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SHOULD THE FEDERAL RESERVE BUY LONG-TERM SECURITIES?

Paper Delivered by

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SHOULD THE FEDERAL RESERVE BUY LONG-TERM SECURITIES?

It has recently been suggested that the Federal Reserve System could help to check the recession by buying long-term U. S. Government securities instead of limiting its market activities to the purchase and sale of bills. The so-called "bills only"<sup>1/</sup> policy was adopted by the Federal Open Market Committee on the recommendation of the Ad Hoc Subcommittee Report five years ago in the belief that this policy was conducive to the best functioning of the U. S. Government securities market. It is the purpose of this paper to re-examine this belief in the light of the actual operating experience of the last five years. The conclusion reached is that the potential contribution of direct intervention in the long-term capital market would under any circumstances be small and might under certain circumstances not only obstruct the functioning of the market but also slow up the responsiveness of Federal Reserve System decisions.

At the time that the current policy was adopted, it was criticized on the basis of a prevalent misconception that the Federal Reserve System influenced short-term interest rates primarily by buying or selling short-term U. S. securities, and similarly long-term interest rates by buying or selling long-term U. S. securities. The fact that interest rates on short and long-term securities tended in general to move together when only short-term securities were purchased or sold was ascribed to the magic of "arbitrage" and there were expressions of fear that if the System confined its operations to short-term securities arbitrage might not work in a recession crisis or might work so slowly as to leave us with a capital market position where high interest rates impeded the desire to borrow long-term capital funds.

1/ Actually "short-term securities, preferably bills."

The actual course of events since that time has shown that this relation of the System to the money and capital markets is not so simple as this implies. Long-term interest rates have been anything but lethargic, even though System open market operations have been confined almost wholly to bills. As a result, nobody any longer doubts, in the way they doubted in 1953, the System's ability to influence long-term interest rates decisively without direct intervention in the long-term market. In fact, in the most recent period, starting in mid-November 1957, the System has been a factor in one of the sharpest breaks of interest rates, both long and short, on record. In this case, the initial drop in rates followed the lowering of discount rates without any marked change in either short or long-term holdings of U. S. securities in the System portfolio. It has been widely noted that the basic reason for this dramatic shift was a complete turnabout in market expectations as to the direction of monetary policy rather than an immediate increase in the basic supply of reserves available to the banks for investment.

In view of this record and these developments, it may be worth while to set down in detail (a) the various ways in which Federal Reserve System policy actions actually affect the availability of funds and market rates of interest, (b) the manner in which these actions permeate the various sectors of the money and capital markets, and (c) certain aspects of the organization of the long-term open capital markets that create dangers when expectations of lower or higher interest rates are not firmly based on actual changes in the supply of loanable funds relative to the demand. It may also be useful in this connection to review actual experience of recent years, i.e., to assess on the basis of empirical evidence developed from the behaviour of the market, the relative importance of different System operations in affecting

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the cost and availability of funds. Such a background will provide perspective with which to judge the relevancy of the suggestion that the severity of the current recession might be mitigated by direct System intervention in the long-term market for U. S. securities.

Impact of System Open Market Operations on Availability of Capital and Credit and on Interest Rates

All policy actions of the Federal Reserve System exert an effect upon the capital and credit markets. It is not proposed, however, to analyze here the manner in which Federal Reserve discount policy operates. This has been covered in detail in the recently released Annual Report of the Federal Reserve Board for 1957. Nor will the effects on the money and capital markets of changes in the reserve requirements of member banks be reviewed in detail. Rather, the analysis will be focused on open market operations.

In this focus, Federal Reserve System operations in the Government securities market can be said to exert three strikingly different types of influence on prices and yields of outstanding securities.

(1) Open market operations bring about a change in the volume of issues outstanding in the market that are available for trading and investment. Federal Reserve System purchases, for example, withdraw securities from the market. They tend, consequently, to raise the prices of those that remain. Conversely, Federal Reserve System sales of securities add to the total volume of investments for which purchasers must be found in the market. Such sales, consequently, tend to depress the prices at which securities can be marketed. The relationship is one to one, i.e., each dollar of securities bought or sold withdraws or adds a dollar of securities to those that are available in the market. These effects are registered most strongly on the particular issues that are bought or sold, but, as is noted

later, the forces of substitution and arbitrage in the market or anticipation of such effects are such that they will also be reflected in some degree throughout all maturity sectors of the market.

(2) Federal Reserve System open market operations affect the prices and yields of U. S. Government securities because they change the volume of free reserves available to the member banks. System purchases of securities add to the volume of free reserves. Consequently, because we operate under a fractional reserve system, they add roughly between six or seven times as much to the total potential demand of the member banks for earning assets, including both loans and investments. Conversely, System sales of securities withdraw free reserves from the market, frequently causing member banks to borrow reserves through the System's discount window. Again, because we operate under a fractional reserve system, these sales decrease the potential demand of the member banks for earning assets, either loans or investments, by an amount equal to a multiple of the sales. In other words, the relationship of this type of impact is not one to one. The impact effect is a multiple of the dollars added to or subtracted from the reserve base. Since these impulses toward expansion or contraction arise from a change in the availability of reserves, their effects are not concentrated on the security that happened to be bought or sold by the Federal Reserve. They are directly dispersed, rather, over all types of assets commonly found in bank portfolios. These effects, furthermore, take place when free reserves change, no matter what factor is responsible for the change. To be specific, they are the same irrespective of whether open market operations are conducted in the short-term money markets, they are the same irrespective of whether the responsible factor is a change in reserve requirements, a change in the demand for currency, or a purchase or sale of gold.

(3) Finally, System operations in U. S. securities markets affect prices and yields in the securities markets, particularly in the short run, according to the expectations to which they give rise, especially the expectations of dealers and market professionals. The System holds the largest portfolio of U. S. securities by far of any investment institution. It is not restricted in its operations by considerations of profit. When it enters the market, it always operates for a purpose and it has very great means at its disposal to accomplish its purposes, far greater means than are at the disposition of any individual operator in the market. Finally, it operates from the very center of the market with more complete knowledge by far than any other transactor of the total of investment and financial transactions currently taking place.

Under these circumstances, market transactors, particularly the market professionals including the dealers, go to great lengths to try to ascertain the significance of all System policy actions, but particularly the significance of operations in the security markets. As professional participants in the market, they are, of course, immediately aware of the occurrence of practically all such transactions. It is vital to them to assess correctly the potential impact of System operations and to govern their own operations accordingly. In deciding on their own operations, they will not be likely to try to "buck" any trend or level of rates they think the System is trying to establish. Rather, they will try to anticipate such trends, both by closing out positions they expect to become less profitable and by establishing or increasing positions they expect to be favored by the trend. As a consequence, relatively small operations by the System Account can have major short-run effects on market quotations when they give rise to firm expectations among market professionals with respect to the direction of System policy.

It is important to note, however, that these effects are essentially short-run effects. Market professionals, including dealers, do not originate savings or supplies of investable funds nor do they originate demands for investment. They are essentially middlemen located at the heart of the market, seeking to anticipate by their trading the prices (or yields) that will clear the market. Not infrequently, consequently, the dealers overshoot the market in trying to estimate the significance of System moves. They may assume that a given purchase or sale foreshadows larger changes, say, in the free reserve position than are actually in contemplation. In such cases, they may take positions and establish, for a period, a level of yields and prices that cannot be sustained because it is inconsistent with the actual supply-demand situation. The existence of this possibility is one of the reasons for the System's adoption of a policy of nonintervention in the intermediate and long-term sectors of the market. Operations in bills are much less subject to comment and possible misinterpretation than operations in longer securities. They are less likely, consequently, to give rise to false expectations.

#### Fluidity, Substitutability and Arbitrage

The central open money markets, particularly the market for U. S. securities, are characterized by a high degree of responsiveness as between the various sectors, in the sense that fluctuations of any magnitude in any one sector are likely to be paralleled by similar fluctuations in other sectors. This phenomenon is often loosely described as resulting from arbitrage. It is often said, for example, that movements of yields and prices originating in the most sensitive and liquid sector of the market, the bill market, are transmitted to other sectors of the market with or without a certain amount of delay through the operation of arbitrage.

This ascribes much too much importance to the transactions of the market professionals who engage in arbitrage. Much more important and basic to their operations as professionals is the high degree of actual substitutability that exists for many lenders and many borrowers in the credit and capital markets. For example, commercial banks operate actively and hold positions for their own account in all major areas and in all major maturity sectors of the money markets. They also finance importantly the operations of other transactors in those various areas and sectors. In addition, managers of investment portfolios such as those of insurance companies and pension and trust funds, in seeking to maximize income, can operate with very great flexibility as between different categories of investments and, if it pays, between different maturity sectors. Among borrowers, also, there are many that can adopt a variety of financial plans to meet their financial needs. If they think the terms necessary to obtain more or less permanent funds will improve, they can postpone coming to the capital market and meet immediate needs by running down their liquidity or by borrowing at short term at banks. The professional finance companies are more or less continuously borrowing extensive amounts in the long, the intermediate and the short-term markets. Within limits, at any one time, they are free to shift the major impact of their borrowing to those sectors where financial costs appear most reasonable. Public bodies and Governments are typically present as heavy borrowers in all maturity sectors, both for new money and for refinancing. Because they enter the markets for large amounts, they are alert for signs of congestion as between the different maturity sectors and are careful to offer their issues in sectors which appear capable of readily absorbing the offering. It is these factors of broad substitutability on both sides of the money and capital markets that

account fundamentally for the homogeneity and responsiveness that is found there. They make possible the arbitrage operations of professional specialists. It is these professionals' operations, however, that account for the smoothness of the yield curve at any point of time.

With respect to this aspect of markets, therefore, we can make two relevant observations. (1) There is a considerable amount of interchangeability or substitutability on both the demand and the supply side of the organized money and capital markets that tends to generalize pressures or availabilities from any one sector to all sectors; (2) commercial banks are particularly important in this responsiveness because they operate, and also finance the operations of others, in all major sectors of the markets.

This casts a little different light on the generalization that changes in the tone or direction of the money markets are likely to appear first in the bill market and then to spread to the other sectors of the market. The generalization is true in the sense that it is usually easy to put money to work in the bill market and also to withdraw it at will without loss. It follows that any change in availability of funds is likely to be reflected immediately in the bill market. It does not follow, however, that the fact that funds have been committed to bills when, say, free reserves are increasing, implies they are thereby rendered unavailable for investment in mortgages or long-term bonds. Rather, when banks have excess reserves, bank funds are available for lending or commitment in any area in which the bank chooses to commit them, taking into consideration the relative return offered and with due regard to balance in the bank's portfolio. It is immaterial whether or not they have meanwhile been placed temporarily in bills.

The speed with which changes in the availability of reserves will be reflected in parallel changes in any individual sector of the market, such as the long-term sector, will depend basically (a) on the strength of demand in that sector relative to other sectors, (b) on the attractiveness of the yield offered in the light of the risk involved, and (c) on the liquidity position of the banking system, i.e., the size of its highly liquid asset holdings and the position of its loan deposit ratios. Ease in reserve positions will not quickly be reflected in an increase of commercial bank investments in the long-term capital market if the banks are worried about an insufficiency of short-term liquid assets or a high loan deposit ratio. Under these conditions, time is indispensable to allow the increased availability of reserves to build up bank liquidity through increases in bank holdings of liquid assets. Time is also indispensable to permit borrowers, such as finance companies, with access to the short-term open markets to use these markets to repay bank loans and thus bring about an improvement in the loan ratio.

#### Organization of the Long-term Market

There is a third aspect of the money and capital markets that bears mention in this connection, namely, the much greater significance that attaches to any decision to borrow or lend when it is taken in the long-term market as compared with a decision covering an equal dollar amount when it is taken in the short-term market. This increased significance is, of course, a mathematical truism resulting purely and solely from the fact that the commitment undertaken runs longer in time and, therefore, commits both parties to its terms through a longer interval. This is one reason why shorter rates fluctuate so much more widely than long-term rates--less hangs on whether they do or not. It is also

a reason why relatively small fluctuations in long-term interest rates carry implications and consequences out of all proportion to much larger fluctuations in short-term rates. For example, it is generally realized that a fluctuation of, say, one per cent in interest rates on one-year securities would normally be associated with a much smaller fluctuation in the interest yield on 30-year bonds. It is also generally realized that the relative change in capital values of the securities in the two maturity areas would be reversed, i.e., that the market price of the 30-year bonds would swing over a wider range than the market price of the one-year notes. It is less generally recognized, however, just how large this swing is. Actually, in the period between the wars, the swing over the credit cycle in prices of triple A corporate bonds of 30-year maturity appears to have averaged nearly seven times larger than the corresponding fluctuation in prices of one-year securities.

These differences are reflected in the manner in which approaches are made to the two markets. In general, approaches to the long-term markets are carefully timed, with an eye among other things to avoiding congestion. Investment bankers bringing out new long-term bond issues will try to schedule them, if at all feasible, to be offered on a day when the calendar is not clogged with competing issues. To the extent that long-term borrowing is postponable this has the effect, in a sense, of rationing or tailoring demands for long-term borrowing to the supply of funds currently available in the market. It acts to minimize short-run variations in prices and yields in the capital markets by limiting the amounts of long-term funds sought to the supply of funds available at prevailing yields.

This characteristic of the organization of the long-term markets can be troublesome. If professionals in the market misjudge the magnitude of shifts

in the supply of or demand for investment funds, there may be a delay in the response of interest rates as quoted in the market until the volume of prospective issues on the calendar clearly indicates the true nature of the basic supply-demand position.

### Empirical Verification

Actual market behaviour is compounded of almost innumerable strands, so much so that it is difficult to muster direct empirical proof of these specific propositions. Nevertheless many of them can be subjected to a considerable degree of factual verification.

(a) If substitutability as between different maturity sectors of the market is characteristic of the behaviour of important elements on both the demand and supply sides of the market, one would expect the market in general to move as a whole, i.e., one would expect that the broad movements in the amounts of funds loaned in the long, intermediate and short areas would usually be in the same direction, and that the broad movements of interest rates in the various maturity sectors would also be in the same direction. One would expect that divergent movements as between maturity sectors would be less frequent in occurrence and of shorter duration when they occurred. This is completely in accord with observed market behaviour.

(b) If the effect of arbitrage and dealer portfolio activity is primarily to establish prices and yields that will clear bids and offers in the different maturity sectors of the market, it would be expected that yield curves would be continuous rather than discontinuous as between the various sectors. This expectation also accords with the empirical evidence. Professional activity, including arbitrage, results generally in a smooth and consistent yield curve, particularly in the U. S. Government securities market.

This curve, however, changes its shape from time to time, reflecting the presence of differential supply-demand pressures in various sectors of the market. In other words, substitution and professional activity have the effect of linking the various maturities sectors into an organic whole but not of obliterating completely differential pressures as between them.

(c) If commercial banks with their ability to create money are fundamentally important factors in the supply of funds for investment, interest rates would be expected to be highly responsive to changes in the reserve position of the commercial banks. This proposition is in accord with empirical evidence.

(d) In current market reporting, discussion and analysis is confined preponderantly to noting changes in the demand for and supply of investments in the various individual markets for bills, certificates, U. S. bonds, municipal bonds, mortgages, etc., and day-to-day developments are analyzed in terms of these changes in demand for and supply of specific categories of issues. Yet, if the abstract propositions set forth in the above analysis are correct, a change in the aggregate volume of free reserves available to the banking system would be expected to have much more effect upon the availability of funds and, consequently, upon interest rates in all the various maturity sectors of the market than would be expected to result from an equal dollar change in the volume of securities carried in the market. This would be expected because the former impact is a multiple one whereas the latter reflects a one for one relationship. In a rough general sense, the relative impact on interest rates or security yields of these two factors should be proportional to the reserve ratio of the commercial banking system. For example, if the Federal Reserve System buys or sells a given dollar amount of bills at a time when effective required reserves average one-seventh of demand deposits, something like

seven-eighths of any resulting effect on market yields should reflect the change in the volume of free reserves available to the banks and only one-eighth the fact that the operation was executed in bills and therefore also changed the volume of bills available for investment in the market. The same principles would apply if the open market operations were executed in the long end of the market.

It is impossible to obtain direct empirical verification of the operation of these principles from a study of the response of the market to given open market operations, since such operations exert various types of influence simultaneously. On the one hand, they add to or subtract from the volume of free reserves available to the commercial banks. At the same time, however, they add to or subtract from the volume of securities to be carried in some particular sector of the market. In addition, as was noted earlier, the fact that the Federal Reserve System has entered the market may give rise to expectations which will be reflected in quotations in the securities market. At times these quotations may reflect professional expectations fully as much or more than they do changes either in the reserve position of the banks or in the amount of market-held securities in the various maturity sectors. This would become progressively more important if open market operations were conducted in the intermediate or long sectors of the market. It is most nearly negligible when open market operations are confined to the bill market. In any case, however, it is impossible, by studying open market operations alone, to disentangle these three effects.

There are other ways, however, of developing empirical data that is both comparable and valid. For example, if, as abstract reasoning would suggest,

something like seven-eighths of the response of the money market at any one time to an open market operation, in terms of availability of funds, represents the effect of that operation on the reserve position of the banks, while only one-eighth reflects the fact that bills were simultaneously put into or withdrawn from the market, it follows that changes in the general availability of funds and in interest rates should be roughly the same, or within seven-eighths of the same for various occasions when there were comparable changes in the level of free reserves. This should be true regardless of the cause of the change in the level of free reserves - for example--whether it was brought about by open market operations, which simultaneously change the volume of securities to be carried in the market or by changes in reserve requirements which have no effect whatever on the volume of securities to be carried in the market. This comparison offers a truly objective empirical test of the validity of the principles under examination.

The System has now changed reserve requirements on five separate occasions since the accord. On each occasion, changes in the availability of funds and in interest rates have reacted to the resulting free reserve position. That reaction, furthermore, has been roughly similar, certainly within seven-eighths of what would have been expected if the same free reserve position had been achieved through open market operations. This body of empirical evidence, consequently, also strongly supports the conclusion that would be suggested by more abstract analysis.

There is still another source of empirical data that may throw light on this problem, a source of data moreover that is completely free from any complications arising from changes in market expectations such as are frequently induced by policy actions on the part of the Federal Reserve System. It arises

connection with Treasury refinancing operations. The Treasury recurrently undertakes to refinance its huge outstanding debt as various issues mature. Each year more than \$20 billion of market-held certificates, notes, and bonds are thus refinanced by exchange for new issues. Frequently intermediate securities, and sometimes long securities, have been included in the offers for exchange. Such occasions, consequently, furnish a prime opportunity to develop empirical data with respect to the effects on the availability of funds and on interest rates of changes in the maturity composition of market-held debt.

In the big refinancing of early 1958, for example, nearly \$10 billion of market-held debt was refinanced, more than one-third into the 3s of 1969 and more than one-sixth into the 3-1/2s of 1990. This refinancing, in the course of a very few days, effected a huge redistribution in the market supply of investments as between the short, the intermediate, and the long maturity sectors. More than \$3-1/2 billion of securities were shifted out of the very short to the intermediate sectors and more than \$1-1/2 billion additional issues were shifted from the very short to the very long maturity sector. This shift in the distribution of securities as between the various sectors of the market was exactly analogous to the shift that would have been induced had the Federal Reserve System Open Market Account undertaken a huge swapping operation in which it purchased some \$5 billion of certificates in the market and simultaneously sold some \$3-1/2 billion of issues maturing in 1969, and in addition some \$1-1/2 billion of issues maturing in 1990.

As already noted, the effects of such a huge swapping operation, had it been undertaken by the System, would have given rise to market expectations that would have affected quotations independently from any effects arising out of changes in the volume of securities outstanding in the different

maturity sectors of the market. A study of the reaction of the market to such refinancing operations of the Treasury, consequently, provides concrete empirical evidence on two problems. First, what is the nature of the market response to additions to or subtractions from market-held debt and how much of the impact of such changes is modified or absorbed by the high degree of fluidity and substitutability as between the various maturity sectors that pervade both sides of the market? Second, how large would direct operations by the Federal Reserve System in long-term U. S. securities have to be to exert a significant influence on the availability of long-term funds for investment, other than any impacts that might result from changes in market expectations?

The answer to these two questions, as provided by the response to the recent Treasury refinancing, is that substitutability is a very important market phenomenon, sufficiently important to mitigate appreciably the effects of very large shifts in the volume of securities outstanding as between the various maturity sectors of the market. In this most recent case, for example, bill rates, which had been dropping for some time previous to the refinancing, dropped appreciably further as the volume of short instruments available for investment was diminished by over \$5 billion. They did not, however, drop to levels that usually prevail when free reserves are above \$500 million. Long-term bond yields concurrently, which had also been dropping rapidly, leveled off as these large volumes of additional securities were absorbed in the intermediate and long sectors of the market. There was, however, no sharp reaction upward. Concurrently with these reactions, the capital markets continued to absorb new issues in record volume.

Now, these responses were certainly tangible and definite, as would be expected on abstract grounds. At the same time, considering the huge amounts

of securities involved, the effects both on interest rates and on the volume of new securities absorbed were distinctly limited. They suggest that the Federal Reserve System would have to undertake very large swapping operations indeed if it wished to use this device to affect appreciably the availability of funds in specific maturity sectors of the market. This evidence also overwhelmingly verifies the proposition that Federal Reserve operations in the open market achieve their important responses primarily through their effects on the reserve positions of the commercial banks.

#### Recapitulation

The foregoing analysis indicates the nature of the problems that would be raised should the System intervene directly in the market for long-term Government securities. To recapitulate:

(A) System actions affect quoted interest rates in two major ways:

(1) by altering the supply of funds relative to demand available in the credit and capital markets;

(2) by inducing a shift in expectations among market professionals.

(B) System actions influence the supply of investment funds relative to demand, in two ways, either by changing the volume of reserves available to the commercial banks for loans or investments, or by changing the volume of securities in the market available for investment. As between these two, the effects of the former are all important as compared with the latter. Under present reserve requirements, abstract reasoning would lead one to expect that something like seven-eighths of the interest rate response to any given open market operation would reflect

the effect of that operation on the free reserve position of the banks and only one-eighth would reflect the fact that the open market operations had the additional effect of changing the volume of market-held debt. These general theoretical expectations are in accord with the empirical developments.

(C) The major fundamental effect of direct operations in long-term securities would reflect the fact not that long-term securities were purchased but that reserves were supplied or withdrawn. This same effect would result from operations in bills.

(D) The money and capital markets are so organized as to permit interest rates, particularly long-term rates, to persist for a time at lower levels than would be justified by the volume of funds available for investment. In this interval, the volume of capital offerings coming to the market tends to be rationed to the level of market demand. The shift in expectations induced by direct System operations in long-term securities are apt to be reflected in changes in interest rate quotations that are out of all proportion to the changes justified by the volume of reserves absorbed or released. These rates would not reflect the true supply-demand position in the market and in a situation like the present would lead to congestion.

### Conclusion

The 1953 decision of the Federal Open Market Committee to confine open market operations to short-term securities was governed primarily by the desire to minimize any disturbance to the functioning of the Government securities market that might result from its own operations. Since the bill market was very much broader than any other sector of the market, it was clear that the

possibility of such disturbances could be held to a minimum to the extent System operations were confined to bills. While these Committee decisions were made for operating reasons, they were taken in full confidence that operations confined to bills would improve and not impair the market effectiveness of Federal Reserve System policy actions. This confidence has been justified by the record. Experience has proved the wisdom of operations designed to affect credit and capital market conditions primarily through effecting changes in the volume of bank reserves.

The great danger of direct System intervention in the long-term securities markets at the present time is that the effect on interest rates, arising out of a shift in market expectations, would probably be disproportionate to any changes simultaneously induced in the actual supply-demand position of the capital markets. The existence of such disproportion, furthermore, would not be readily or immediately apparent and might not be quickly corrected. For a time, the flow of securities offered in the investment markets would tend to be rationed to the absorptive capacity of the market. This might well lead to an erroneous reading of the economic situation. The failure of offerings to grow in spite of sharply lower interest rates would require explanation. Such lethargy in the capital markets, for example, might be ascribed not to a deficiency of reserves in the commercial banks but to an absence of creditworthy borrowers or to a let-down in the spirit of business enterprise, or to a cautious spirit among entrepreneurs. This would create great difficulty for System policy formation. To the extent that long-term interest rates become dominated by expectations of the future course of System policy actions, rather than by the current supply-demand position, the System is deprived of the most important market indicator of the adequacy of its operations.

Another resort to the record may help to clarify this point. The suggestion earlier in 1958 that the System engage in direct intervention in the long-term market was motivated mainly by a desire to help clear up a certain amount of congestion that had developed in the long-term capital market. At that time, offerings of new issues had been exceptionally large and unsold issues, particularly state and municipal issues, were at high levels. Actually, instead of intervening directly in the long-term market, the System helped clear up the situation by lowering discount rates and cutting reserve requirements. This poses the problem of which was the preferred approach to the problem.

Had the System directly intervened at that time to purchase long-term bonds, strong expectations of further reductions in bond yields would certainly have been roused. The chances are that the yields of long-term bonds would have dropped sharply on the appearance of a relatively small volume of System purchases in the long-term market. Little actually would have been done, however, to increase the absorptive capacity of the market. Now, those lower long-term yields might well have acted to induce an increase in the desire of entrepreneurs and others to borrow long-term funds. Such increased borrowing, however, would have had to be held off the market because not enough reserves had been added to increase appreciably the volume of funds available for investment. Had this happened, the existing congestion of unsold issues in the long-term market would have been increased, not diminished, by direct intervention. The decision to lower both reserve requirements and discount rates, on the other hand, tended to clear up the congestion and at the same time to promote increased borrowing because it put its primary emphasis on an increase in the supply of reserves available to the banks. This increased by

a multiple the potential supply of bank funds available for market investment, and the resulting pressure on the supply position of the banks led, first, to a clearing up of the congestion and, subsequently, to lower interest rates.

In summary, the System brings aid to the economy in a time of recession primarily by increasing actual flows of loanable funds and thus helping to finance active demands in the market for men and materials. We must never forget that this is the ultimate aim of our monetary policy rather than the achievement, say, of a predetermined level of long-term interest rates. In other words, the achievement of lower interest rates in these circumstances represents a means to an end, not an end in itself. The effective monetary stimulant to the economy in times of recession is always an increase in the availability of reserves to the member banks. Such reserves increase by a multiple factor the supply of funds that are competing for existing loans and investments and also help to create a financial environment in which additional creditworthy enterprises are tempted to borrow.

The really difficult problem for the System always, both in periods of recession and periods of boom, is to determine as closely as practicable the volume of reserves that are most appropriate to the economic climate. Data covering the behaviour of free market interest rates, particularly long-term rates, read against the background of data covering the volume of bank credit and of new offerings in the capital markets, furnish a most valuable guide to such determination. This is another reason, and a very important one, for abjuring direct intervention by the System in the long end of the market. It is important to preserve the trustworthiness of that guide.