraint. We investigate the possibility that corporate holdings react to open market purchases and sales by the monetary authorities and to related purchases and sales by commercial banks.

The net acquisitions of securities by the monetary authorities and by commercial banks are combined because we believe the activities of banks with respect to security holdings tend to fluctuate with policies of ease and restraint. The most important instrument of credit control is the open market operations of the Federal Reserve which are carried out through the medium of Government securities. These operations by the Federal Reserve affect the reserve
positions of member banks which in turn affect the availability and cost of credit.

In ease, the Federal Reserve buys securities and/or lowers discount rates and reserve requirements. Banks find themselves with excess reserves and attempt to expand loans. To the extent that no additional loans are demanded, banks invest in short-term Government securities rather than hold idle cash.

In periods of restraint, the Federal Reserve sells securities and/or raises discount rates and reserve requirements in an attempt to reduce the liquidity of the public. As banks find themselves short of cash reserves, they sell Government securities from their portfolio to restore the proper reserve ratio.¹

By combining the net acquisitions of securities by the commercial banks and the monetary authorities, we find an estimate of the total monetary effects which are brought about through the Government security market. In Chart IV-H, the net acquisition of Government securities by the banks and monetary authorities is shown during periods of

¹The banks sell securities instead of calling in more profitable loans, and this may reduce the net expenditures of the rest of the economy to the extent that security purchases are made from funds which would otherwise be spent on consumption and investment goods. To the extent that security purchases are made from idle balances, there is no reduction in the over-all spending and liquidity of the private sector; merely a switch in asset portfolio composition occurs. The policy of restraint may be accomplished through the higher interest rates which are brought about by security sales as well as through the reduction in liquidity.
CHART IV-H

NET ACQUISITION OF U.S. GOVERNMENT SECURITIES

By: ------ Commercial banking and monetary authorities
      ----- Nonfinancial corporate business sector

Seasonally adjusted annual rates in billions of dollars
Source: Flow of Funds Accounts, 1945-62
Shaded area: red = monetary restraint
             green = monetary ease
restraint and ease. We have already seen that no clear picture emerges for corporate behavior with respect to ease or restraint. However, it is obvious that the banking sector, beginning in 1953, tends to show net acquisition of securities during ease and disinvestment of securities during restraint.

If the business sector's acquisitions of securities in every period changed in an exactly opposite direction to those of the monetary sector, we would have a clearer picture of a reaction by corporations to monetary policy. However, the only period in which the corporate sector disinvests consistently while the banking sector invests in securities is during contraction periods. (See Chart IV-I.)

The security investment pattern of commercial banks when compared with that of corporations has some interesting implications for debt management policy. Chart IV-J indicates that the commercial banks primarily invest in securities during contraction periods and disinvest during expansion periods, with the exception of 1961 and 1962. The corporate sector typically disinvests securities during contraction periods and invests in securities in the early phase of expansion periods. (Again 1961 and 1962 are the exceptions.) If the Treasury needs a market for new security offerings in the early phase of recovery, it can probably sell securities to the corporate sector but not to the banking sector.
CHART IV-I

NET ACQUISITION OF U.S. GOVERNMENT SECURITIES

By:  Commercial banking and monetary authorities
     Nonfinancial corporate business sector

Shaded areas represent periods of contraction - peak to trough - dated by NBER

Source: Flow of Funds Accounts, 1945-62
CHART IV-J

NET ACQUISITION OF U.S. GOVERNMENT SECURITIES BY COMMERCIAL BANKS

Seasonally adjusted annual rates in billions of dollars
Shaded area represents business contractions - peak to
trough - dated by NBER
Source: Flow of Funds Accounts, 1945-62
Composition

We believe the following argument is applicable to all cash-substitutes. However, we cannot obtain comparable information about corporate evaluation of risks, yields, or the magnitude of corporate holdings of all cash-substitutes; therefore, the analysis is restricted to time deposits and securities.

As mentioned earlier, the main tool of monetary policy is open market operations which are carried out through the medium of Government securities. These policies have an immediate effect on the yield of Government securities and theoretically are quickly transmitted to other financial markets. However, the market is not perfect and disparities, which are not totally explained by differences in risk and marketability, can exist among financial asset yields. It is in this context that the wise investor can increase the total portfolio yield by watching for these discrepancies.

Chart IV-K indicates that generally the market yield on Government securities falls during contraction periods and rises during expansion periods. Monetary policy, by directly affecting the yield on securities, then influences the composition of corporate liquid financial asset holdings. If the argument were extended to all cash-substitutes, we expect the corporation to switch into other financial assets, ceteris paribus, when yields on securities are reduced and yields on other financial assets are not
immediately affected or are affected to a lesser degree.

The following example illustrates the point above.

Chart IV-X shows the yield on three-month Treasury bills and the maximum interest rates payable on time deposits (a) payable in less than ninety days and (b) payable in ninety days to six months.\(^1\) We assume that time deposits have approximately the same risk of default to the investor as government securities, which are virtually riskless. A comparison of Chart IV-L, showing net acquisition of time deposits by the business sector, with Chart IV-X reveals that positive acquisition of time deposits occurred during periods when the return on time deposits (payable in less than ninety days) exceeded the yield on Government securities in 1954 and 1958. From 1960-III through 1962, the Federal Reserve was also pursuing a policy of ease; the bill rate fell below the yield on time deposits payable in ninety days to six months, although not below those payable in less than ninety days. Two potential explanations of the net acquisition of time deposits by corporations which occurred were: the relatively higher yield on time deposits (payable in ninety days or more) and a changing corporate evaluation of

\(^1\) Time deposits payable in ninety days to six months are included because just as it is likely that purchasers of three-month bills invest with the intention of rolling them over upon maturity if the cash is not needed for current operations, it is also likely that the corporations who hold time deposits may do so with an eye to investments for ninety to one hundred days yielding a rate of two to two and one-half per cent rather than deposits for eighty-nine days yielding only one per cent.
CHART IV-L
CORPORATE NONFINANCIAL BUSINESS SECTOR
NET ACQUISITION OF TIME DEPOSITS

Seasonally adjusted annual rates in billions of dollars
Shaded areas: red = monetary restraint
green = monetary ease
Source: Flow of Funds Accounts, 1945-62
the risks of capital loss on Government securities.\textsuperscript{1}

Even if complete information on yields and magnitude of corporate holdings were available, we could not measure the risk which corporation investors attach to other cash-substitutes. However, we believe relative changes in the returns on cash-substitutes cause re-appraisal of the yield and the risk of each, which may result in portfolio switches.

In this one example, it is clear that the business sector switched into time deposits when their interest return was more attractive than the yield on Treasury bills. This interest rate differential which affected the composition of corporate liquid financial assets was the direct result of monetary policy.

\textbf{Maturity Structure}

The only available data about the maturity structure of Government securities held by corporations are found in the "Treasury Survey of Ownership"\textsuperscript{2} published in \textit{Treasury Bulletins}. Since the number of corporations surveyed varies from month to month, we shall look at percentage holdings; these are plotted in Chart IV-M. Interest rates on approximately similar maturity classes are plotted in Chart IV-M.

\textsuperscript{1}The Federal Reserve was pursuing a policy of ease although not allowing short-term interest rates to fall. This was a period of uncertainty and business firms could have logically expected bill rates to rise at any time if the Federal Reserve decided to take more drastic steps to counteract adverse capital flows.

\textsuperscript{2}See footnotes 1 and 2, p. 75.
CHART IV-M

U.S. GOVERNMENT MARKETABLE SECURITIES HELD BY CORPORATIONS:
PERCENTAGE BY MATURITY CLASSES

Monthly

Source: Treasury Bulletin

WITHIN ONE YEAR

%
CHART IV-N

MONEY MARKET RATES - U.S. GOVERNMENT SECURITIES
Source: Federal Reserve Bulletins

- Bonds - 10 years or more
- 3 - 5 year notes and bonds
- 3 month bills - market yield

%
Again it is emphasized that examination of ex post interest rates for an explanation of financial investment patterns is very inadequate; investment decisions are made on the basis of current rates and expectations of future rates. Looking at Chart IV-M and IV-N, we can offer a theoretical explanation of large movements in percentage holdings, but we cannot verify causes.

The series began in June, 1960, one month after the peak of the business cycle dated by NBER.\(^1\) Interest rates on three to five year issues were relatively and absolutely higher than rates on all other issues. The largest percent of the total corporate security holdings was in issues maturing within one year, but this percent was lower from June to October, 1960, than for any following period. (See Chart IV-M.) The percentage in holdings of one to five year issues was much higher at this peak than at any subsequent period. This is consistent with existing theory which states that longer term investments occur at the peak of expansion when interest rates are highest, and disinvestment for capital gains occurs later as interest rates on long-term securities fall.

In part of 1961 and all of 1962, the relative increases in rates appear to be in short-term securities. This, combined with the fact that rates on three to five year issues remained below their June, 1960, level, suggests some reason for the increase in the percentage of securities

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\(^1\)See Table II.
held in short-term issues. Policy statements indicated that short-term rates would remain high indefinitely because of the U.S. gold problem and that intermediate and long-term rates would be flexible downward in order to combat recessions and unemployment. The statistical evidence, though scant, confirms the argument that monetary policy, working through interest rates, affected the maturity structure of Government security holdings in corporate portfolios.

**Difficulty in Testing Interest Rate Theories**

Aside from the impossibility of measuring current expectations about future rates, there is no one interest rate which can be used in explaining corporation behavior. We believe the relationship of money market rates and rates of return on real capital is a significant determinant of the size of total corporate financial investments and that the comparative yields on all financial assets affect the pattern of corporate financial investments.

The costs of good portfolio management discourage corporate reactions to changes in differential yields in actual practice. Once the decision to invest in Government securities or other marketable securities is made by the corporation, the costs and efforts of continuous analysis may tend to perpetuate the status quo.

There are two reasons why it is impossible to correlate interest rates with corporation behavior in holdings of liquid assets and arrive at a meaningful result. First assuming *ex post* interest rates could explain behavior,
there would be great difficulty in knowing which rates were important to financial investors. It is difficult to know the evaluation by investors of the return on real capital compared with yields on various financial assets. It is possible that the investor also focuses on a different set of rates depending upon the time of year with respect to quarterly tax liabilities, monthly liquidity needs, and/or seasonal needs. Given this continuous flux of determinants in the investor's perspective, it would be difficult to choose appropriate rates to analyze changes in an individual company case and impossible with aggregate data.

More important than this, however, is the fact that these financial investments are not made on the basis of today's interest rates alone. The key item which cannot be quantified is expectations. Investments are made on the basis of today's interest rate and expectations about future interest rates.¹ A comparison of financial investments and interest rates in retrospect cannot reveal the influence of expectations.

¹That expectations play this important role in the real world market and even in short-term Government security investments is illustrated in the literature which complements the sophisticated trading techniques of the clever portfolio investors who "play the interest cycle" (choosing proper maturity based on correct expectations) and who "play the interest curve" (increasing the yield on T bills by selling before maturity). See: Ross-Skinner, pp. 40, 41, 109.
III. STABILITY OF THE POSTWAR ECONOMY

A. POSTWAR ECONOMIC FLUCTUATIONS

The growing confidence of the corporate sector that economic stability would be maintained may be partially responsible for the continuous decline in the percentage of their total assets held in cash. Over any given period, a corporation would need smaller cash balances if there were less fluctuations in prices, employment, and production; this would be consistent with all of the motives for holding cash. Factors in the postwar economy which tended to increase stability are discussed along with those changes in institutions and attitudes which fostered confidence on the part of corporations.

Absence of Serious Depression

One major criterion of stability is the absence of severe cyclical contraction, and in the postwar period no serious depression occurred. In one study, using NBER data beginning with 1866, it was found that the postwar period was the longest period free from major contraction.¹

Comparison of postwar and prewar cycles.—In the postwar period (1947-62) four cyclical contractions occurred. Hickman, in comparing business cycles from 1854 to 1958, found that the first three postwar contractions were of shorter duration than the average duration of all previous contractions (and even of all minor contractions alone).

The fourth contraction was the mildest and shortest of the
postwar contractions. Hickman also found that the first
three postwar expansions were of longer duration than the
average expansion for the prewar period. Another interest-
ing contrast was that all the long prewar expansions during
peacetime ended in severe contractions, but the long post-
war expansions ended in mild contractions.¹

Price Movements

The dominant influences in the postwar period were
toward expansion and inflation. Prices rose during each
expansion and fell slightly during contractions.

Looking at Chart IV-C, one sees the large price rise
from 1947-49, which is generally attributed to substantial
liquidity built up during the war and to intense deferred
demand for goods caused by wartime shortages. The rapid
inflation from 1950 to 1951 was caused by the Korean War.
Memories of wartime shortages set off a buying wave which
increased prices and income velocity. The price decline
which followed, from 1951 to 1953, was related to the
decreased demand following the Korean War buying wave and
to the decreased demand resulting from the decline in the
growth of money income partly induced by such factors as
tax increases and credit controls. It is believed that the
administrative controls on prices, wages, and critical mate-
rials helped control inflationary pressures between 1951.

¹Hickman, pp. 23-27.
CHART IV-0
WHOLESALE PRICE INDEX - ALL COMMODITIES
(1947-49 = 100)

Source: Survey of Current Business
and 1953. The next period of expansion, trough to peak, dated by NBER from August, 1954, to July, 1957, was accompanied by the third postwar price inflation. If we began with data for 1945, we would find that each postwar price rise was smaller in magnitude than the preceding one, however.2

The expected behavior is for prices to rise during expansion and fall during contraction.3 Looking at Chart IV-0, we see that prices fell during the 1948-49 contraction but remained relatively stable during the contractions of 1953-54, 1957-58, and 1960-61. Part of this may be explained by the arguments that wages were less sensitive to decreases in labor demand and that businessmen assumed that wages would not fall and therefore prices of manufactured goods would not fall. This belief by businessmen would prevent postponement of purchases in anticipation of future price declines and would be interrelated with the mildness of postwar contractions. Business contractions tend to be shorter when the trend of prices is rising.4

Four important factors influenced the general postwar

1Hickman, pp. 379-81.

2For a detailed description of underlying forces causing price changes in the postwar period, see: Hickman, pp. 362-414.

3For historical evidence, see: Hickman, pp. 407-8.

price level: two of these, increased agricultural and increased industrial productivity, significantly reduced upward pressures on consumer and wholesale prices. A third factor, the rapid increase in prices paid for services by consumers, tended to raise the general retail price level. A fourth factor helps explain the failure of prices to fall during contractions; i.e., prices of semi-processed and highly processed commodities responded to upward pressures but not to downward ones.¹

The tendency toward greater price stability in the postwar period was assisted by other forces. On the one hand, both the business sector and Government were of the opinion that general wage-price deflations were neither necessary nor desirable. Activities of the fiscal and monetary authorities reflected this attitude. Businessmen expected there would not be a severe price decline caused by depression and that no attempt would be made by the Government to restore the prewar price level. Business and public actions based on this new attitude were probably responsible for part of the mildness of postwar contractions.²

On the other hand, the Government expressed intent to use its power to counteract price rises:


²For comments on business expectations during the postwar period see: Hickman, (Index) p. 419 and especially pp. 173-76; 401-3.
A major approach to bringing real purchasing power of consumers into balance with productive capacity this year must be through reduced prices.¹

After the Accord in 1951, the Federal Reserve was more capable of effectively using monetary policy to fight inflationary or deflationary pressure in the economy. This should have added to businessmen's expectations that the authorities would counteract destabilizing tendencies. The increasing recognition by businessmen that the Federal Reserve and the Government not only could offset destabilizing forces but were committed to such a policy contributed to the relative decline of cash holding by the business sector. Greater economic stability would be expected to reduce the demand for transactions and precautionary cash balances. Transactions needs were more predictable and optimum balances were easier to achieve. The likelihood of greater price stability reduced the risk of capital loss on cash-substitutes and thus increased their appeal to financial officers. Greater stability in the economy allowed corporations to predict with greater accuracy the amount and timing of future cash needs. This allowed firms to invest more efficiently in cash-substitutes and to plan for the utilization of these cash-substitutes in adjusting to expected cash needs.

Role of Built-in Stabilizers

The three most important automatic stabilizers in the postwar economy were unemployment compensation, individual income taxes, and corporation income taxes. Before World War II, these government automatic stabilizers were unimportant.

From the empirical results of both Lewis\(^1\) and Hickman,\(^2\) it was concluded that the built-in stabilizers added to the stability of the postwar economy. In addition, such discretionary measures as increasing unemployment benefits and reducing tax rates during recessions reinforced the tendency toward stability.

Business firms have grown more reliant on the effectiveness of the built-in stabilizers and have grown more confident in the belief that the government will take discretionary measures to maintain stability. In the postwar period, cash holding for precautionary motives became less necessary, and transactions cash could be more stable because of smaller economic fluctuations. Reliance on cash-substitutes was greater in an environment of greater stability.

Better Informed Business Firms and Government

The development of Keynesian economics in the 1930's.

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\(^2\) Hickman, pp. 221-32.
brought into focus the use of fiscal policy. In the postwar period, the knowledge of countercyclical tools was increased and attitudes about their use were improved. After the Accord, monetary policy and fiscal policy were used to achieve the goals of stability, full employment, and growth.

In the postwar period, the information flow about current economic developments was vastly enriched. Technological improvements increased the amount of data available as well as decreased the lag in time required to receive the data. This gave policy-makers an earlier indication when changes occurred and corrective policy was needed.

Businessmen also gained from the developments in information processing and the technological developments to aid them in using data. These improvements increased the firm's ability to forecast cash needs and timing of needs and thus reduced the amount of money which firms held for any given level of transactions. This greater availability and refined processing of information also allowed more efficient investment in cash-substitutes and, therefore, resulted in greater profits for the firm.

B. ROLE OF GOVERNMENT IN MAINTAINING ECONOMIC STABILITY

The depression of the 1930's inspired reforms which added to the stability of the postwar period and which propagated the attitude that the Government would not tolerate a depression again. Institutions were changed, countercyclical techniques were developed, and legislation was
passed to implement more reforms.

Financial Reform

The Securities Exchange Act, legislation to control public utility issues, and restrictions on margin trading were intended to restrain speculation in the stock market during expansions and thus to prevent their cumulative adverse effects during contractions. In the late 1930's, reforms were begun in residential mortgage finance. Postwar legislation connected with the insurance and guarantee programs of the FHA and VA diminished the potential for additional deflation during contraction periods. This insurance, to protect the assets of financial institutions which held residential mortgages, was designed to prevent the institutions from reacting in a manner which would reinforce a deflationary trend. Banking failures in the 1930's led to banking reforms and to creation of safeguards such as the FDIC. Many of these reforms were designed to prevent liquidity crises during contractions while others were designed to increase the discretionary powers of the monetary authorities.¹

Employment Act of 1946

With the passage of the Employment Act, the Government was committed to achieving full employment and prosperity.²

¹Hickman, pp. 177-78.

²The purpose of the Act was: (1) to achieve better economic policy coordination within the Government and between private enterprise and Government, (2) to prevent depression, and (3) to maintain a growing economy. (Economic Report, 1953, pp. 10-11.)
The Government possessed the techniques as well as the determination to prevent another depression. As President Truman stated:

I reject, and I know the American people reject, the notion that we must have another depression. I am not referring to minor detours and bumps in the road ahead--these we know we shall have. I am referring to economic collapse and stagnation such as started in 1929. This need not happen again, and must not happen again.¹

It was recognized that the Government must keep an atmosphere which inspired confidence in future stability and which encouraged business investment. It was evident that the Government must exert caution in its own normal activities, because the magnitude of these activities were potentially destabilizing as well as stabilizing. Clearly, the Government in the postwar period was more aware of its role as a stabilizing factor and assumed greater responsibility for stability.²

We are arguing, then, that Government attitudes and actions affected confidence, and the over-all result was a climate of more favorable expectations in the postwar period. Perhaps the expectation that appropriate actions would be taken could, in itself, minimize fluctuations.

Moreover, the increasing stability and expectations of future stability contributed toward the decrease in the ratio of cash holdings to total assets of corporations.


²For example, see: *Economic Report*, 1950, pp. 7-8; 1954, p. iv; and 1957, p. iii.
Decreased uncertainty gradually reduced the relative transactions and precautionary balances in corporate portfolios. Trade credit and cash-substitutes increased as a proportion of total assets of corporations, partly in response to the increased stability.

IV. EFFORTS BY CORPORATIONS TO IMPROVE CASH UTILIZATION

The literature in the postwar period indicates a growing awareness by corporate financial officers of the earnings which result from efficient cash management—earnings in excess of those derived directly from the main business of the corporation. In this section, reasons for the better utilization of cash as well as methods used in the postwar period are discussed.

A. REASONS FOR BETTER UTILIZATION OF CASH

Incentives for more efficient utilization of cash by corporations stemmed from a variety of factors. Rising short-term interest rates and an expansion of safe short-term cash-substitutes available to corporations were two key factors. There was either a potential profit ignored or an absolute loss sustained if the corporation indulged in sloppy cash handling. Firms were induced to learn from and to emulate successful competitors because throughout this period there was a growing sophistication in financial analysis and financial management.

Among the essential developments in efficient cash utilization were improved methods of accurate cash
forecasting. Through the use of the cash budget the corporation could project weekly and daily cash needs; this allowed orderly cash handling as well as systematic investment in cash-substitutes.

A corollary to the argument that corporations have utilized cash more efficiently is the argument that financial officers have accepted a smaller target cash figure (relative to total assets) as appropriate for the balance sheet. It is reported that corporations indulge in "window dressing," i.e., arranging the balance sheet at annual reporting dates to appeal to stockholders and potential stockholders. The cash item is assumed to be larger at reporting dates than other times during the year because financial officers believe that stockholders prefer some "safe" cash balance.

We are suggesting that financial officers have gradually reduced this cash balance in financial statements over the postwar period in the belief that smaller cash holdings and alternate holdings of cash-substitutes would be acceptable to stockholders. The financial officers have attempted to educate stockholders to accept a smaller cash/total asset ratio and to appreciate the firm's efficient utilization of cash and profitable investments in cash-substitutes. ¹

¹An increasing number of articles by financial officers of corporations stress the importance of good cash management. For example, John Shaw, "The Cost of Cash Handling and Mishandling," Control of Non-Manufacturing Costs (New York: American Management Association, Inc., 1957), pp. 38-55; and James Sheridan, "Corporate Cash Management,"
B. METHODS OF IMPROVING CASH UTILIZATION

Centralization of cash management.—Corporations reduced their cash needs by centralizing cash asset management; however, the actual cash handling functions often were not centralized. In a company with geographically decentralized operations, centralized management required cash budgets and forecasts to provide the treasurer with complete information of all cash available and of cash expected to be received and disbursed. Banks often provided this service of centralizing daily and weekly reporting of corporate cash balances held throughout the country. If the corporation had accurate cash forecasting devices, the total cash held could be reduced, and the cash held could do more work because the bank could shift the corporate funds over the country to satisfy seasonal and peak demands of each geographical sector. In cases where the corporation did not want to scrutinize accounts so closely, it could determine balances required in each sector and instruct banks to send all additional sums to the central office.

Corporations and banks developed techniques which resulted in more rapid intra-corporate transfer of funds. For example, regional banks reported by telephone or wire every morning to the company's central bank, which, in turn, reported to the corporation's treasurer the level of cash in each region. The treasurer's decision to transfer funds

could then be carried out immediately through the use of the nationwide network of teletype lines linking major banks around the country.¹

Corporations could measure the gains from the sums held as compensating balances against the opportunity costs of alternate use of the funds and costs of alternate methods of financing. The trend appears to be that larger corporations had less need for bank lines of credit and they found it more profitable to eliminate bank balances held for goodwill purposes. Centralization produced a minimal result of placing funds in a smaller number of banks, and thus economizing on service charges or costs of minimum balances.

This procedure for centralization of cash control had other indirect benefits which could increase profits. The company could better afford financial management specialists when the volume of liquid assets increased due to centralization of cash management. Control over assets could also be strengthened when the administration of bank operations, cash accounting, and internal auditing of cash operations was centralized.

**Improved credit and collection procedures.**—Other methods of efficient cash use included various attempts at speeding collection of remittances, such as improving billing procedures to eliminate delay in cash collections. More efficient intercorporate communication was necessary when shipping occurred at different locations and billing was

¹Lasher, p. 51.
centralized. Numerous techniques were used to induce cus-
tomers to take advantage of cash discounts and to avoid
delay in remittance of their debt.

Various credit and collection procedures were used to
reduce bank and mail float by decentralization of remittance
collections. One such method, the "lockbox" system, enabled
checks to be placed into collection channels as near to
their point of origin as was economically feasible.\footnote{1} Large
corporations and those with wide geographical activity could
increase utilization of cash considerably through such
methods.

Another method used to speed inflow was the freight
payment plan. In this plan, the bank automatically credited
the railroad or trucker, charged the shipper's account, and
notified each. The cost of this service was paid for by the
carrier, but he gained by the reduction in float time.\footnote{2}

Companies sometimes sent special messengers to pick up
large accounts in order to speed their flow through the
banking system. This reduced mail float and gave the corpo-
rations several days in which to use the cash.

Efforts to reduce mail and bank float have been en-
couraged by the shortening of the Federal Reserve

\footnote{1}{Customers would remit to a post office box ("lock-
box") in the area, from which the depository bank made fre-
quent withdrawals. The checks were processed for collection
immediately and photocopies were forwarded to the corpora-
tion's central office for accounting purposes.}

\footnote{2}{Lasher, p. 51.}
availability schedules from the early 1920's, when the maximum was eight days, to 1951 when the maximum deferment schedule was changed from three to two days. In addition, short cuts in the routing of checks have reduced the collection time further; various banks have had special arrangements with the Federal Reserve to accomplish this.\footnote{For a discussion of check clearing and collection practices, see: Rollin G. Thomas, \textit{Our Modern Banking and Monetary System} (New York: Prentice-Hall, Inc., 1964), pp. 124-32.} The reduction of mail float has increased the aggregate usable cash balances of payees without correspondingly decreasing those of payers.\footnote{George Garvy, \textit{Deposit Velocity and Its Significance} (New York: Federal Reserve Bank, 1959), p. 66.}

The cash position could always be improved by reducing uncollected funds. This also required improved credit and collection policies.

\textit{Disbursement procedures.--}Disbursement procedures could increase the cash available for corporate use by retaining the use of it for the maximum time. In general, this involved attempts by a corporation to delay its payments until the last possible moment without forgoing cash discounts. One well known technique was the use of drafts and guaranteed overdrafts; this enabled the company to set an exact date of payment and to instruct the bank to pay on that date instead of on demand.

Although the methods suggested here could result in
improved cash utilization for the individual corporation, it is obvious that if some of the practices became widespread the advantages would diminish. One company could try to improve its cash position by improving the timing of receipts, but its customers might also be delaying their disbursements for the same reason.

**Technological advances.**—Along with increased managerial skills in handling liquid funds have come improvements in the quality of information and in the speed in which it is available. There have been technological improvements in data processing to enable corporations to use and interpret information. All of these factors contributed to more effective planning and to more efficient use of resources.

There has been an accelerated growth in the use of computers by U.S. business firms in the postwar period.¹ Electronic gathering and processing of data have revolutionized many operations. "The use of computers in just one area--inventory control--has been judged the cause of one of the most revolutionary developments the business world has ever seen."² Electronic data processing equipment

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¹In July, 1962, there were approximately 5,000 general purpose digital computer installations operating at firms and a larger number on order. Ten years earlier only a handful were used by business firms. See: Richard K. Puder, "Local Practitioners Can Use Computers," *The Journal of Accountancy*, 114 (July, 1962), 47.

and related devices were used not only in inventory control and production scheduling, but also to keep track of all raw materials and components used in production. This equipment was used for various other jobs, such as sales forecasting, work dispatching, operations evaluation, payroll accounting, and cost accounting.¹

The development of a wide assortment of such electronic equipment and its applications to industry have mushroomed in the postwar period. Such technological developments offered increased opportunities for firms to obtain greater use from all resources including, of course, financial resources. The general enrichment in the supply of information and its speed of attainment have vastly improved the firm's abilities to plan cash needs. This has resulted in a more efficient use of cash and a more systematic use of cash-substitutes.

All of the methods described for efficient cash

¹In addition, information about the progress of any item in the production process, the number of people employed on a job, the tools and materials used, and related information for payrolls, billing, and other accounting jobs could be obtained by the use of remote data-gathering systems. In these systems, instituted in the 1950's, information was transmitted to a central computer from the remote gathering equipment. Herbert E. Klein, "Production's New Brex: Instant Data," Dun's Review and Modern Industry, 82 (October, 1963), 38-40; 110-13.

Similarly, direct data transmission systems were used to increase marketing efficiency. For example, these systems could offer direct transmission of order information to a manufacturer from its customers and thus reduce the time lag between the decision to purchase and the availability of goods. See: J. E. Clohesey, "Direct Data Hookups—New Marketing Tool," Sales Management, 92 (April 3, 1964), 28-29; 66-70.
utilization have been employed in the postwar period. We argue that the efforts by financial managers to improve the use of cash, the technological advancements, and the financial innovations have contributed to the relative decline in corporate cash holding and to the growth of corporate investment in cash-substitutes.

V. GROWTH OF TRADE CREDIT

It can be seen from Chart III-A for the corporate business sector that trade credit has grown at a greater rate than money or Government securities during the postwar period. Does this increase in trade credit represent a real increase in the actual practice of extending trade credit or is it merely associated with an increase in sales? The ratio of notes and accounts receivable\(^1\) to net sales, plotted for all manufacturing corporations in Chart IV-P, indicates that the practice of giving credit on trade accounts has grown relative to sales.

A. DEFINITIONS AND CURRENT PRACTICES

A strict economic definition of trade credit is given, and this is followed by a discussion of the period of credit, terms, and costs. We shall investigate how the extending and the receiving of trade credit would affect a

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\(^1\)This does not include receivables from the U.S. Government. The receivable item may include some consumer credit, which falls outside our strict definition of trade credit; but this figure is the only indicator of trade credit for FTC-SEC data. Data for trade credit can be obtained from *Flow of Funds Accounts*, but the associated sales figures are not given.
CHART IV-P
ALL MANUFACTURING CORPORATIONS
RATIO OF NOTES AND ACCOUNTS RECEIVABLE TO NET SALES

Source: FTC-SEC Quarterly Financial Report
firm's liquidity in theory and then offer an alternative theoretical explanation of the effects on corporations of the postwar trade credit growth.

**Definition.** Trade credit is the short-term credit extended by the supplier or manufacturer to a buyer in connection with the purchase of goods for resale. This excludes arrangements for the installment purchase of machinery and equipment which involve long-term credit. It also omits direct loans from suppliers to customers as well as any direct loans from one business to another. This also excludes consumer credit.¹

**Period of credit.** In a study by Dun & Bradstreet on selling terms, it was found that cash discounts ranged from zero to eight per cent, and maturities on net credit terms ran from seven to ninety days; although, maturities were usually thirty to sixty days.² Since credit terms are, in effect, a sales device, they vary widely over-all; however, they are somewhat more competitive in an individual industry. One very good reason for the lack of uniformity in selling terms in each industry is that the firms try to avoid any appearance of "price fixing" which might arouse


the suspicions of the Federal Government.\footnote{Trade association activity in promoting uniform selling terms resulted in prosecution by the Anti-Trust Division of the U.S. Department of Justice and the Federal Trade Commission in the 1920's and 1930's. Since 1940, the FTC has issued many "cease and desist" orders under the Federal Trade Commission Act and the Robinson-Patman Act in connection with similar terms of sale agreements. (Sanzo, p. 131.)}

The initiative for choosing credit terms and changes in terms depends on the individual firm's judgment, although certain criteria may be noted which underlie credit periods. Usually the period of credit is related to the nature of the commodity; perishables have shorter terms than durable goods. The credit risk involved is reflected in credit terms. The degree of competitiveness between suppliers is reflected in prices; naturally this competitiveness also appears in credit terms.\footnote{Seiden found that the firms in competitive industries gave the longest net period and the highest cash discounts. See: Martin H. Seiden, The Quality of Trade Credit (New York: National Bureau of Economic Research, Inc., 1964), p. 40.} The relative financial strengths of the buyer and seller may be reflected in credit terms. For example, a weak supplier can not afford extremely lenient terms, whereas a strong supplier can be expected to extend credit for a large part of the inventories of its weak customers.

Terms of credit.—Wide variations appear in credit terms and it would be impossible to discuss all the credit arrangements. The most general\footnote{Discussed by Johnson, Financial Management, pp. 237-39.} are:

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1Trade association activity in promoting uniform selling terms resulted in prosecution by the Anti-Trust Division of the U.S. Department of Justice and the Federal Trade Commission in the 1920's and 1930's. Since 1940, the FTC has issued many "cease and desist" orders under the Federal Trade Commission Act and the Robinson-Patman Act in connection with similar terms of sale agreements. (Sanzo, p. 131.)


(1) No credit—sales are made "cash on delivery" or "cash before delivery."

(2) Cash terms—this usually means the extension of some credit, perhaps seven to ten days.

(3) Ordinary terms—this may allow a cash discount if the bill is paid in ten to twenty days after the date of the invoice. If the discount is not taken, the full amount is due in thirty to sixty days.¹

Costs of trade credit.—In the long-run, the price of the goods must include all the costs of the supplier of credit including costs of the credit department, allowance for credit risk, and costs of any funds he must obtain in order to supply credit. From this should be subtracted savings which the supplier enjoys, such as reduced costs of inventory storage—warehouse costs, insurance, etc.—since the buyer holds the inventory. The costs to anyone using trade credit may be separated into (1) costs of forgoing the cash discounts and (2) over-all costs of the supplier which will be allocated over the long-run price of goods. The costs of missing the cash discount are usually relatively higher than a comparable short-term loan from a bank; however, it is often argued that trade credit is obtained by firms which could not easily get credit elsewhere. The high

¹A variation of this occurs when there are many transactions during the month between buyer and seller; the buyer may get a cash discount on all purchases made during the month if payment is made before the tenth of the following month. Trade credit at no cost is extended here for a maximum of forty days.
cost of trade credit might also be offset by another advantage: the trade creditor is not as strict as a bank and does not require collateral. The borrower's assets are unencumbered and may be used as security to get additional credit elsewhere.

B. POSTWAR EXPERIENCE

We argue that the growth of the asset trade credit has not caused an increased demand for money but has allowed corporations to hold less money. The asset trade credit may have behaved similarly to a cash-substitute in the postwar institutional framework.

In order to support this argument about the effect on demand for money, we include in the analysis with the asset, trade credit, the related liability, trade payables. The fact that corporations are net extenders of trade credit might immediately suggest that the existence of trade credit requires that corporations hold larger cash balances because an increase in receivables results in a delayed cash inflow. We contend that other factors outweigh this and that the growth of trade credit may have, in fact, reduced the corporate demand for money relative to total activity (sales).

Comparison of Assets and Liabilities

Using annual data in Chart IV-Q, one can compare total trade credit in the assets and liabilities of the corporate business sector. It is evident that the corporate sector is a net supplier of trade credit. In this respect, the business sector performs some functions of financial
CHART IV-Q
TRADE CREDIT - IN ASSETS AND LIABILITIES OF CORPORATE BUSINESS SECTOR
Annual data in billions of dollars
Source: Flow of Funds Accounts, 1945-62
institutions in the extension of credit; from Chart IV-2, it is clear that this role as a net supplier of credit has grown since 1947.

Trade credit is associated with sales of corporations in that credit is extended in conjunction with sales. Since sales show cyclical variations, credit should show similar variations. Chart IV-8 shows the corporate disinvestment of trade credit during contraction periods in a pattern somewhat similar to their disinvestment of cash-substitutes. It can easily be seen that the magnitude of changes in trade credit was larger than the size of changes in cash holdings in corporate portfolios.¹

Reasons Trade Credit May Increase Demand for Money

Trade credit as an asset may be thought of as a use of money by which the firm finances credit sales. The firm may need greater cash balances to finance this extension of trade credit because of the slower inflow of cash in receivables financing, compared to cash sales, as well as the greater risk connected with extending trade credit. On the

¹In Chart IV-R during each contraction period, a decrease of trade credit extending two or more quarters occurred in the liabilities of the corporate sector. Other decreases in trade credit liabilities occurred in 1952, 1959, and 1962 which were not associated with a contraction period, but these were not sustained decreases. Similar behavior of decreases in trade credit in the assets of the business sector occurred in the contractions of 1953-54 and 1957-58. However, in the 1960 contraction, these trade credit assets did not show an actual decrease but rather a smaller increase for four quarters (1960-II to 1961-I). The two series of trade credit assets and liabilities of corporations moved together in a cyclical fashion.
CHART IV-R

CORPORATE BUSINESS SECTOR - NET ACQUISITION OF TRADE CREDIT AND CASH

- Trade credit, asset
- Trade credit, liability
- Cash

in billions of dollars
Source: Flow of Funds Accounts, 1945-62
other hand, trade credit as a liability means a source of money which allows the average cash balance of the firm to be smaller because payments may be deferred and because there are smaller risks connected with illiquidity. Failure to pay a supplier of goods merely results in the extension of the period of trade credit; however, the similar default in the case of a short-term bank loan is disastrous to the credit rating of a firm.

Postwar situation.--Variations in credit terms were used as sales promotion devices, and in many cases this was inconsistent with sound credit management. Seiden found that the quality of trade credit "has been declining since the late 1940's" and that the quality of trade credit improved in business contractions and deteriorated during expansions. Losses in trade credit were high, both in dollar terms and as a per cent of trade credit outstanding. The trend toward a weaker quality of trade credit increased risks of business failure. A Dun & Bradstreet study showed that about nine per cent of all business failures were the result of the poor quality of trade credit extended by the failing firm. These were cases where the proximate cause of failure was trade credit. The figure would be much higher

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1 Seiden, p. 3; see also p. 93.
2 Seiden, p. 95.
3 The average loss rate in trade credit for 1947-1960 was about 1.2%. For the same period, consumer credit losses of sales finance companies were less than 1% and bank credit losses were 0.17%. (Seiden, p. 15.)
if the poor quality of trade credit as a substantial contributing factor in failure were included.\textsuperscript{1} A summary of this type indicates the added risk connected with trade credit and the need for additional precautionary cash balances when net trade credit is extended by a corporation.

The fact that the corporate business sector was a net supplier of trade credit in the postwar period suggests a need for greater cash balances. How can this be reconciled with the fact that cash was a declining portion of total assets and of financial assets? We hypothesize that trade credit exerted influences which indirectly encouraged smaller cash balances in the postwar period.

\textbf{Ways In Which Trade Credit May Reduce Demand For Money}

When a company extends trade credit, it enters a contractual agreement which gives the company some control over all factors governing receipts. The company offering credit is usually aware of the prevailing credit conditions in the industry and of the specific conditions of the firms to whom it sells. The general stability of this institutional framework, coupled with some confidence that the over-all economy would not be allowed to undergo severe fluctuations in the postwar period, made trade credit a reasonably safe financial asset. Generally, its safety depended on the discretion used in extending trade credit.

The fact that trade credit allows one payment to

\textsuperscript{1}Seiden, pp. 20-26.
cover transactions over a certain period and avoids the necessity for continuous payments should permit a firm to hold a smaller average cash balance. With this arrangement, a firm can plan to have the necessary cash balance available on the payment date by disinvestment of cash-substitutes.

To some extent, trade credit behaves as a cash-substitute. When sales are made, cash is not immediately affected but a financial asset "trade receivable" comes into existence. This trade credit is short-term—thirty to sixty days—and is very sensitive to business conditions and to risk factors; its shorter maturity may cause trade credit to be more liquid than other financial assets. The fluctuations which occur in this financial asset are greater than those in cash (see Chart IV-R), suggesting that corporate adjustments to liquidity needs may be made through the medium of trade credit as well as cash-substitutes.

Trade credit is potentially very marketable; a variety of financial specialists exists to relieve corporations who wish to extend trade credit but want to avoid holding or handling it.\(^1\) Thus a firm can readily finance its entire

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\(^1\)Factors take over the entire credit process of handling investigations, collections, and losses. Commercial finance companies or commercial banks will buy about 95% of a firm's receivables; the corporation then has immediate cash, though it is still responsible for collecting and is subject to all the risks of default. A third alternative allows the corporation to buy credit insurance. Companies specializing in this type of insurance assume the risk for losses above the expected losses from the firm's past records. It is estimated that the volume of receivables
lot of trade credit from external sources if liquidity is of prime importance.

The postwar increase in trade credit was partially caused by the corporate business sector's efforts to increase sales.\(^1\) With the increase in sales and transactions, the firm might take advantage of economies of scale in cash use and thus hold smaller average cash/sales balances.

A more important reason why cash balances relative to total assets have declined is that the emergence of trade credit has allowed more planning for cash inflows and outflows and a better synchronization of receipts and disbursements. As stated earlier, trade credit may be extended ten to twenty days and ultimate payment may still involve the "cash terms";\(^2\) the cost of trade credit is avoided, but the flexibility of increased time to match inflows and outflows is available. The timing of cash inflows can be predicted

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1. This is the reaction of the suppliers for firms affected by credit rationing as suggested by Allan H. Meltzer, "Mercantile Credit, Monetary Policy, and Size of Firms," The Review of Economics and Statistics, 42 (November, 1960), 431.

2. Over forty per cent of manufacturers and over fifty per cent of wholesalers took the cash discount when one was offered, according to a postwar study. Martin H. Seiden, Trade Credit: A Quantitative and Qualitative Analysis (unpublished Ph.D. dissertation; New York: Columbia University, 1962), p. 77, cited by Lindsay and Sametz, p. 279.
by the credit terms given at any time. If a desire to change the timing of inflows exists, minor adjustments can be made in credit policy—altering the cash discount or changing the length of the cash discount period. This planning is possible to a greater extent because of the widespread use of trade credit and the flexibility in its use; planning allows the corporation to economize on the use of cash.

We conclude, then, that the short-run nature of trade credit, its liquidity, its potential marketability, and its general acceptance in the U.S. business world allow an increase in trade credit without a necessary change in the corporate demand for money. In the postwar years, these qualities of trade credit, together with the additional planning for the timing of receipts and disbursements which trade credit provided, contributed to the relative decline in the corporate demand for money.

VI. CONCLUDING REMARKS

Probably every item in the balance sheet is related in some manner to the liquid financial asset holdings of corporations, but it is beyond the scope of this paper to investigate all balance sheet items. Corporate taxes may, in fact, influence the pattern of cash-substitute holdings as well as the level of holdings, but we do not plan to assess the effects of taxes in the postwar period. The level of the tax rate affects net profits and income and,
therefore, affects the holdings of money and money-substitutes. The level of taxable income is an important factor and anything affecting costs and expenses (such as accelerating depreciation) affects money flows and the combined holdings of money and money-substitutes. The lag between the time a tax liability is incurred and payment occurs also affects the corporate financial asset holdings. It would be extremely difficult to separate the effects of these factors in the postwar period.

It would be expected that the acceleration of tax payments between 1951 and 1959\(^1\) tended to reduce corporate holdings of liquid financial assets relative to total assets. The Treasury offered special issues to encourage corporations to hold tax liabilities in the form of Government securities. If the greater part of tax liabilities were held in cash and Government securities, the acceleration of taxes would be expected to exert some pressure on liquid financial asset holdings during the postwar period.

This chapter has described major factors which could have caused a leftward shifting of corporate liquidity preference schedules in the postwar period. We believe these factors have influenced the corporate demand for money vis-à-vis money-substitutes and, to the extent that they remain operative, will continue to affect corporate behavior.

\(^1\)For a schedule of the way in which tax payments were pushed forward, see: *Federal Tax Handbook*, (New York: Prentice Hall, Inc.) 1951, p. 3523; 1953, p. 366; 1956, p. 434.
CHAPTER V

CONCLUSIONS AND IMPLICATIONS FOR POLICY

The major questions which have been raised are: Why do corporations hold money? What factors affect their money holding behavior? How and why has the corporate demand for money changed in the postwar period?

Existing theories of the demand for money refer to the entire private sector. We have argued that a separate study of the corporate sector is warranted and a theory of the demand for money which focuses on corporate behavior is needed. It was noted that the corporate sector used its money more efficiently than other sectors in the postwar period; this fact also supported the proposition that a separate corporate sector study was needed.

An attempt has been made to extend existing theories of the demand for money and make them more applicable to corporations. We have analyzed the effects of various hypothetical events on the corporation's schedule of the demand for money, using a modified liquidity preference theory.

In the framework of this theory, we have investigated some factors which have affected corporate money holding in the postwar period. Information was obtained from annual data of the entire corporate sector and annual and quarterly
data of manufacturing corporations. Several firms were interviewed to get additional information about corporate practices.

We argued that in theory each firm could ascertain its optimum cash balance and increase its total profits by holding all liquidity needs above the optimum cash level in cash-substitutes. Factors which affect the optimum balance were discussed.

It was necessary to investigate the role of cash-substitutes held by corporations in the postwar period because our theory suggests that these cash-substitutes in corporation portfolios affected the corporate demand for money. We analyzed the corporate pattern of holdings of cash and cash-substitutes and explored the implications of that pattern for monetary and debt-management policy.

I. CONCLUSIONS

In the postwar period, cash holdings by corporations declined as a per cent of sales, total assets, and total financial assets. We hypothesized that certain changes in the economy and changes within corporations caused these cash ratios to decline.

One of the changes was the growth of cash-substitutes, many of which were tailored to appeal to the corporate investor. Improvements in the qualities of marketability, liquidity, safety, and profitability enhanced the value of these cash-substitutes to the corporation. We showed that
cash-substitutes in the portfolios of corporations increased in quantity and argued that cash-substitutes improved in quality during the postwar period. We also argued that this quantitative and qualitative growth of cash-substitutes, coupled with improvements in financial trading techniques which increased net return, caused the corporation to operate with less cash and resulted in a leftward shift in the corporation's schedule of the demand for money.

It was contended that the stability of the postwar economy was conducive to efforts to minimize cash holdings. The Government's commitments to avoid recessions and to achieve goals of full employment, price level stability, and economic growth favorably affected expectations about future economic stability. Automatic stabilizers were successful in postwar recessions in reducing the magnitude of fluctuations in economic activity. The main stabilizers were associated with Government taxing and spending in the postwar period, though these were unimportant stabilizers before World War II. It is plausible that expectations of less severe economic fluctuations resulted in a decrease in the amount of money demanded for precautionary and transactions purposes. We concluded that the improved expectations of the businessmen resulted in a reduction of the amount of money demanded.

It was argued that an increase in the practice of extending trade credit—i.e., an increase in trade credit per dollar of sales—exerted pressures which would require a
greater amount of cash to be held by the firm; while at the same time, trade credit extension exerted influences which tended to reduce the amount of cash demanded. Influences which reduced the amount of cash demanded were the greater ease of planning and greater synchronization of receipts and disbursements which trade credit allowed. Another influence which tended to reduce the amount of cash demanded by firms depended on the fact that trade credit exhibited qualities of being a pseudo cash-substitute; the potential marketability and short-term nature of trade credit in the postwar period gave firms the opportunity to treat trade credit as an asset one step removed from cash-substitutes. Although there were forces working in both directions, it was concluded that, on balance, the postwar growth in trade credit resulted in a reduction in the ratio of cash holding to sales of the corporate sector.

Efforts by business firms to improve cash utilization were reflected in the host of cash-saving techniques which were developed in the postwar period. Banks and other financial institutions shared in making innovations which resulted in better utilization of funds. An entire concept of efficiency emerged in all phases of cash management and financial analysis. Various methods developed for efficient utilization of cash were discussed under the general topics of centralization of cash management, improved credit and collection procedures, improved disbursement procedures, and technological advances.
Rising interest rates made these cash-substitutes more attractive to corporations and made the opportunity cost of holding idle cash greater. The rising postwar interest rates also provided the incentive for corporations to utilize cash more efficiently.

It was argued that, in theory, each of the factors discussed above would cause a leftward shift in the firm's schedule of demand for money, although the relative importance of each factor cannot be assessed. We saw that in the postwar period these factors occurred, and we argued that their occurrence caused the entire family of schedules of the corporate demand for money to shift leftward.

We argued that monetary policy influenced holdings of financial assets by corporations in three separate ways:

(1) First, the higher cost of money after the Accord increased the opportunity cost of holding money and provided corporations with the incentive to develop cash-saving techniques. These higher interest rates also caused corporations to invest excess funds in cash-substitutes.

(2) Monetary policy affected the composition of cash-substitute holdings of corporations. We argued that, in theory, corporations chose the appropriate mix of financial assets by considering the interest yield on each financial asset—and the expected future interest rate associated with each asset—against the risk of each asset.

Differences in yields on various short-term financial investments occurred during the postwar period. If firms
believed that the differences in yields were not offset by
differences in risk, the rational firms would switch invest-
ment funds to the higher yielding assets. By creating an
interest rate differential between financial assets, mone-
tary policy could affect the composition of these assets.

Information about corporate holdings of the various
financial assets was not available; however, data about
Government securities and time deposits were available, and
we compared holdings by firms of these two assets from
1952-62. We ignored interest rate expectations and assumed
risks on time deposits and Government securities were equal.
Corporations tended to increase investment in time deposits
when the interest rate on time deposits exceeded that of
Government securities; this occurred primarily during con-
traction periods, when disinvestment of Government securi-
ties by corporations also occurred. Part of this disinvest-
ment in securities during contraction was associated with
their use as the medium of adjustment to cash needs. How-
ever, these shifts in the composition of corporate holdings
of liquid financial assets supported our belief that mone-
tary policy, working through interest rates, affected the
corporate investment pattern.

(3) Existing theory would lead us to believe that if the
monetary authorities affect the structure of interest rates,
they also affect the maturity structure of holdings of cash-
substitutes. No appropriate information about the maturity
structure of corporate holdings of Government securities
exists prior to June, 1960. We examined corporate holdings of various maturities of Government securities between June, 1960, and December, 1962, and found some indication that changes in the interest rate structure affected the percentage of securities held in each maturity.

We hypothesized that firms could reduce cash holdings to an optimum balance—a minimum amount necessary for the effective conduct of business—and invest the remaining funds which satisfy their demands for money in cash-substitutes. It was argued that the cash-substitutes could function as a medium of adjustment to cash needs; in such a case, it is expected that cash holdings would remain relatively stable while fairly large fluctuations would occur in cash-substitutes.

It was shown that in the postwar contraction periods after 1951, severe reductions occurred in corporate holdings of Government securities. These Government securities represented a major cash-substitute by dollar volume for the corporate sector. The implication drawn from this was that these securities were used to adjust to cash needs.\(^1\) Similarly, following two of the three contractions after 1951, corporations vigorously invested in Government securities during the early period of expansion. After 1951, the fluctuations in Government security holdings were large

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\(^1\)The role of interest rates in explaining part of this behavior of Government securities has already been mentioned.
while cash holdings were relatively stable (although declining as a per cent of total assets), suggesting that adjustments to cash needs were made through cash-substitutes. Aggregate data revealed the behavior described, but we found that firms differed in the extent to which securities were used as the adjustment medium.

We did not say that securities were purchased for the sole purpose of adjusting cash balances; we also recognized the influence of expected yield. Firms with no need for such a medium of adjustment could enter the security market seeking a return on their otherwise idle cash.

We divided the period from 1952-62 into periods of monetary ease and monetary restraint. As we expected, the banking sector -- monetary authorities plus commercial banks -- usually showed net acquisition of Government securities during periods of ease and net disinvestment during periods of restraint. We found that corporations did not act in a predictable way during periods of ease or restraint, because two counteracting forces influenced their behavior. The response of the corporate sector was clear during contraction periods: corporations disinvested in securities to adjust to cash needs. An offsetting policy of ease attempted to make credit more readily available to corporations and to offset in some degree their need for disinvestment of securities for cash, while a lower interest return during contraction gave firms additional incentives for disinvestment of securities. In early recovery periods, corporations built
up stocks of securities, and the monetary authorities usually instituted a policy of restraint. Again, counter-balancing influences affected the firms. Their internal flow of funds provided excess liquidity, and higher interest rates provided the incentive to invest in securities. The policy of restraint, on the other hand, was used to reduce liquidity; and, to the extent that it was successful, corporations were eventually forced to disinvest in some securities to adjust to liquidity needs. The pattern of corporation behavior varied in each period of ease and restraint; therefore, we cannot gauge the degree to which monetary policy offset or reinforced corporate financial activities.

II. POLICY IMPLICATIONS

A. IMPLICATIONS FOR THE FIRM

It is clear that corporations can earn additional profits by good cash management. By holding the minimum cash necessary for the effective conduct of its business, the firm can invest all other money needed for liquidity in cash-substitutes. In the choice of cash-substitutes, the firm has a wide range of maturities and yields, consistent with varying degrees of risk, from which to choose.

To the extent that yield differentials emerge which are not offset by risk differentials, the alert corporate financial officer can increase net profits from financial assets. In addition, various trading techniques allow the corporate investor to increase the yield from
cash-substitutes.

In this postwar period, firms have reduced cash balances relative to other financial assets. In many cases the prevailing attitudes regarding the appropriate balance sheet relationship between cash and other assets have limited the ability of corporations to utilize cash efficiently. For example, one discerns from reading case studies of corporations and from interviews with corporation financial officers that the corporations fail to achieve the most efficient use of cash because of their belief that stockholders expect to see a "safe cash sum" in the balance sheet. To the extent that this "safe cash sum" exceeds that which the corporate financial officer might otherwise feel to be the optimum cash, the corporation is forgoing possible earnings.

If this "safe cash sum" is held by the corporation only at annual or quarterly reporting dates in order to impress stockholders, the costs of holding excess cash may not be large. The danger in this behavior is that it may carry over into the firm's daily operations. The practice of arranging the balance sheet to impress stockholders appears inconsistent with the behavior of optimum cash utilization which we have suggested can yield the greatest income for the firm. However, corporations are concerned with the market's appraisal of their securities; and as long as stockholders prefer some "safe cash sum," the firm's practice of building up cash prior to statements is perfectly rational.
We believe that there has been a tendency during the postwar period for corporations to educate stockholders to accept lower cash ratios. Corporations have stressed the maximum utilization of all resources including cash, and firms have partially educated their stockholders to appreciate measure by the firm toward efficient investment of idle cash. We believe that this attempt by firms to educate stockholders in the desirability of efficient cash utilization by the firm has been a small but contributing factor to the decline in the size of cash holdings relative to total assets in the balance sheets of corporations.

A corollary to efficient cash utilization is the maintenance of appropriate banking relationships. The firm should keep only enough cash in each bank account to support its activity; this would include compensating balances when banks have no more specific charges. Since there is a cost associated with maintaining credit lines and with keeping banking arrangements, the firm should sustain only those arrangements and lines in which the value of the use and the subjective insurance exceeds the costs.

We argue that the firm can do more to educate its stockholders and to make them aware of all the ways in which the firm is making money for them. The firm must temper the stockholder's impression that large cash balances represent safety with a more realistic appreciation of the costs of holding unnecessary cash. Through a better understanding of the firm's goals, stockholders may appreciate the firm's
efficient use of cash and its profitable investments in cash-substitutes.

We have enumerated factors in the postwar period which caused the firm's demand for money relative to sales, total assets, and total financial assets to decline and which caused shifts in the firm's demand schedule for money. We predict that if these factors continue to exert influences, the ratios will decline further in the future.

B. IMPLICATIONS FOR THE ECONOMY

The Effectiveness of Monetary Policy

The corporate business sector used its cash more efficiently than the other sectors during the postwar period. The income velocity of money of the corporate sector rose at a greater rate than the velocity of the entire economy. We argued that tighter monetary policy produced the incentive for corporations to utilize cash more effectively. This policy also provided the incentive for firms to rely on cash-substitutes to hold as a secondary money reserve and to use as the medium for adjustments to cash needs.

To what extent restrictive monetary policy, which reduces the liquidity of the corporate sector, also reduces spending by the corporate sector is not known. Corporations which have large holdings of cash-substitutes are more immune to the influence of tight monetary policy on their spending; these corporations merely disinvest in cash-substitutes if spending needs arise. In this respect, corporate immunity from tight money is similar to that
attributed to investment expenditures made from internal funds.

The corporate sector as a whole has stores of liquidity and can disinvest in times of tight money to meet spending needs. This large stock of cash-substitutes constitutes a potential offset to the effectiveness of restrictive monetary policy. Tight monetary policy can curtail loanable funds offered by banks, but the liquidity of corporations can frustrate restrictive policy.

Trade Credit

Corporations can frustrate a generally tight monetary policy by converting some of their accumulated liquid assets, such as Government securities, into another form of financial asset, such as trade credit. As mentioned earlier, the periods for which trade credit is made available have been lengthened and the quality of trade credit has fallen during periods of expansion in the postwar era.

We have shown that the corporate business sector is a net extender of trade credit. To the extent that net receivers are unincorporated businesses, farm businesses, and non-profit organizations, these receivers can avoid the problems of obtaining bank loans during tight money periods by getting trade credit extension from the corporate sector. This arrangement can frustrate tight monetary policy.

The trade credit expansion which has occurred poses a serious threat to monetary policy. Monetary authorities could avoid this problem by instituting selective credit
controls.¹ Selective controls on trade credit could be aimed at all corporations and be directed toward reducing maximum periods of repayment. For more specific regulation, the selective controls could apply to particular industries in which the quality of trade credit is inferior and in which this low quality credit appears to be a factor in business failure.

**Debt Management and Structure of Interest Rates**

The general pattern of investment and disinvestment in Government securities by the corporate sector in the postwar period has interesting implications for debt management policy. The business sector disinvested in securities during contraction, and the sector's ratio of Government security holdings to total assets dropped to low levels during each contraction after 1950.

During contraction periods when a policy of monetary ease is likely to be instituted, the monetary authorities purchase Government securities and attempt to lower interest rates and create credit ease. The monetary authorities buy securities while the corporate sector sells them. We have argued that corporations are partially reacting to monetary policy by disinvesting in Government securities during contraction when interest rates on the securities are low and

¹Such controls were used in consumer credit; Regulation W required minimum down-payments and set maximum periods of repayment on consumer purchases.
investing in higher yielding cash-substitutes. ¹ Similarly, in the early expansion period as recovery proceeds, the Treasury can sell to the corporate sector if it needs a market for new security offerings. The Treasury could expect to get loans from the business sector early in the expansion periods as the business sector replenishes its security holdings. However, the Treasury could not normally sell securities to commercial banks in the early periods of expansion. It was shown that in the expansion periods of 1955-56 and 1958-59, the commercial banks were disinvesting in securities to seek more profitable investments.

The fact that the Treasury can sell securities to the business sector to finance a deficit in the early stages of recovery suggests that this period might also offer an opportunity for the Treasury to lengthen the maturity of the debt. If the Treasury would offer sufficient inducements to corporations to cause them to invest in instruments with a two to four year maturity during the early stages of recovery, the debt maturity structure could be lengthened at a relatively low cost; furthermore, these securities in corporation portfolios would have a stabilizing effect as expansion proceeds.

Since the investment patterns of corporations are affected by interest rate differentials, the Treasury would

¹We have also argued that the corporate sector's disinvestment of Government securities during contraction periods is caused by the firm's need for cash and its adjustment to this need through the medium of cash-substitutes.
have to offer a yield relatively higher than that on T bills. This extra initial cost to the Treasury would be partially offset by the smaller expense required to handle the longer term security; whereas, bills involve the expense of frequent refunding. In addition, these instruments with longer maturities would have a stabilizing effect on the economy by reducing the freedom of corporations to dispose of their Government securities subsequently at their own convenience. This would afford the monetary authorities greater control and, consequently, justify the higher interest cost.

C. RELEVANCE OF FINDINGS TO SOME PARTS OF EXISTING THEORY

Gurley-Shaw.---The Gurley-Shaw thesis stresses the growth of non-monetary financial intermediaries and the financial assets which they create—non-monetary indirect assets. In general, in the postwar period, corporations have held a relatively small per cent of their total financial assets in these indirect assets; however, corporate holdings of time deposits and finance paper have shown a large growth rate. According to the Gurley-Shaw thesis, to the extent that the growth of these indirect financial assets has been attained by the corporation's reduction of its money holdings, the growth of the indirect assets has been inflationary. The reason this growth caused inflationary pressures was that it allowed the banks (which receive the time deposits) and non-monetary financial institutions to increase
their demand for primary securities and thus lowered interest rates. We cannot ascertain what part of the increase in corporate holdings of time deposits, finance paper, and other indirect financial assets resulted from a reduction in spending on other financial assets and what part resulted from a reduction in cash holdings.

We have stressed the fact that all cash-substitutes in the portfolios of corporations affect the demand for money. In addition, all of these liquid assets are a potential inflationary force and a threat to tight monetary policy.

The proposition that the growth of non-bank financial intermediaries has diminished the role of banks is inherent in the Gurley-Shaw thesis. The intermediaries have an unfair advantage in that they are generally not subject to the same strict controls which confront the banks. This control hinders banks in that they cannot compete successfully and are likely to assume a smaller role in the future.

The largest single competitor of the commercial banks for the funds of the corporate sector was the U.S. Government during the postwar period. Corporations held a large but diminishing portion of their cash-substitutes in U.S. Government securities. The growth rate of other cash-substitutes, such as finance paper, foreign securities, foreign bank deposits, etc., gave banks a reason to be

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1 After 1956, corporate holdings of the Flow of Funds category "Foreign currency and deposits and direct investments abroad" exceeded their Government security holdings.
concerned about their ability to compete for funds.

The corporate sector invested an increasingly large amount in short-term money market instruments during the postwar period. We have argued that changes in the investment practices of corporations could affect the relative rates of growth of the various sectors of the money market and could have an impact on other sectors of the economy. For example, we cited the growth of corporate holdings of commercial paper and mentioned one study in which it was found that the results of this growth were a shifting of funds by corporations from large metropolitan banks to finance companies which purchased consumer installment contracts and disbursed the funds all over the country to smaller banks. Because of this potentially great impact that corporations have on the money market and on other sectors, it is important that the monetary authorities maintain close touch with the financial investment practices of corporations.

The Gurley-Shaw hypothesis stresses the inability of commercial banks to compete with non-monetary financial institutions. The authors conclude that this will lead to the eventual decline of the commercial banks relative to the total financial sector. Our findings, that corporations reduced money holdings relative to sales in the postwar period and devised methods for more efficient use of cash, indicate that firms also tended to manage bank accounts more efficiently and to hold only funds necessary to support the
activities of the account. Banks could no longer make profits on idle balances of corporations.

We agree that if banks are more strictly regulated and if the interest return they may pay is below that of non-banking financial intermediaries, then banks are at a competitive disadvantage in seeking funds. However, this disadvantage may be offset via the banks' monopoly of the payments mechanism and their ability to offer services to corporations which only banks can provide. The banking sector can compete for corporate funds if it will tailor securities to corporate needs. This was clearly accomplished in 1961 when banks offered CD's in readily marketable form to their corporate depositors; CD's have enjoyed a phenomenal growth rate since then. Corporate investments in CD's represented potentially greater earnings for banks because of the lower reserve requirements on time deposits. There are other similar innovations banks can develop along these lines. Banks can develop alternatives for satisfying the new corporate demand for liquidity, which is, in general, a non-cash demand. The banks must plan now and offer the alternatives before the temporary advantage which CD's enjoy deteriorates. This will insure the competitive advantage of banks when similar offerings are devised by other institutions.

The banks can also increase their services in a manner which ties the firm to the bank. By offering those services which firms actually need, the banks can attract corporate funds. Certain banking services connected with the payment
mechanism can be performed better by banks than by any other institution; by attracting the corporation's business through these services, the banks have first chance at offering alternative investments for the liquid funds of corporations. We conclude that banks can compete by increasing their financial innovations and by offering bank cash-substitutes combined with bank services and consultative advice.

Friedman.—Our findings tend to shift emphasis from those theories which stress the role of monetary policy effecting changes through the stock of money. Those theories assume a fixed demand curve for money, then allow monetary policy operating through the supply of money to arrive at the market interest rate. We have found evidence that supports our contention that monetary policy in the postwar period has not operated solely through the supply of money.

Our theory suggests that monetary policy may cause shifts in the schedule of the demand for money of the corporate sector. Monetary policy may provide the incentive for developing techniques of efficient cash utilization and cause shifts in the schedule of demand for money; or monetary policy, through its effects on expectations, may cause shifts in the schedule of demand for money. Our arguments for the shifts in the schedules which were described for the corporate sector will not permit us to generalize and predict the same behavior for the entire economy. We do
argue, however, that monetary policy accomplishes some of the economic goals by affecting the corporate demand for money.
APPENDIX A

CASE STUDIES

Four Houston-based corporations were interviewed to get additional information about their management of liquid financial assets. The firms were unwilling to give data showing cash changes in the short-run, although financial officers were willing to discuss short-run changes in cash and their ability to predict these changes. Data from cash forecasts were shown to me, but these could not be published.

The interview followed the pattern below although all questions were not answered by each financial officer. In most cases the financial officer could explain company behavior and policy only for recent years. This was true because the financial officers either joined the firm recently or worked in other capacities prior to recent years.

Points Discussed in Interview

A. Discuss how and why the pattern of cash and marketable security holdings has changed since 1947. This would include specific probing of the effects of the following on cash holding:

1. Availability of cash-substitutes
2. Rising interest rates
3. Methods adopted which conserve cash

4. Effects of growth of trade credit

B. Cash

1. Do you have a target cash figure? If so, how is this determined?

2. How do you forecast cash needs? Accounting methods? How does the text-book approach to cash budgeting compare to actual methods used by the firm?

3. To what extent do you consult professionals: bankers, economists, etc.?

C. Marketable securities

1. What securities are held by the corporation? What is the maturity structure of these securities?

2. What is the criterion for choosing these financial investments? Is this a matter of policy determined by the Board of Directors or is this left to the discretion of the financial officer?

3. Why does the corporation invest in marketable securities? Are they earmarked for specific purposes such as taxes, dividends, etc.? Are securities ever bought without a specific purpose for their use; i.e., are idle funds switched into securities primarily for the interest return?

4. In purchasing securities, to what extent are provisions for monetary policy taken into account? Does your company "play the interest rate cycle"? Are adjustments in security holdings made on the basis of expectations about future rates?
5. What are the exact costs of buying securities? What is the minimum amount in which it is profitable for the firm to invest?

6. To what extent does the level of short-term interest rates affect the pattern (maturity structure) of your investment in financial assets? Do differences in yields on cash-substitutes result in your altering the relative holdings of various financial assets?

I. ANDERSON, CLAYTON AND CO.¹

Anderson, Clayton and Co. is traditionally known as a cotton merchant and processor of cottonseed. However, the company has three main businesses: (1) commodity merchandising, including cotton and coffee, (2) cottonseed oil-milling and cotton-ginning, and (3) food manufacturing. The company's other activities include warehousing, insurance, manufacturing, seed breeding, crop financing, animal feeds, and farming.

From Moody's,² it can be seen that annual cash figures for the company have declined in absolute amount and as a per cent of total assets over the postwar period. These figures also show that one per cent of total assets was held in Government securities. Our first inquiry was with regard to these figures.

¹Mr. R. W. Summers, Vice President and Treasurer, was most helpful in providing this information.

Cash and Securities

Because of the nature of its primary business of cotton merchandising, Anderson, Clayton and Co. is a continual borrower. It has long been company policy not to keep excess cash in the bank; and when excess cash is generated in the business, it is used to pay off bank loans. Cash in the bank is kept at a target level which allows just enough cash for part of the firm's transactions needs and enough cash to support bank credit lines. To carry out diverse operations, the firm needs a certain number of bank connections; yet the number of banks used is kept to the minimum because costs are incurred for each bank connection. For each account there is a different target cash amount which is the minimum that will support activity of that account; this minimum may range from figures in the hundreds of dollars in accounts used for payroll to hundred thousands of dollars in accounts used to support bank credit lines.

Since there was no excess cash, the parent company held no Government securities. The major part of the Government securities shown on the balance sheet was not held by the parent but by insurance subsidiaries. In addition, "Payment in Kind" certificates (PIK's) of the Commodity Credit Corporation were held; these were obtained and used in the normal operations of the cotton merchandising business. (PIK's are negotiable certificates which can be used to buy surplus commodities from the Government.)
Although cash requirements and excesses vary from day to day, the Treasurer, because of his experience in the business, can predict the range within which daily fluctuations occur. The Treasurer insisted that with respect to cash "there are no surprises in the business." The company's sales vary cyclically and seasonally but the size and diversity of the firm's operations result in a predictable pattern of cash receipts and disbursements. The unusual feature of this firm is the fact that it is a continual borrower against commodity inventories and that excess cash goes to pay off bank borrowings.

Cash is not held for precautionary or speculative purposes because the firm has confirmed credit lines. The firm does not keep cash to cover all transactions needs because it has a very interesting arrangement with certain New York banks. It has overdraft privileges on a demand basis, so that sudden needs are satisfied by borrowing in the overdraft account. This arrangement was made about forty years ago; the banks assure Anderson, Clayton that they are the only company in the United States with this privilege.

This overdraft system allows Anderson, Clayton to avoid keeping deposits in the banks to cover outstanding checks and saves the interest cost on excess float. The firm uses the overdraft accounts in the ordinary course of covering daily requirements, converting to a time note basis when the overdraft account exceeds predetermined
levels. Interest costs for this service are based on the
funds actually used. This overdraft arrangement gives the
firm flexibility in the daily management of cash—i.e., the
firm has some choice in the timing of paying drafts—with
the benefit that much of the chore of scheduling daily cash
flows is avoided.

The overdraft accounts are covered under the overall
confirmed unsecured credit lines with banks. For these,
the firm must keep compensating balances—either a fixed
deposit against the line or an average deposit over the
year. In addition, there are secured lines of credit and
certain special lines.

The Treasurer mentioned several reasons for the de-
cline in cash holding in the postwar period:
(1) Through 1963, the cash figures were given for all con-
solidated balance sheets. Cash holdings in foreign
countries diminished because banks in these foreign
countries, especially in Latin American countries, have be-
come more efficient in handling cash items. More sophisti-
cated financial techniques here and especially in Latin
America have allowed cash to be utilized more efficiently.
(2) The company reduced the time cash was in transit by
using devices such as lockboxes and telegraphic and cable
transfers of funds.
(3) The firm used time drafts instead of checks (sight
drafts) for major purchases such as cotton. Payment by
time draft meant that funds were not required until after
the draft was presented for payment.

These reasons are among those which we have listed to explain the economy-wide decline in cash/total assets.

**Receivables**

The company's trade credit is very large (approximately double their cash holding); this is primarily associated with the cotton oriented operations. To extend trade credit is the accepted practice in the industry. The Treasurer saw no particular relationship in the pattern of cash holding caused by the growth of trade credit.

**Cash Forecasts**

The company's cash forecasts are of three types:

(1) Long term -- one to five year projections.

(2) Short term -- three to four months.

(3) Daily considerations.

Divisional and subsidiary forecasts are controlled and coordinated by the Treasurer's office. The procedure in handling cash in each office is standardized in that all cash above a certain level is sent to regional banks and ultimately to New York banks. Each finance office in normal operations borrows locally under limits and policy of the home office; however, each office clears unusual needs for funds with the Treasury office.

**Effects of Monetary Policy on Corporation**

Monetary policy affects the firm mainly by affecting the interest rate at which the firm can borrow funds. The firm borrows from many sources in order to have the lowest
average interest cost. The sources are: confirmed secured credit lines at banks, confirmed unsecured credit lines at banks, bankers' acceptances, commercial paper, Euro-dollars, and foreign currencies with swaps.

The firm uses the combination of sources which gives the least interest cost commensurate with proper relations and availabilities in each of the money markets. Since the firm must maintain appropriate banking relations, the firm borrows a basic amount from banks regardless of cost. When banking funds are available at a lower cost than funds from other sources, the company borrows a larger portion from banks.

Anderson, Clayton does not switch between banks looking for better interest rates; the firm gets the prime rate and operates continuously with the same banks. In its biggest daily requirement, the firm borrowed $66 million from banks in one day, using its normal credit lines, to purchase cotton from the Government.

Dramatic shifts in the firm's pattern of borrowing have occurred. At one time, 75% of credit came from bankers' acceptances; at present this source of credit is not used at all because the rates are too high. At the end of each calendar year the firm is severely limited in borrowing Euro-dollars because the banks in Europe raise the short-term rates to discourage borrowing at that time. Banks in Europe want their year-end balance sheets to show more cash and fewer loans outstanding. Because the Euro-dollars
are volatile as to rate and availability, Anderson, Clayton borrows them only when it can get them at attractive rates.

Anderson, Clayton appears to be very aware of the cost of holding money. The firm's borrowing at the lowest cost is consistent with the practice of getting maximum use from cash and relates to our argument that rising interest costs on money is a principal cause of the decline in money holdings/total assets by corporations.

II. COMPANY X

The company is an integrated company which fits somewhere between the primary iron and steel industry and metal fabricators. The company has furnaces, makes steel and alloys for themselves, and then makes finished products. The firm and its subsidiaries abroad had 3600 employees and total assets of $58 million in 1964. Company X makes forgings and oil well equipment. The firm's sales, though not affected much by cyclical changes, are affected by any event which adversely affects oil well drilling.

Cash

Annual balance sheets reveal that the cash balances held have decreased in the postwar period while net sales have increased to a level nine times as high as their 1947 level. Cash is continuously held at a minimum except for the end of the year when balance sheets are constructed.

1The writer appreciates the information which the Treasurer gave so enthusiastically. Names have been withheld upon the firm's request.
Cash on the balance sheets is usually higher than day-to-day holdings. In the 1964 balance sheet, cash holdings were large enough to cover disbursements for about four days.

In its day-to-day operations, the firm is able to hold cash at a minimum because good cash forecasting allows much synchronization of receipts and disbursements. Day-to-day cash changes are predictable by the Treasurer and daily cash forecasting is extremely accurate.

The company holds no Government or other marketable securities. It borrows from banks for short-term needs and from insurance companies for long-term needs.

Cash Forecasting

The company is very active in the line of cash planning. Daily forecasts are made as well as weekly and monthly plans; the receipts and disbursements method of forecasting is used. There is a forecast by months for six months in advance, by quarters for one and one-half years, and by six month periods for three years in advance. The longer-run cash flow forecast is patterned after the adjusted net income method.

The financial officer reports great success in the short-run planning of receipts and disbursements which allows the company to operate holding very little cash. The financial officer attempts to make disbursements for payroll, taxes, pension payments, and dividends as they fall due, out of current cash receipts. When this is not possible he
borrowed from the bank on a short-term credit line.

Cash forecasting is made more difficult by the fact that the company has world-wide subsidiaries. Foreign countries, especially in Latin America, tend to have a much slower payment pattern.

**Interest Rates**

The financial officer considers other factors than just the level of interest rates when borrowing. If the company needs money it borrows on the expectation that it is actually making more money with its own funds than the interest charge. The prime rate is obtained from its banks for all loans; and the interest charge is tax deductible at a 50% rate, so that it is not of major concern. However, the company does not consider it a good business practice to pay more interest than necessary for funds and does not hold compensating balances in banks from which funds are borrowed.

**Trade Credit**

From 1947-57, the company offered a cash discount to its customers. Companies gradually delayed payment, sometimes after taking the cash discount; so Company X went on a 30-day net basis in 1957 or 1958. Company X made an attempt to enforce payment on this basis, but customers have managed to make the average accounts receivable of Company X equal to about 41 days now. Because of this trend, Company X has been forced at times to delay payment on some of its trade payables.
Financing Investments

The company borrows cash to coincide exactly with the date it is needed. If it plans investment in plant or equipment, it borrows short-term funds from the bank to pay expenses not available from current income as investment proceeds. At the end, Company X borrows long-term from an insurance company to pay back all the bank loans at once. Long-term borrowing is more expensive and the company doesn't do it until it is absolutely necessary. This is another example of the reasons why cash holding is at a minimum.

Company X appears to get maximum use of its cash and holds minimum operating balances. It utilizes all the technological developments—financial innovations and obtains bank funds at lowest cost.

III. COMPANY Y

This company buys and mills rough rice and distributes milled rice in bulk and packaged form for household consumption. The company also supplies rice to the brewing industry and export markets.

Over the postwar period, the firm's cash holdings declined as a per cent of total assets and in absolute terms. The Treasurer's explanation for this was that the firm reflected the change which occurred in all corporations; cash

1 Name is withheld on Company's request. Again, appreciation goes to the Treasurer for discussing Company policy.
holding was primarily affected by two forces. First, the acceleration in the schedule for paying taxes drained actual cash from corporations. Formerly, when corporations held larger tax accruals, they had larger cash holdings; but as payment was pushed forward, cash holdings were reduced. Second, offsetting this cash drain was accelerated amortization which, the Treasurer believes, gave increased cash to the companies after 1951.

Certain other factors which we hypothesized were causing the relative decline in cash holdings seemed unimportant to the Treasurer. For example:

(1) Availability of cash-substitutes was not important to his company because it holds no marketable securities.

(2) Rising interest rates were unimportant to the Treasurer. Since the company was borrowing heavily (short-term) for ten months of the year, any cash on hand during the balance was considered a part of the company's annual compensating balances. The Treasurer stated that the company borrowed at the prime rate and interest costs were not important to them since half of the interest cost was shared by the Government.

(3) Trade credit was unimportant since the company neither gave nor used trade credit. Its buyers, such as large food chains, made their profits by taking cash discounts given by Company Y. On exports, the company received cash--irrevocable letters of credit--before a shipment of rice was loaded. The company had no bad debts, per se.
Other factors which had some influence were:

(1) Relative postwar stability. Since the Government regulated rice yields and purchased surplus rice, expectations of stability in the industry and in its prices were prevalent. The reduction of uncertainty could reduce average cash holdings.

(2) The Treasurer agreed certain developments allowed companies to use cash more efficiently; this included technological improvements, banking innovations, and improved communications, among other things.

**Target Cash Figure**

On the balance sheet year-end figures, the Treasurer never lets the cash figure get below one million dollars. This is a purely psychological matter with the Treasurer; he wants the balance sheet to look good to stockholders. If the figure were lower, he fears it might look as if the company is unable to borrow, that it is operating on a shoestring, etc.

The company maintains cash balances and lines of credit with six banks. The balance in each bank never falls below $100,000 or 10% of what Company Y owes the bank. The Treasurer said that each bank requires a daily average balance equal to 20% of the company's daily average loan for the year, but Company Y has cut this figure to 16%. (The Treasurer surmised that the size of this balance varied according to the credit rating of the company.) Improved data processing has increased the ability of banks to keep track
of average balances and to enforce compensating balance requirements.

Determining Optimum Cash - Optimum Loans

Company Y makes no cash forecasts or cash budgets. It is a very stable business; the firm estimates current sales on the basis of past years' sales. After rice sales are estimated, the appropriate amount of money to borrow and the correct amount of rice to buy are also known. After loans are arranged, fifteen rice buyers go into the field and buy rice until 90% of the loans are spent. At this time the Company limits the buying, i.e., slows it down so the firm can control purchases better and not exceed the total loan value.

The firm's sales are relatively constant from year to year, and the amount of rice available is somewhat controlled by the Government. The firm then operates within predictable limits.

As money comes in, the Treasurer may instruct buyers to buy more rice, or he may cut off purchases when the amount planned originally is bought. One technological improvement for the company is the IBM controls which tell it within one day the number of dollars of drafts which have been written by the fifteen buyers.

The Treasurer relies on no outside consultative advice. Company Y's demand for money might be described as determined by the figure which the Treasurer feels is a "safe" sum and by compensating balances whose sizes are dictated by
IV. CONTINENTAL OIL COMPANY\(^1\)

Conoco and its subsidiaries produce, transport, refine, and market petroleum and its products. The company also produces chemical products derived from petroleum.

Conoco's cash as a per cent of total assets has declined since 1948. Marketable securities have fluctuated more than cash and appear to have provided the adjustment to cash needs. (See Chart A-A.) Several factors such as higher interest rates, availability of cash-substitutes, and adoption of improved methods to utilize cash have affected Conoco's cash holding behavior.

Cash

The company, in its nationwide operations, deals with many small country banks in which a minimum sum—dormant balance—is kept to cover costs of the account to the bank. This allows the bank a fair profit and yet Conoco gets optimal use of its cash. The excess cash over this dormant balance is automatically transferred to a New York bank.

In addition, there are regional banks in large cities with which Conoco has accounts. These banks provide lockbox services and handle the indirect financing of Conoco's dealers. Banks were given a chance to bid for all or a part of the services. Most banks provide these services in

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\(^1\)The writer is very grateful to Mr. Lee Crites, Mr. Bob Immasche, and Mr. Gene Thomas for supplying information and to Mr. Lovett Peters for offering Conoco’s cooperation.
CHART A-A
CONTINENTAL OIL COMPANY
CASH AND MARKETABLE SECURITIES AS A PER CENT OF TOTAL ASSETS
Source: Quarterly data furnished by Continental
exchange for a certain size balance kept in the bank by Conoco. An interesting arrangement which developed is one in which the bank requires Conoco to keep its balances in non-interest earning CD's with a one-year maturity. This is advantageous to the bank because there are smaller reserve requirements for time deposits than for demand deposits. The bank also has more security from time deposits than from demand deposits which could be withdrawn at any time. (Conoco often verbally agrees to keep the CD's for two years instead of one.) Part of this bank saving is passed on to Conoco; the use of CD's allows Conoco to keep a smaller sum than if its balances were kept in demand deposits. The target cash for Conoco at each bank is just enough to support the activity of that account.

Conoco also has five major banks: four in New York City and one in Chicago. From all the lockboxes, there is automatic transfer; every night entire sums are transferred to one New York bank. The following morning the New York bank wires the Treasury's Receipts and Disbursements Division in Ponca City with coded information about the amount of cash which came from each city.

The money which flows to the New York bank comes from three different types of lockboxes:

(1) General office box. These are for very large customers—wholesale marketing accounts such as other big companies; these are handled in the general office and not in the field. The banks are usually located in the same city as the
(2) Retail credit card lockboxes. These are scattered all over the marketing area.

(3) Agents and jobbers lockboxes. Commission agents deal with country banks; when the agent makes deposits he also draws a deposit transfer check. There is a concentration point for the agents' funds in a large city in each state. In this large city, the bank transfers by wire to the New York bank all sums above the agreed minimum account.

Forecasting

(1) Daily. A forecast of receipts and disbursements for the day is relayed to the Houston office from Ponca City, after the New York City bank notifies Ponca City each morning of the previous day's receipts and the account balance. From this, the Houston financial officer\(^1\) in charge of cash knows how much he can invest in marketable securities each day. The company has a certain cash level which it attempts to keep in its five major banks. At the close of business each day, the five major bank balances are adjusted to predetermined percentages which are computed monthly about the 10th.

(2) Weekly. The Ponca City Receipts and Disbursements office sends a forecast of the next five days' receipts and disbursements. This helps the financial officer in the Houston

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\(^1\) The employee who actually performs the forecasting and makes investments works for the Assistant-Treasurer in the Houston office. For simplicity, we shall refer to the financial officer.
office to know what sums can be available for investment or, equally important, what pressures may be building up to cause them to borrow.

(3) Annual -- by months. This is a cash flow forecast by months. Each month a comparison is made between the forecast and actual receipts and disbursements. The present month's forecast is revised and any other changes which are known are fitted into the forecast for future months. Each month this is made for the current month and for the rest of the year; in November and December, three to four months of the following year are included. The forecast for distant months relies heavily on the seasonal pattern of previous years' receipts and disbursements revised to take account of all known changes.

The financial officer receives from every department an estimate of their expected receipts and disbursements for the next two to three months. From this he derives a forecast of the next two to three months. He then relies on history and any known changes to forecast receipts and disbursements for the rest of the year.

(4) Five year forecast. This forecasts both income and cash needs. As its long-run nature suggests, the adjusted net income method of cash forecasting is used.

**Lines of Credit**

The company's line of credit is with one bank in New York, but this bank uses several sources. Conoco formerly issued its own commercial paper to get funds. In order to
get the firm to use bank funds, the New York bank changed its requirement of three days' notice, prior to the firm's borrowing, to one day's notice.

Conoco's use of several large banks appears very wise in that services offered by different banks complement each other and provide Conoco with complete banking services at a minimum cost. Conoco relies on all of its bankers for consultative advice.

** Marketable Securities**

A Board of Directors' Resolution determines which marketable securities Conoco may buy. At present, these include: any U.S. Government issue guaranteed by the Government; any direct obligations--maturing within a year--of states, counties, or other government subdivisions; any bonds, debentures, equipment trust certificates, commercial paper, and other debt securities which are direct obligations of domestic corporations, whose net worth exceeds $25 million, and which mature within one year. Commercial paper has the additional restriction that it must meet the qualifications of the Federal Reserve Bank for papers which it will accept for rediscount from its member banks.

The investment decisions are guided by: cash balances, i.e., known receipts or disbursements occurring that day, weekly and monthly cash forecasts, and securities existing in the company's portfolio. The latter consideration involves the schedule of maturities and qualitative factors such as the amount held under repurchase agreements.
Within the framework of these acceptable investments, the finance officer consults with New York brokers each day and decides which investments to buy based on yield and maturity. He remains informed at all times on current rates and trends of various financial assets.

The financial officer handles investments for the various pipeline subsidiaries and for a separate plant construction fund as well as for Continental Oil. These are separate investment decisions and it is often important in these cases of subsidiaries and construction funds that the maturity of the security match the date the funds are needed. All other investments merely represent the investment of excess cash to get a return, although the maturity may match known operations' needs in the future. In general, these investments are made with the aim of getting maximum yield on short-term funds.

The fact that interest rates are very high does not cause the company to invest in issues with a longer maturity; Conoco does not "play the yield curve." Conoco does not invest funds for more than 90 days, generally.

**Mechanics of Investing**

Each day, the financial officer determines how much money is available to invest and the length of time for which it can be invested. Then he tries to get the highest interest rate. New York brokers check with the company daily or the Houston officer phones the brokers collect and ascertains rates at which funds can be placed. The smallest
amount of securities the company buys is $50,000.

When the company has a large sum to place, the financial officer gets several bids and finds which broker can offer the best yield. With a larger sum to invest, higher interest rates can be obtained. The officer often buys securities with a repurchase agreement from the broker.

When Conoco decides to buy, the agreement with the broker is made over the phone. Then the financial officer wires the custodian of Conoco's securities (a New York bank) to pay the broker for the bills. The officer also wires Conoco's banks to notify them of the bills which are maturing that day and requests that the custodian present the bills for payment and credit Conoco's account.

This careful handling of excess cash takes approximately twenty hours per week; or stated differently, the man who manages the portfolio spends half of each day on this job. This results in a sizable earning for the company. For example, in February, 1965, the company made an average of 4.1% on excess cash by investing in marketable securities; this amounted to $4,465. This was a very modest sum, according to the financial officer, and at other times earnings are greater. The company's real asset investments at the present have them in a credit squeeze, and thus less financial investments are made.

The company appears to be very well informed in all aspects of the management of its cash and cash-substitutes. Conoco goes about this financial management in a methodical,
rigorous manner; efficient cash utilization is a deliberate company policy.
APPENDIX B

DETERMINATION OF PERIODS OF MONETARY EASE AND RESTRAINT

I. METHODOLOGY

Some index of monetary restraint and monetary ease or at least some gauge of Federal Reserve intentions is required. Three measures often used are: (1) level of interest rates, (2) level of "free reserves," and (3) Federal Reserve intentions obtained from reading the Annual Report of the Board of Governors of the Federal Reserve System.1

Interest Rates

A monetary policy which reduces interest rates is expected to create an environment of ease so that investment and consumption expenditures are encouraged. Conversely, a policy which raises rates is expected to bring about a period of restraint.

Interest rates do not always provide a good measure of Federal Reserve intentions because interest rates and their structure may be affected by the Federal Reserve to achieve goals other than monetary ease or restraint. For example, in the 1960-62 period, the Federal Reserve

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expressed the intention to maintain domestic ease to promote growth and increase employment. At the same time, the Federal Reserve kept short-term interest rates higher than normal, for periods of ease, to prevent capital outflows which were aggravating our balance of payments problem.

Free Reserves

Another measure used to indicate the policy intentions of the Federal Reserve is the volume of "free reserves" of member banks. The "free reserves" figure is obtained by subtracting reserve borrowings of the member banks from the excess reserves of the member banks. Member banks may borrow to meet temporary reserve deficiencies, and an increase in this borrowing suggests some monetary restraint. When excess reserves decrease, the potential for demand deposit expansion also decreases. Thus, when the "free reserves" figure is positive, there is a potential for credit expansion; the larger the "free reserves," the greater is the likelihood of ease. When the free reserve position of member banks is negative, the banks tend to reduce other financial assets (such as loans outstanding, marketable securities, etc.) to pay back reserve borrowings and to arrive at a positive free reserve position. A negative "free reserves" figure indicates a period of monetary restraint.

"Free reserves" from 1952-62 are plotted in Chart B-A using quarterly data. It is not surprising to note that with three exceptions1 "free reserves" are positive in

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1The exceptions are 1952 III, 1958 III, and 1960 II.
CHART B-A
FREE RESERVES - ALL MEMBER BANKS
in millions of dollars

Source: Federal Reserve Bulletin
periods which we have labeled ease (obtained from notes in the Annual Reports) and negative in those labeled restraint. In each of the three exceptions, the "free reserves" were less than $100 million. In each case, the quarter was labeled one of modest restraint, and usually the periods were transition periods between modest restraint and modest ease. If the volume of "free reserves" is the best single indicator of Federal Reserve intentions,¹ Chart B-4 verifies to some degree our classification of periods of ease and restraint.

Friedman acknowledges the use of "free reserves" as an index: "Official and semiofficial statements by persons connected with the System suggested that free reserves could be regarded as an index of 'tightness' or 'ease' of monetary policy."² However, he criticizes the reliability of this measure as an index:

Arithmetically, a given level or pattern of movement of free reserves is consistent with almost any level or pattern of movement of the total money stock. For example, free reserves can remain constant at any specified number, positive or negative, and the money stock, increase at a rapid rate or decrease at a rapid rate. It is only necessary that total reserve balances minus member bank borrowings change at the same rate as required reserves.

Economically, there is presumably some level of free reserves at any given time that banks desire to maintain, a level they try neither to increase by liquidating assets nor to decrease by acquiring assets. If the System tries to maintain a higher level of free reserves than the banks desire, the banks will use the excess to increase their loans and investments and, in

¹Suggested by Hickman, p. 337.
²Friedman and Schwartz, p. 615n.
the process, will increase the money stock and required 
reserves, and so reduce free reserves. The System can 
frustrate the banks by creating still more high-powered 
money, which will produce a continued increase in the 
money stock. Conversely, if the System tries to main-
tain a lower level of free reserves than the banks de-
sire, it can do so only by forcing a decline in the 
money stock. Thus, a level of free reserves above the 
desired level can be maintained only by expanding the 
money stock, and conversely. . . . Whether a given 
level of free reserves involves monetary expansion or 
contraction therefore depends not only on its absolute 
size, but also on its relation to the level banks are, 
perhaps implicitly, seeking to attain.1

Reading "Annual Reports" of the Federal Reserve

The best way to find the intentions of the Federal Re-
serve toward a policy of ease or restraint is to read the 
reports of the meetings of the Federal Reserve Board and of 
the Federal Open Market Committee. From these, a schedule 
of their intended policy which shows the approximate dates 
of policy changes can be obtained. (See Table III.) In 
the following section are quotations from published reports 
of meetings to support the interpretation of intended policy 
given in Table III.

For analysis, we combine periods of "moderate ease" 
and "ease" and call the entire period one of "ease." It is 
clear, however, that the degree of ease or restraint re-
sulting from Federal Reserve actions varies over any period. 
During any period the Federal Reserve may be forced to carry 
out operations which are in conflict with its stated 
intentions--e.g., an occasional activity supporting a Treas-
ury refunding operation, an activity termed "correction of

1Friedman and Schwartz, pp. 615n-616n.
<table>
<thead>
<tr>
<th>Policy</th>
<th>Dates</th>
<th>Quarters</th>
</tr>
</thead>
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<tr>
<td>Neutrality</td>
<td>Jan. '52 - June '52</td>
<td>1952 I - 1952 II</td>
</tr>
<tr>
<td>Moderate restraint</td>
<td>June '52 - May '53</td>
<td>1952 III - 1953 I</td>
</tr>
<tr>
<td>Moderate ease</td>
<td>May '53 - Sept. '53</td>
<td>1953 II - 1953 III</td>
</tr>
<tr>
<td>Ease</td>
<td>Sept. '53 - Dec. '54</td>
<td>1953 IV - 1954 IV</td>
</tr>
<tr>
<td>Moderate ease</td>
<td>Dec. '54 - Aug. '55</td>
<td>1955 I - 1955 II</td>
</tr>
<tr>
<td>Restraint</td>
<td>Aug. '55 - Nov. '57</td>
<td>1955 III - 1957 III</td>
</tr>
<tr>
<td>Moderate restraint</td>
<td>Nov. '57 - Dec. '57</td>
<td>1957 IV</td>
</tr>
<tr>
<td>Moderate ease</td>
<td>Jan. '58 - Mar. '58</td>
<td>1958 I</td>
</tr>
<tr>
<td>Ease</td>
<td>Mar. '58 - July '58</td>
<td>1958 II</td>
</tr>
<tr>
<td>Moderate restraint</td>
<td>July '58 - May '59</td>
<td>1958 III - 1959 I</td>
</tr>
<tr>
<td>Restraint</td>
<td>May '59 - Mar. '60</td>
<td>1959 II - 1960 I</td>
</tr>
<tr>
<td>Moderate restraint</td>
<td>Mar. '60 - May '60</td>
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<td>Moderate ease</td>
<td>May '60 - Aug. '60</td>
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<td>Ease</td>
<td>Aug. '60 - June '62</td>
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<tr>
<td>Moderate ease</td>
<td>June '62 - Dec. '62</td>
<td>1962 III - 1962 IV</td>
</tr>
</tbody>
</table>
a disorderly market," or an activity "to steady the market." However, we suggest that a period termed "ease" is a period in which the predominant aim of the policy is to achieve ease.

Before the Accord in March, 1951, monetary policy was flexible in only one direction, because the Federal Reserve was committed to support the price of Government securities. After the Accord, the Open Market Committee stated that its policy would not be to support any special pattern of prices and yields in the Government security market and that its intervention in the market would be solely to effect objectives of monetary policy.

The period from 1952 through 1962 is chosen for consideration because this period coincides with available quarterly data. It is convenient to begin with 1952 and to avoid the period immediately after the Accord, when the Federal Reserve was adjusting to full control of monetary policy free from substantial Treasury influence. The Federal Reserve cautiously avoided having a disruptive effect on the economy in the period immediately after the Accord; from March to October, 1951, its stated policy was one of restraint, and from October, 1951, through part of 1952, its policy was one of "neutrality."
II. STATEMENTS FROM RECORDS OF POLICY ACTIONS

A. NEUTRALITY - (January, 1952 - June, 1952)

March 1, 1952

Since its meeting on October 4, 1951, the Federal Open Market Committee had pursued a policy of so-called "neutrality" in making reserves available, with a view to permitting market forces of supply and demand to operate with a minimum of Federal Reserve intervention except to promote orderly market conditions.¹

The direction to the executive committee . . . was adopted, therefore, with a view to continuing the policy which had been pursued for several months.²

B. MODERATE RESTRAINT - (June, 1952 - May, 1953)

June 19, 1952

The System's policy of "neutrality" had become increasingly one of restraint as credit demands had expanded. Some relief had been given by putting funds into the market during temporary periods of stringency through purchases of short-term securities and through purchases from dealers under repurchase agreements. However, a major part of the additional reserve funds needed by the market to meet the combined demands of a rise in currency in circulation and an increase in required reserves was obtained through borrowing by member banks from the Federal Reserve Banks, as was indicated by the fact that member bank borrowings at the Federal Reserve Banks during May and the first half of June averaged well above a half billion dollars.³

The tighter money market was being reflected in a rising level of interest rates and suggested that, if credit demands should become excessive, an increase in the discount rate might be appropriate.⁴

September 25, 1952

The committee considered that operations during the

¹Annual Report, 1952, p. 91.
⁴Annual Report, 1952, p. 94.
preceding three months had been reasonably successful in keeping an even flow of money through the economy without having had excessive reserve funds on the one hand, or undue contraction on the other, and that the policy of modest restraint with respect to the availability of reserves should be reaffirmed.\(^1\)

December 8, 1952

It was the view of the Committee that the general outlook was for a high level of income and production over the next few months with no immediate evidence of price inflation. That view suggested that the Committee should remain on the alert but did not call for action to change the existing policy of modest restraint in furnishing any additional reserves, a policy which had been consistent with a stable price level and a high level of economic activity.\(^2\)

March 4-5, 1953

The Committee agreed, therefore, that it would pursue a policy which would maintain about the same degree of restraint on credit expansion that had been followed in recent preceding months, . . . \(^3\)

C. MODERATE EASE

A change toward credit ease, which began in May, 1953, can be detected from the notes of the June meeting.

June 11, 1953

In terms of credit policy, the foregoing directive placed emphasis on "avoiding deflationary tendencies without encouraging a renewal of inflationary developments (which in the near future will require aggressive supplying of reserves to the market)," rather than "exercising restraint upon inflationary developments," as provided in the directive issued by the Committee at the preceding meeting in March.

The general objective of credit policy under both the March and June directives was one of keeping the supply of credit and money adjusted to the needs of a growing and high-level economy; the change in policy

\(^1\)Annual Report, 1952, p. 97.


\(^3\)Annual Report, 1953, p. 88.
at this meeting reflected recent developments in the economic and credit situation. Commodity prices had remained fairly stable for some months while output had continued at a very high level and had actually increased slightly further since March. Financial markets, on the other hand, had been unsettled at times during the spring months, particularly during late May, and throughout the period since March there had been an undertone of concern about potential declines in economic activity. Doubts had related to the strength of underlying conditions, concern having been expressed lest measures designed to limit credit expansion had become more restrictive than was desirable, setting in motion forces of decline which would be difficult to check. . . . While attention was focused on the sharp advances in interest rates since mid-April, the cumulative effectiveness of monetary restraints had become evident in the financial and business community to such a degree that credit was more difficult to obtain than was considered to be desirable in terms of the Committee's policy approved at the March meeting—a policy of exercising restraint upon inflationary developments but at the same time keeping the supply of credit adjusted to the needs of a growing and high-level economy.1

Indications were that, in order to supply normal seasonal and moderate growth demands for credit and keep the situation from getting tighter than was believed to be desirable in view of prospective needs for funds from private and Treasury sources, there would have to be put into the market something like 2.5 to 3.5 billion dollars of reserves between May and the end of 1953. It was the view of the Committee, therefore, that policy should be one of aggressively supplying reserves to the market during the near future on a sharply rising scale and, accordingly, the instruction to the executive committee was changed in the manner indicated.2

D. EASE

The policy of ease changed to "active ease."

September 24, 1953

This directive provided that transactions in the System open market account should be with a view "to avoiding deflationary tendencies" rather than, as had been agreed at the meeting on June 11, 1953, "to avoiding

1Annual Report, 1953, p. 93.

2Annual Report, 1953, p. 94.
deflationary tendencies without encouraging a renewal of inflationary developments (which in the near future will require aggressive supplying of reserves to the market)." This change in wording reflected a policy that the Committee described as "active ease" under which reserves would be supplied to the market to meet seasonal and growth needs, recognizing that open market operations should be flexible in relation to the volume and timing of supplies of reserves from other sources.\(^1\)

Despite the much easier credit conditions that had developed in the open market since the June meeting, it appeared in September that, in general, credit was not as readily obtainable as would be desirable and that further easing would be needed to assure ready availability of credit during the fall months when customary seasonal factors would be accentuated by additional Treasury financing. Under these circumstances, the Committee authorized the pursuit of the policy of "active ease" referred to above, and changed the wording of the directive as indicated.\(^2\)

This ease was maintained.

December 15, 1953

This directive was changed to provide, as the central objective of current credit policy, that transactions for the System open market account should be with a view "to promoting growth and stability in the economy by actively maintaining a condition of ease in the money market."\(^3\)

In 1954, the Federal Reserve took further steps toward a policy of ease by lowering rates on discounts and advances, in February and April,\(^4\) and reducing reserve requirements of member banks in June.\(^5\) The policy of active ease was reaffirmed as the continuing objective at the meetings in

\(^{1}\text{Annual Report, 1953, p. 97.}\)

\(^{2}\text{Annual Report, 1953, p. 98.}\)

\(^{3}\text{Annual Report, 1953, p. 101.}\)

\(^{4}\text{Annual Report, 1954, pp. 86-88.}\)

\(^{5}\text{Annual Report, 1954, pp. 88-89.}\)
March, June, and September, 1954.

March 3, 1954

Pursuit by the Federal Reserve in late 1953 and in the first two months of 1954 of the credit policy described as "active ease" was for the purpose of assuring that recession tendencies would not be accentuated, as at times in the past, by pressure for liquidation of bank credit, and that tendencies toward economic recovery would be encouraged by an ample volume of reserves at the banks and aggressive efforts to extend the availability of credit.¹

June 23, 1954

The Committee concluded that, under the circumstances, monetary policy continued to bear a heavy countercyclical responsibility. It felt that the policy of "active ease" which had been maintained for some months had facilitated and made possible the financing of business without causing distortions in the credit and capital markets. In the Committee's opinion such revival as had occurred was insufficient to call for modification of the policy of active ease and, therefore, action was taken to renew without modification the directive calling for a policy of actively promoting ease in the money market.²

September 22, 1954

At the time of this meeting there had not been an upturn in economic activity which appeared to warrant any reduction in the flow of money and credit and the Committee believed that in supplying reserves to the market in the weeks ahead, any doubts should be resolved on the side of ease rather than the reverse. The Committee recognized that credit policy was only one part of the whole complex, but it felt that the economic outlook at the time warranted a continuation of the existing credit policy of actively maintaining a condition of ease in the money market, and it therefore renewed its directive in the same form that had been approved at the three preceding meetings.³

E. MODERATE EASE

December 7, 1954

The objective of policy was changed from "active ease" to "ease."

This directive was changed in only one respect from the directive approved at the December 1953 and the March, June, and September 1954 meetings: the word "actively" was deleted from clause (b) of the first paragraph so as to provide that transactions in the System open market account should be with a view, among other things, "to promoting growth and stability in the economy by maintaining a condition of ease in the money market." For a year preceding this meeting, the clause had provided that transactions should be with a view "to promoting growth and stability in the economy by actively maintaining a condition of ease in the money market."1

The degree of ease continued to diminish through July, 1955. The Committee, while changing the directive, reiterated that it was not yet pursuing restraint.

January 11, 1955

Clause (b) of the directive was changed at this meeting to provide that transactions for the System open market account should be with a view, among other things, "to fostering growth and stability in the economy by maintaining conditions in the money market that would encourage recovery and avoid the development of unsustainable expansion."2

The Committee's conclusion that, in order to avoid the development of unsound conditions, it should not continue to promote "ease" in credit availability, was a shift in emphasis, a further step away from the policy of "active ease" that had been pursued . . . .3

On the other hand, the change in directive at this meeting did not call for pursuit at this stage of a program

1Annual Report, 1954, p. 98.
of credit restraint or of firmness in the money market.\textsuperscript{1}

\textbf{March 2, 1955}

Thus, while policy had not become restrictive, it had recently resulted in some restraint on the rate of credit expansion. The Committee concluded that this policy was appropriate to the current needs of the economy, and it agreed that, although increased ease should be avoided, further measures toward restraint should be deferred until the effects of the shift in operations that had taken place since the beginning of the year were more apparent.\textsuperscript{2}

\textbf{May 10, 1955}

This directive was modified from that approved at the meetings on January 11 and March 2, 1955 by changing clause (b) to delete the words "encourage recovery" and to make the clause read "to fostering growth and stability in the economy by maintaining conditions in the money market that would avoid the development of unsustainable expansion."\textsuperscript{3}

Like the change made in the directive of the Federal Open Market Committee in January, the change approved at this meeting was a further shift in emphasis toward a policy that would discourage undue credit expansion. It meant that the Committee was aiming at a lower level of free reserves of banks, and that consequently credit might cost more and be somewhat less readily available.\textsuperscript{4}

\textbf{June 22, 1955}

After considering all factors, the Committee concluded that for the immediate future it should not alter the course it had been following recently which had had a restraining influence on credit expansion, that reserves should be supplied to the market on the basis of current needs, and that operations for the System account should be directed toward maintaining about the existing degree of pressure on the reserve position of banks.\textsuperscript{5}

\begin{enumerate}
\item \textit{Annual Report}, 1955, p. 90.
\item \textit{Annual Report}, 1955, p. 91.
\item \textit{Annual Report}, 1955, p. 95.
\item \textit{Annual Report}, 1955, p. 96.
\item \textit{Annual Report}, 1955, p. 99.
\end{enumerate}
July 12, 1955

The Committee was clear that there should be no easing of the situation, but it did not feel that a more restrictive credit policy was immediately necessary.¹

F. RESTRAINT

August 2, 1955

At this meeting, the Federal Open Market Committee changed clause (b) of its directive to the Federal Reserve Bank of New York to provide that transactions for the System open market account be with a view, among other things, "to restraining inflationary developments in the interest of sustainable economic growth."²

August 23, 1955

The directive to the Federal Reserve Bank of New York was renewed at this meeting in the same form as the directive approved at the meeting of the Committee on August 2, 1955, at which time it was agreed that operations for the System open market account should be with a view, among other things, "to restraining inflationary developments in the interest of sustainable economic growth."³

September 14, 1955

Review of the available data suggested that the economy had entered a phase of decelerating advance. . . . It was the judgment of the Committee that this situation called at least for the maintenance of, and preferably for some slight increase in, the restraining pressure it had been exerting through open market operations. To carry this out, it renewed the directive calling for restraint on inflationary developments through maintaining pressure on the reserve position of banks, but with the additional understanding that doubts should be resolved on the side of increased pressure.⁴

Throughout the year 1955, the same directive was issued and the policy of restraint was continued.

¹ Annual Report, 1955, p. 100.
October 4, 1955

... the current and prospective momentum of economic activity was such that the Committee concluded the situation called for continuing the present policy of restraint without allowing the restraint to become so severe as to accentuate any tendency toward a downturn in the economy that might develop.1

October 25, 1955

... it was understood that while the Committee wished to maintain a restraining influence on the credit situation, it did not wish to increase pressure drastically.2

November 16, 1955

In considering these several factors, the Committee agreed that, while the Federal Reserve should operate to restrain excesses, it should avoid undue pressure on the supply of reserves through more restrictive open market operations at a time when the Treasury was getting ready to announce its financing and during a period in which the money market and banks might be adjusting to an increase in the discount rate. Under these circumstances, the Committee renewed the existing directive with the understanding that, while it was trying to move in the direction of maintaining tightness, it should not be concerned if operations in the open market during the immediate future did not achieve as great a degree of tightness as had existed recently.3

December 13, 1955

A sharp increase in pressure on the reserve position of banks had taken place during the four weeks ending November 23, but this had been followed by some easing after the System injected a substantial volume of reserve funds into the market during the last week of November and the first week of December, when market conditions were affected by a combination of seasonal reserve pressures, the increase in Reserve Bank discount rates in mid-November, and the Treasury’s refunding and cash financing operations. With the passage of that difficult period, it seemed desirable to attempt to regain as far as possible the level of pressure that had

1Annual Report, 1955, p. 106.
existed around November 23, just prior to the announce-
ment of the Treasury's refunding. The Committee recog-
nized, however, that it might not be possible—or even
desirable—to reestablish all of the pressure that had
existed in November, partly because of the year-end
needs that were developing. After considering these
factors, it concluded that the general policy of re-
straint followed in recent months should be reaffirmed
with a view to regaining, without causing sudden market
disturbances, as much as possible of the level of pres-
sure that had existed shortly before the announcement of
the Treasury refunding operation near the end of
November.\footnote{Annual Report, 1955, p. 111.}

A general policy of restraint was in effect throughout
1956, though the intensity varied.

\textbf{January 10, 1956}

This action continued the policy of restraint on credit
expansion in the same terms that had been used in each
directive issued by the Committee since August
1955.\footnote{Annual Report, 1956, p. 18.}

\textbf{January 24, 1956}

The Committee changed its directive:

\ldots{} by adding to clause (b) an instruction that trans-
actions for the System account, in addition "to re-
straining inflationary developments in the interest of
sustainable economic growth," should take "into account
any deflationary tendencies in the economy."\footnote{Annual Report, 1956, p. 19.}

The net of the Committee's review was that there had
been a slight—perhaps almost imperceptible—change in
the state of the economy in recent weeks, which might
make some relaxation of restraint appropriate in the
near future.\ldots{} Thus, for the purpose of emphasizing
flexibility, the Committee added the instruction to take
into account any deflationary tendencies in the economy
while carrying out operations directed toward restrain-
ing inflationary developments.\footnote{Annual Report, 1956, p. 20.}
March 6, 1956

Its conclusion, therefore, was to continue the existing policy without any overt action toward either increasing or lessening the degree of restraint that then existed.¹

March 27, 1956

The Committee modified its directive . . . by deleting from clause (b) of the first paragraph the instruction to take "into account any deflationary tendencies in the economy" while effecting transactions in pursuit of the general policy of "restraining inflationary developments in the interest of sustainable growth."²

The Committee was aware that the economy had recently been on a plateau, and the expectations for an economic upturn were expressed in this meeting. However, the Federal Reserve was primarily concerned about inflation.

The Committee discussed the extent to which monetary policy might be used to combat an inflationary cost-price spiral and the risk of incurring temporary unemployment on the one hand, as against the risk of undermining the basis of sustained employment on the other. It was suggested that while monetary policy could not be expected to achieve all of the task of combating inflationary pressures, the System would be derelict in its duty if it did not exercise additional restraint in this situation.³

April 17, 1956

The Committee therefore agreed that there should be no relaxation of pressures. However, the restrictive policy should not be pressed too strongly pending more opportunity to observe reactions to the mid-April increase in discount rates, increased pressure on bank reserve positions, and clarification of the economic outlook.⁴

¹Annual Report, 1956, pp. 22-23.
²Annual Report, 1956, p. 25.
⁴Annual Report, 1956, p. 28.
May 9, 1956

The Committee's decision to make no change in the existing policy reflected its belief that credit restraint continued suitable to the situation and that no change either toward increased pressure or toward relaxation would be justified at this time.1

May 23, 1956

At this meeting the Committee restored to clause (b) of its directive . . . an instruction to take into account deflationary tendencies in the economy while pursuing a general policy of restraining inflationary developments.2

June 5, 1956

Economic data presented at this meeting confirmed that a sidewise movement in activity was continuing.3

In view of the atmosphere of uncertainty that still existed in some quarters, it appeared desirable for the Committee to continue a program that would dispel any doubts as to its readiness to meet seasonal and other temporary reserve needs. . . . The Committee did not wish policy to become more restrictive at this stage of the sidewise movement in the economy, although it was satisfied that no material change from the general policy of restraining inflationary developments was called for.4

June 26, 1956

The Committee agreed that, within the framework of the restrictive policy it had been following, doubts should be resolved on the side of ease during the next few weeks, rather than on the side of actions that might be construed as additional restraint, even though there was the possibility that the System would find it desirable to move toward substantially greater restraint in the fall.5

July 17, 1956

The Committee adopted without change the same directive adopted at the March 23, 1956 meeting.

At the moment, continuation of firm restraint seemed necessary not only because most current indicators were tending upward but also because it was felt that whatever settlement of the steel strike was arrived at would create additional inflationary pressures. The Committee did not believe, however, that this was the time for clearly increased restraint.¹

August 7, 1956

At this meeting the Committee deleted from the directive any mention of controlling deflationary tendencies in the economy.²

August 21, 1956

The Committee felt that credit policy should be made somewhat more restrictive, but in view of the fact that individual Federal Reserve Banks were known to be considering discount rate increases at a time when the market for Government securities was showing strain, the directive was renewed with no change in the general open market policy of restraint on credit expansion.³

September 11, 1956

In renewing its directive without change, the Committee did so with an instruction to the Management of the System Account to maintain substantially the existing degree of stability in the market, with doubts being resolved on the side of tightness rather than of ease, but with the understanding that the Account Management would not initiate action toward more tightness.⁴

September 25, 1956

... the general policy directive should not be

¹Annual Report, 1956, p. 34.
²See Annual Report, 1956, p. 35.
changed, that operations for the System account should limit additions to reserves to meet seasonal needs so as to maintain pressures of about the same degree that had existed recently, but that in case of doubt operations should be resolved on the side of ease rather than restraint during the period immediately ahead.\textsuperscript{1}

October 16, 1956

The consensus of the Committee was that no change should be made at this time in the policy of restraint on inflationary developments. This did not imply a greater degree of restraint, for the Committee wished to avoid a tightening that might seriously unsettle the capital markets and intensify the demand for short-term credit. It observed that seasonal demands for credit could be expected automatically to cause some tightening during the next several weeks, besides which additional Treasury financings for cash and refunding would exert further pressure. The Committee also observed that banks could use the Federal Reserve discount facilities as pressure increased. In addition, it contemplated that, if undue tightening developed, reserves should be supplied through the open market with a view to maintaining substantially the present degree of restraint.\textsuperscript{2}

November 13, 1956

Accordingly, in continuing its policy of credit restraint, the Committee did so with the thought that another meeting should be held within two weeks, that in the meantime the degree of pressure in the money market should remain substantially unchanged . . . .\textsuperscript{3}

November 27, 1956

. . . in adding to the directive the qualifying instruction to recognize "additional pressures in the money, credit, and capital markets resulting from seasonal factors and international conditions" the Committee did not intend an overt change away from a policy of restraint . . . .\textsuperscript{4}

\textsuperscript{1} Annual Report, 1956, pp. 40-41.

\textsuperscript{2} Annual Report, 1956, p. 42.

\textsuperscript{3} Annual Report, 1956, p. 43.

\textsuperscript{4} Annual Report, 1956, p. 45.
December 10, 1956

The Committee issued its policy directive in the same form that it was issued two weeks earlier.

This directive called for continued restraint on inflationary developments in the interest of sustainable economic growth, while recognizing additional pressures in the money, credit, and capital markets resulting from seasonal factors and international conditions.¹

January 8, 1957

... the directive issued at this first meeting of 1957 continued the policy of restraint upon credit expansion that had been in effect for approximately two years...²

January 28, 1957

These mixed developments suggested on balance that, while the situation still seemed to be one of pressures on the expansionary side requiring continued restraint on credit growth, care was needed to avoid becoming too restrictive. ... It was believed that operations now should be designed toward restoring approximately the degree of restraint of the late November--early December period, but it was not believed that an increase in that level of restraint was called for at this particular time.³

February 18, 1957

Credit developments in recent weeks had continued to indicate a relaxation of pressures, with rapid bank loan liquidation, less strain on bank reserve positions, a sharp decline in money rates, and an improved tone in the bond market which had permitted sale of a large volume of new issues of securities at declining yields. This easing of inflationary pressures was the goal toward which monetary forces had been directed. ... The Committee's conclusion was that this was a time calling for continuation of the status quo, and on that basis no change in the policy directive was deemed necessary or

¹Annual Report, 1956, p. 45.
²Annual Report, 1957, p. 35.
desirable.\(^1\)

March 5, 1957

The general direction of policy continued to be one of restraining inflationary developments.\(^2\)

March 26, 1957

The policy directive calling for continued restraint on inflationary developments was renewed.

\[\ldots\] doubts should be resolved on the side of greater rather than less restraint than had existed in recent months.\(^3\)

April 16, 1957

The Committee considered that the increased degree of pressure that had resulted since the preceding meeting had been appropriate.\(^4\)

May 7, 1957

Renewal of the directive without change was on the basis that current developments made a continuation of substantially the existing degree of restraint appropriate and that no overt action to ease or to tighten the situation was called for.\(^5\)

From May through October, 1957, the existing policy of restraint on inflationary developments was renewed at each meeting.\(^6\) In August, 1957, discount rates were raised from 3 to 3\(\frac{1}{2}\)\% at all Reserve Banks.\(^7\)

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\(^1\)Annual Report, 1957, p. 40.


\(^3\)Annual Report, 1957, p. 44.

\(^4\)Annual Report, 1957, p. 45.

\(^5\)Annual Report, 1957, p. 46.

\(^6\)Annual Report, 1957, pp. 46-54.

\(^7\)Annual Report, 1957, p. 32.
G. MODERATE RESTRAINT

November 12, 1957

Data presented to the Committee at this meeting showed that the economic climate domestically was in process of change, that expansive forces had eased, and that contractive forces had become more prominent.¹

The Committee's decision at this meeting was that action should now be taken to recognize the change in the general economic situation away from the sidewise movement that had prevailed during most of 1957. This did not signify a shift that would entirely eliminate restraint on credit expansion, but it did reflect a decision that there should be a moderate relaxation of the degree of restrictive pressure. It was on the basis of this general view that the directive was changed to eliminate the previous clause (b) which had called for restraining inflationary pressures and to replace that clause with wording that provided for open market operations with a view, among other things, "to fostering sustainable growth in the economy without inflation, by moderating the pressures on bank reserves."²

In mid-November, discount rates were reduced from 3 1/2% to 3% at all Reserve Banks.³ In general, the Federal Reserve continued to diminish the degree of restraint.

December 3, 1957

... the general view of the Committee was that there should be further moderating of the restrictive pressures on credit expansion and, for this reason, the directive was renewed with the same terms that had been approved at the meeting on November 12 calling for "fostering sustainable growth in the economy without inflation, by moderating the pressures on bank reserves."⁴

December 17, 1957

The policy directive of the Federal Open Market Committee was changed at this meeting to provide that

²Annual Report, 1957, p. 56.
³Annual Report, 1957, p. 32.
transactions for the System open market account were to be with a view, among other things, "to cushioning adjustments and mitigating recessionary tendencies in the economy."¹

The recession was still of moderate intensity, and inasmuch as the Committee actions taken since mid-November to lessen pressures on reserves, together with the reduction in Reserve Bank discount rates, had signaled an effective change in policy toward less severe credit restraint, it did not appear to the Committee that additional major actions were necessary at the moment.²

H. MODERATE EASE

January 7, 1958

At this meeting no change was made in the policy of diminished restraint begun in November, 1956. A sharp decline in interest rates combined with a seasonal increase in bank loans and investments after November helped to offset the recessionary tendencies and thus allowed the Federal Reserve more time to see if an upturn would develop without further policy action.

The Federal Reserve System had supplied over $1 billion of reserves to the banking system during the six weeks prior to the end of the calendar year, and those reserves had contributed to credit expansion as well as currency expansion a little in excess of seasonal estimates. In brief, recent policies designed to cushion adjustments and mitigate recessionary tendencies in the economy had established the basis for maintaining the privately owned money supply.³

This quarter was termed the beginning of ease by Hickman.⁴ The Federal Reserve, in the March 25, 1958, meeting, stated that it had been moving toward ease for the

¹Annual Report, 1957, p. 60.
³Annual Report, 1958, p. 35.
⁴See Hickman, pp. 343-44.
previous 130 days,\textsuperscript{1} which would obviously include the first quarter, 1958.

\textbf{January 28, 1958}

In all the circumstances, the Committee concluded that, even though the level of economic activity was continuing to decline, there should be no change at this meeting in the policy of supplying reserve funds in a manner that would cushion adjustments and mitigate recessionary tendencies in the economy and that, in view of the desirability of having an "even keel" during the period of the Treasury financing, open market operations should be directed toward maintaining approximately the same condition in the money market that had existed immediately prior to this meeting.\textsuperscript{2}

Accordingly, for the present it was felt that the Committee should continue to follow an "even keel policy tipped on the side of ease." In these circumstances, no change was made in the existing policy directive.\textsuperscript{3}

\textbf{I. EASE}

\textbf{March 4, 1958}

\ldots the directive was changed at this meeting to provide, that, among other things, open market transactions would be with a view "to contributing further by monetary ease to resumption of stable growth of the economy."\textsuperscript{4}

\textbf{March 25, 1958}

The record of free reserves and short-term interest rates since the last Committee meeting suggested that the degree of ease desired by the Committee had been achieved.\textsuperscript{5}

In the last 130 days the System had moved on a broad front to establish a condition of credit ease. Aside

\textsuperscript{1}\textit{Annual Report}, 1958, p. 44.
\textsuperscript{2}\textit{Annual Report}, 1958, p. 37.
\textsuperscript{3}\textit{Annual Report}, 1958, p. 39.
\textsuperscript{4}\textit{Annual Report}, 1958, pp. 40-41.
\textsuperscript{5}\textit{Annual Report}, 1958, p. 43.
from open market operations making reserves more readily available, the discount rates of the Federal Reserve Banks had been reduced in several steps from 3% per cent to 2% per cent, the latest reduction having been effected in the period since the last meeting of the Committee. In addition, there had been two reductions totaling one percentage point in member bank reserve requirements against demand deposits, the more recent of which became effective for central reserve and reserve city banks on March 20, 1958, and would become effective for other banks on April 1, 1958. The present posture of Federal Reserve policy was one of ease and it was the view of the Committee that it should continue to be such.1

April 15, 1958

The policy of ease was continued.

May 6, 1958

Since the preceding meeting of the Committee, there had been a further reduction to 1 3/4 per cent in the discount rates of most of the Federal Reserve Banks along with a further reduction of one-half percentage point in reserve requirements against demand deposits at central reserve and reserve city banks, while open market operations had been such as to maintain free reserves generally exceeding $500 million.2

The pattern of economic and financial developments caused the Committee to conclude that the prevailing policy of ease should be continued and that no change should be made in the outstanding policy directive.3

May 27, 1958

In the light of these estimates and related factors, including the imminent and sizable Treasury financing operation, the Committee considered how best to implement and maintain the current posture of monetary ease without further depressing Treasury bill rates. It was the consensus that no change should be made in the language of the policy directive and that operations in the System Account should be directed toward maintaining an even keel over the ensuing period. In terms of approach, this contemplated that the Account Management

1Annual Report, 1958, p. 44.
would place emphasis on the tone and action of the market and the course of credit developments.1

June 17, 1958

... it did not appear that the time had arrived for backing away from the Committee policy of outright monetary ease or for creating a public impression that the Committee might be backing away from it. There was general agreement that over-all Federal Reserve credit policy should not be changed at this time and that, during the next three weeks, the System should stay about where it was.2

July 8, 1958

... there should be no change in policy at this time and that the directive should be renewed in its existing form calling for continued monetary ease.3

On July 18, and July 23, 1958, the Committee decided to buy Government securities. On the first date, the purchase was longer term securities to steady a disorderly market, and on the second, to affect a "swap"--i.e., an offsetting purchase and sale of securities to change the maturity structure of the Federal Reserve System's portfolio.

J. MODERATE RESTRAINT

A policy reversal away from ease was underway.

July 29, 1958

The wording of the Committee's directive was changed at this meeting to delete the clause that had been in effect since March 4, 1958, and which called for operations that would contribute further by monetary ease to resumption of stable growth of the economy, and to replace that clause with an instruction to the Federal Reserve Bank of New York that operations for the System Account were to be with a view, among other things to

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1Annual Report, 1958, p. 50.


3Annual Report, 1958, p. 53.
recapturing redundant reserves.\textsuperscript{1}

\textbf{August 4, 1958}

The Committee agreed that for the present, having re-
captured redundant reserves, the policy to be followed
with respect to operations for the System Open Market
Account should be one of keeping from having redundant
reserves.\textsuperscript{2}

\textbf{August 19, 1958}

The policy directive was changed:

... to provide that ... transactions be with a view
to "fostering conditions in the money market conducive
to balanced economic recovery."\textsuperscript{3}

In discussing an increase in the discount rate of the
Fed in San Francisco, the Committee stated:

The reasons for this rate increase, which are presented
in the section of this report dealing with policy actions
of the Board of Governors of the Federal Reserve System,
were reviewed at this meeting, and the rate increase was
considered to be consistent with the action taken by the
Open Market Committee in deciding to move toward reduced
reserve availability.\textsuperscript{4}

\textbf{September 9, 1958}

There was general agreement, ... operations for the
System Account should aim at maintaining substantially
the same tone in the money market as prevailed at the
time of this meeting.\textsuperscript{5}

Upward adjustments in interest rates and discount
rates occurred during this period. However, from September
through November, 1958, no changes occurred in objectives or

\textsuperscript{1}Annual Report, 1958, p. 57.
\textsuperscript{2}Annual Report, 1958, p. 58.
\textsuperscript{3}Annual Report, 1958, p. 59.
\textsuperscript{4}Annual Report, 1958, pp. 60-61.
\textsuperscript{5}Annual Report, 1958, p. 62.
in policy.1

December 2, 1958

The degree of restraint was increased:

The policy discussion by the Committee pointed to some increase in the degree of restraint that should be exerted, with the proviso that due consideration must be given to the financing problems of the Treasury. It was suggested that there was enough flexibility within the Committee's general policy to allow seasonal forces to exert an influence in the direction of some further reduction in reserve availability, perhaps moving in the direction of net borrowed reserves.2

December 16, 1958

... it was believed that a move toward somewhat greater restraint on the availability of reserves would be appropriate.3

January 6, 1959

There was general agreement that the Committee should attempt to maintain about the same degree of restraint on credit expansion during the immediate future that had applied in the recent past.4

January 27, 1959

Consequently, it was the view of the Committee that the current degree of restraint on bank reserves was appropriate under existing circumstances and should be continued ... 5

February 10, 1959

In reaching its decision to make no change in policy and to maintain the same degree of pressure on bank reserve positions that had been exerted recently, the Committee took particular account of the fact that the

3Annual Report, 1958, p. 69.
5Annual Report, 1959, p. 35.
large and almost continuous schedule of Treasury borrowings, together with potentially large private credit demands, showed every likelihood of bringing the capital markets increasingly under pressure, thus tightening credit conditions even without any aggressive System effort at restraint. ¹

Throughout March and April, 1959, it was decided that the existing policy of restraint was appropriate, and that policy was continued. ²

K. RESTRAIN

A movement toward greater restraint occurred in May.

May 5, 1959

However, upon review of current business and financial data, it was the majority view that it would be desirable to move toward greater restraint as soon as feasible after the Treasury financing . . . . ³

May 26, 1959

Clause (b) . . . of the Committee's policy directive was revised at this meeting so as to provide for increased restraint on credit expansion. This was indicated by adoption of wording specifying that open market operations should be conducted with a view "to restraining inflationary credit expansion in order to foster sustainable economic growth and expanding employment opportunities." ⁴

June 16, 1959

Bill rates moved up sharply and the discount rate increased from 3½% to 3¾%. The policy of restraint was continued.

July 7, 1959

No change in either directives or objectives occurred.

¹Annual Report, 1959, p. 36.
²Annual Report, 1959, pp. 36-42.
⁴Annual Report, 1959, p. 44.
July 28, 1959

... the consensus favored aiming as far as practicable at the same degree of restraint on credit expansion as currently prevailed. 1

August 18, 1959

The conclusion reached by the Open Market Committee was to aim toward maintenance of the status quo, that is, continuation of the existing degree of restraint, during the period immediately ahead ... . 2

September 1, 1959

The majority of the Committee favored maintenance of the existing degree of pressure on reserve positions of banks in the period immediately ahead, but no intensification ... . 3

September 22, 1959

... the degree of restraint to be maintained in the market during the next few weeks should be about the same as in the recent past, but that any deviations preferably should be on the side of less restraint ... . 4

October 13, 1959

... little reason for either increasing restraints or providing additional stimulants to the economy ... . 5

November 4, 1959

... after analysis of business and financial developments, that there should be no change in basic policy at this time ... . 6

1Annual Report, 1959, p. 52.
4Annual Report, 1959, p. 57.
5Annual Report, 1959, p. 58.
November 24, 1959

The consensus of this meeting favored maintaining the same degree of restraint.¹

December 15, 1959

The prevailing opinion was that any lessening of restraint at this time would be unwise.²

January 12, 1960

The consensus . . . favored no change in credit and monetary policy, which had been directed for several months toward restraint on credit expansion.³

January 26, 1960

The Committee's decision as to policy for the period immediately ahead was to continue substantially the same degree of restraint on credit expansion that had been followed for some weeks past.⁴

February 9, 1960

. . . the action taken was to renew the directive, which called for restraining inflationary credit expansion . . . .⁵

L. MODERATE RESTRAINT

March 1, 1960

. . . policy directive was revised at this meeting so as to provide that open market operations should be conducted with a view "to fostering sustainable growth in economic activity and employment while guarding against excessive credit expansion."⁶

¹Annual Report, 1959, p. 60.
²Annual Report, 1959, p. 64.
⁵Annual Report, 1960, p. 41.
... the consensus favored, for the immediate future, a policy of moderately less restraint.¹

March 22, 1960

There was a clear consensus, in the light of current business uncertainties, the nature of financial developments, and the imminence of Treasury financing, scheduled for announcement around the end of the month, that open market operations during the period immediately ahead should be directed toward maintaining about the existing situation, with no tightening and with no further relaxation.²

Further easing of restraint occurred in the next two meetings.

April 12, 1960

Although some members of the Committee were inclined to feel that conditions were such as to warrant continuation of the prevailing degree of restraint, the consensus as to open market policy for the ensuing three weeks favored easing further the reserve positions of member banks, and thus encouraging an increase in the money supply, this to be done, however, in a modest way.³

May 3, 1960

It was the consensus of the Committee that current conditions justified moving modestly in the direction of increasing the supply of reserves available to the banking system. The Committee concluded that this further relaxation of restraint could be accomplished within the scope of the existing policy directive...⁴

¹Annual Report, 1960, p. 43.
³Annual Report, 1960, p. 50.
⁴Annual Report, 1960, p. 53.
May 24, 1960

The consensus resulting from evaluation of the current situation favored a further supplying of reserves through open market operations with a view to permitting a moderate expansion of bank credit and encouraging an increase in the money supply which thus far had failed to respond to the easing steps taken by monetary policy. In line with this consensus, and since the prospect of undue credit expansion in the near-term future seemed to have become remote, the Committee changed clause (b) of the directive so as to emphasize that the providing of reserves needed for moderate expansion of bank credit constituted an objective of policy at this stage.¹

June 14, 1960

. . . the consensus at this meeting favored waiting watchfully in the period immediately ahead, although with the understanding that any deviations in the conduct of open market operations should be on the side of ease rather than restraint.²

July 6, 1960

. . . the consensus for the period immediately ahead was to continue to provide reserves at approximately the present rate, within the general framework of the existing policy directive . . . .³

July 26, 1960

. . . open market operations should continue to make reserves for bank deposit expansion readily available. Accordingly, the directive to the New York Bank which called for fostering sustainable growth in economic activity and employment by providing reserves needed for moderate bank credit expansion was renewed.⁴

August 16, 1960

... the Committee's policy directive was changed to provide that open market operations should be conducted with a view "to encouraging monetary expansion for the purpose of fostering sustainable growth in economic activity and employment." 1

September 13, 1960

The consensus as to open market operations called for supplying needed reserves readily, avoiding the development of seasonal strain in bank reserve positions, and resolving doubts on the side of ease, with the understanding, as at the previous meeting, that such operations would be conducted more on the basis of the tone of the market than on the basis of statistical yardsticks. 2

For the remainder of 1960, the existing degree of ease was maintained. 3 The goal of the Federal Reserve during this entire period of ease (1960-62) was to provide adequate reserves to the banking system to encourage domestic growth, while preventing further decline in short-term rates.

October 25, 1960

... there was a general view that it would be desirable if the objective indicated by the consensus could be accomplished with a minimum of downward pressure on the 90-day Treasury bill rate, particularly in light of the disparity already existing between that rate and short-term rates abroad. If, however, a conflict should arise between providing additional reserves and a further decline in the bill rate, it was understood that the first of these considerations would take preference. 4

This policy of ease continued through 1961:

1 Annual Report, 1960, p. 61.
2 Annual Report, 1960, p. 64.
3 See Annual Report, 1960, pp. 65-75.
4 Annual Report, 1960, p. 69.
January 24, 1961

... consensus ... was that there should be no change in the existing degree of monetary ease and that in operating the Open Market Account the Management should continue to give close attention to the level of short-term rates in view of the current international financial situation.1

A similar statement, that the Federal Reserve would attempt to maintain the existing degree of ease, was repeated at every meeting from February through June, 1961.2 Changes in policy directives occurred in April and June:

April 18, 1961

At this meeting clause (b) ... of the ... policy directive ... was changed to provide that open market operations should be conducted with a view "to encouraging expansion of bank credit and the money supply so as to contribute to strengthening of the forces of recovery that appear to be developing in the economy, while giving consideration to international factors."3

June 6, 1961

At this meeting, the Federal Open Market Committee, in directing that open market operations be with a view "to encouraging expansion of bank credit and the money supply so as to contribute to strengthening of the forces of recovery, while giving consideration to international factors," modified the wording of the preceding policy directive by deleting the phrase "that appear to be developing in the economy," qualifying words that had followed "the forces of recovery" in the directive that had been in effect since April 18, 1961.4

July 11, 1961

... monetary policy should continue to encourage further expansion in bank credit and the money supply in order to provide additional stimulus to the forces of

economic recovery. . . . open market operations should be designed to maintain approximately the same degree of ease that had recently prevailed . . . .

August 1, 1961

Therefore, the consensus favored continuation of approximately the same degree of ease that had been maintained recently.

August 22, 1961

The directive was changed to provide:

. . . for open market operations with a view to encouraging credit expansion so as to promote fuller utilization of resources, while giving consideration to international factors.

However, for the ensuing 3-week period the consensus favored continuing about the same degree of ease that had prevailed, except during the period in early August when a confluence of market factors contrived to produce more firmness than had otherwise been the case. The change in the language of the directive therefore did not signify an intent to effect any immediate change in System policy. Instead, it reflected the view of the Committee that the amended wording was more appropriate at a time when the domestic economy was progressing from the stage of recovery into an expansionary phase.

October 3, 1961

. . . the consensus favored continuation during the period immediately ahead of approximately the same degree of ease that had prevailed during recent weeks, in the belief that a need for some additional credit and monetary expansion existed in order to achieve higher levels of resource utilization.

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1Annual Report, 1961, p. 69.
3Annual Report, 1961, p. 73.
4Annual Report, 1961, p. 75.
5Annual Report, 1961, p. 79.
October 24, 1961

... consensus that a continuation of the monetary policy the Committee had been following would be appropriate from the standpoint of domestic conditions, though with a tendency to resolve any doubts arising in the conduct of open market operations on the side of less ease.1

November 14, 1961

... continuation for the period just ahead of a monetary policy calculated to produce approximately the same degree of ease that had prevailed for some time, except for the part of the preceding 3-week period in which a tendency toward a somewhat tighter money market had developed.2

December 5, 1961

The Open Market Committee, in considering the appropriate course of monetary policy for the period ahead, observed that the recent tendency toward a firming of money market conditions reflected pressures generated within the market itself rather than positive action on the part of the System. The fact that market forces had resulted in increasing somewhat the Treasury bill rate level was regarded as fortunate, in view of the balance of payments problem, and it was not felt that System operations to offset the effect of the prevailing market forces would be warranted. ... However, due to the absence of stresses and strains in the economy at the present time and in light of the several remaining points of uncertainty that tended to cast some doubt on the pattern of future economic developments, the consensus favored maintaining for the immediate future approximately the same policy in respect to the supplying of reserves that the Committee had been pursuing for some time.3

December 19, 1961

The current economic policy directive issued was:

It is the current policy of the Committee to permit further bank credit and monetary expansion so as to

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1Annual Report, 1961, p. 82.
promote fuller utilization of the economy’s resources, together with money market conditions consistent with the needs of both an expanding domestic economy and this country’s international balance of payments problem.

To implement this policy, operations for the System Open Market Account shall be conducted with a view to providing reserves for bank credit and monetary expansion . . . but with a somewhat slower rate of increase in total reserves than during recent months. Operations shall place emphasis on continuance of the 3-month Treasury bill rate at close to the top of the range recently prevailing. No overt action shall be taken to reduce unduly the supply of reserves or to bring about a rise in interest rates.1

It was the judgment of the Committee majority that improvements in the domestic economic situation coupled with the continuing balance of payments problem warranted a policy trending toward slightly less easy monetary conditions, with short-term interest rates near the high end of their recent range. However, in view of the facts that the unemployment rate, while reduced from earlier levels, was still relatively high and that there were no symptoms of inflationary pressures, the majority felt that no substantial change from recent policies was called for.2

January 9, 1962

It was the judgment of the Committee that both the economic situation and the desirability of maintaining an “even keel” in the money market during the period of the Treasury financing warranted making no change for the coming 2 weeks in the basic policy that had been decided upon at the previous meeting of the Committee (December 19, 1961).3

January 23, 1962

On balance, the Committee favored no change in the basic monetary policy that had been in effect for the past several weeks . . . .4

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1Annual Report, 1961, p. 89.
February 13, 1962

Reports at this meeting suggested that, while the prospects for continued economic expansion remained good, there had been some recent hesitation in the forward movement of the economy.1

... the Committee concluded that it would be appropriate to continue its recent credit policy for the coming 3 weeks.2

March 6, 1962

The majority favored no change in policy ... 3

March 27, 1962

Most members felt that the balance of payments situation continued to call for a domestic interest-rate structure that would not encourage outflows of funds, and thus were concerned about the declining tendency in interest rates. This tendency, it was noted, might well be accentuated by continuing to provide reserve availability to facilitate expansion in bank credit domestically, which most members also regarded as desirable. . . . The majority, however, concluded that on balance no significant change in policy should be made.4

April 17, 1962

The majority of the Committee members agreed, although with some differences of interpretation and emphasis, that no change was indicated at this time in monetary and credit policy or in the wording of the current directive ... 5

May 8, 1962

Upon consideration of these mixed developments, it was the majority view that the current posture of monetary policy continued to be appropriate, pending the availability of further information on the strength of

1Annual Report, 1962, p. 52.
4Annual Report, 1962, p. 70.
5Annual Report, 1962, p. 73.
the improvement in economic conditions and on the state of business and financial confidence.\(^1\)

May 29, 1962

A view also was expressed, however, that the degree of ease that had prevailed was still needed to facilitate further domestic expansion.

In recognition of the sharp decline in the stock market, there was general agreement that no change of policy should be made at this meeting of the Committee.\(^2\)

0. MODERATE EASE

June 19, 1962

In view of the continuing concern for the international position of the dollar and the further, even though gradual, improvement in the domestic economy, a majority of the Committee concluded that a time had been reached when a slightly less easy monetary policy was indicated.\(^3\)

The following directive was issued:

It is the current policy of the Federal Open Market Committee to permit the supply of bank credit and money to increase further, but at the same time to avoid redundant bank reserves that would encourage capital outflows internationally. . . .

To implement this policy, operations for the System Open Market Account during the next 3 weeks shall, to the extent consistent with the behavior of financial markets, be conducted with a view to providing a somewhat smaller rate of reserve expansion in the banking system than in recent months and to fostering a moderately firm tone in money markets.\(^4\)

July 10, 1962

Within the Committee, there were some differences of emphasis and interpretation in relating domestic and international developments to current monetary policy. The consensus, however, was for continuation of the

\(^1\)Annual Report, 1962, p. 76.
\(^2\)Annual Report, 1962, p. 78.
\(^3\)Annual Report, 1962, p. 80.
degree of ease contemplated by the policy adopted at the June 19 meeting.\(^1\)

In order to make clear that no further reduction from the present degree of ease was intended, the wording of the current policy directive was modified to clarify that intent.\(^2\)

**July 31, 1962**

A minority of the Committee favored a policy of greater monetary ease as a means of stimulating domestic economic expansion or of helping to stave off possible setback in the economy. However, the majority, after weighing such considerations as the continued evidence of adequate domestic liquidity on one side and the unsatisfactory prospects for the balance of payments on the other, and noting that a Treasury financing was currently in progress, concluded that an "even keel" policy was appropriate for the forthcoming period.\(^3\)

**August 21, 1962**

A majority of the Committee concluded that, on balance, circumstances warranted a continuation of recent monetary policy.\(^4\)

**September 11, 1962**

A majority of the Committee concluded that, in view of continued evidence of adequate domestic liquidity and continuing indications of unsatisfactory progress with respect to the balance of payments, monetary policy should remain unchanged for the next 3 weeks.\(^5\)

**October 2, 1962**

... after taking into account the continuing balance of payments deficit as well as the supply of bank credit already available to meet credit demands, the majority view favored a continuation of current policy for the

\(^1\text{Annual Report, 1962, p. 84.}\)

\(^2\text{Annual Report, 1962, p. 84.}\)

\(^3\text{Annual Report, 1962, pp. 88-89.}\)

\(^4\text{Annual Report, 1962, p. 91.}\)

\(^5\text{Annual Report, 1962, p. 93.}\)
next 3 weeks.¹

October 23, 1962

In view of the uncertainties presented by the international crisis and the imminence of a Treasury refunding, there was unanimous agreement that no change should be made in policy at this meeting, although the Committee should be prepared to deal promptly with whatever problems might arise.²

November 13, 1962

This was a period of slightly greater ease; the following directive was issued:

In view of the recent stability of economic activity, with a margin of underutilized resources and an absence of inflationary pressures, it is the current policy of the Federal Open Market Committee to encourage moderate further increase in bank credit and the money supply, while avoiding money market conditions unduly favorable to capital outflows internationally. It is also the Committee's policy to cushion such unsettlement in money markets as may stem from international developments of an emergency or near emergency character.

To implement this policy, operations for the System Open Market Account during the next 3 weeks shall be conducted with a view to providing moderate reserve expansion in the banking system and to fostering a steady tone in money markets.³

December 4, 1962

... the majority of the Committee members, including in the end some of those who initially had indicated a preference for shadings of slightly more or slightly less ease, voted in favor of no change at this time from the policy adopted at the November 13 meeting.⁴

December 18, 1962

A return to a less easy monetary policy was the prevailing sentiment:

... a somewhat less easy policy might be appropriate after the economy had passed the peak of seasonal credit demand. This now proved to be the majority position.¹

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**INTERVIEWS**

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Company Y, Houston, Texas. (Names withheld upon firm's request.) Interview, March, 1965.


**STATISTICS**


OTHER


