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BOARD OF GOVERNORS
OF THE
FEDERAL RESERVE SYSTEM
WASHINGTON, D. C. 20551

January 19, 1972

CONFIDENTIAL (FR)

To: Federal Open Market Committee

From: Arthur L. Broida

Enclosed is a memorandum from the System Account Manager dated today and entitled "Reserve targets." This memorandum is being distributed in connection with the contemplated discussion of that subject at the next meeting of the Committee.

Arthur L. Broida
Deputy Secretary
Federal Open Market Committee

Enclosure

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To: Federal Open Market Committee Subject: Reserve targets.

From: Alan R. Holmes

The following discussion is addressed to the possibility that the Committee may wish to switch its operational focus to one or another type of reserve aggregate, rather than money market conditions, in aiming to achieve particular growth rates for money and credit aggregates. Whatever the merits of a shift to a reserve approach, it might be helpful to Committee members to have before them a written report of how such proposals look from an operational point of view. It should be fairly obvious that the problems for the Desk--and the market response to a shift to a reserve guide--will depend crucially on the specifics of the procedures. The officers of the Trading Desk are dubious that a reserve target per se would result in better control of the aggregates, and it should be clear that we are not recommending such a change. At the same time, we believe it possible to devise procedures that permit experimentation with a reserve target if the Committee so desires.

This memorandum is divided into two parts. The first discusses the general question of reserve targets against the background of the institutional environment within which open market operations are conducted. The second sets forth an approach to a

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reserve guide that differs from the procedures that have been employed in the past to derive the blue book nonborrowed reserve path. The officers of the Trading Desk believe that the indicated approach would avoid the over-reliance on projections inherent in the blue book procedures, would make the reserve target more realistic, and would dampen unnecessarily adverse effects on the banking system and the money markets; however, it is not presented as an approach that would necessarily, or probably, produce closer System control of the various aggregates.

I. Comments and Background

Advocates of a reserve target approach, in the opinion of the officers of the Trading Desk, do not make a persuasive case for their proposals. The major complaint against continued use of money market conditions appears to be that the Committee has not been willing to alter money market conditions with sufficient vigor to counteract undesired developments in the monetary aggregates. But there is probably no way the Committee can avoid a possible conflict between desired rates of growth of the monetary and credit aggregates on the one hand, and levels of interest rates on the other, except to give up one of the two sets of objectives. The problem of trade-offs between aggregates and interest rates will remain whatever the form of the directive, or whatever operational target, the Committee may select.

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At the same time, it seems clear that some members of the Committee would prefer to specify operational targets in terms of member bank reserves rather than in terms of money market conditions, and there is some logic in that preference. After all, the immediate impact of open market operations is on bank reserves. But the System is not the only influence on bank reserves. Market factors, such as float, currency in circulation, etc., vary substantially from week to week, with the average weekly variance in 1971 amounting to about $455 million. This is, of course, very large as compared, say, with a $35 million weekly growth in reserves implied by a 6 per cent annual rate of nonborrowed reserve growth.

Even more important, the banking system tends to respond more or less automatically, in the first instance at least, to changes in the public's demand for money and credit. We do not live in a simple world where the System supplies a given quantity of reserves and the banking system converts them into a predictable quantity of demand and time deposits. The banking system, instead, makes loans and investments, and the public decides the quantity and type of deposits it wants to hold. Out of this process there emerges a level of required reserves that the banking system must find--either through a combination of open market operations and movements of market factors affecting reserves or through the discount window.

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The Federal Reserve has full control only of its own portfolio. By varying the portfolio, it can influence the Federal funds rate, nonborrowed reserves, or borrowing at the discount window over a given time period. In time the System will affect the banking system's lending and investment policies and, through changes in conditions of credit availability and actual money and credit flows, the real economy. This is a complicated process, and despite the efforts of many people over many years--and despite the substantial progress made--we are still far from being sure of our ability to understand--and to predict--the many relationships involved.

The work of the Maisel Committee last year quite clearly pointed to these difficulties including particularly the difficult problem of predicting the relationships between reserves and deposits, especially in the short run. The Open Market Committee has a great deal of experience with how frequently these estimates go astray because of the short-run variability in deposits, notably private and Government demand deposits.

The problem here lies both in the short-run volatility of the aggregates and in the "multiplier." Staff procedures, as we understand them, are to first project deposits and then derive required reserves from the deposit estimates. This appears to be a reasonable procedure, although most monetarists would probably argue that the causation runs the other way--i.e., the System should supply reserves

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and an appropriate rate of growth of deposits will result. However, the unpredictability of the "multiplier," particularly in the short run, considerably vitiates the use for operational purposes of a weekly reserve target thus derived.

Given the short-run volatility and unpredictability of the aggregates, pursuit of projected levels of nonborrowed reserves would inevitably entail sharp fluctuations in money market conditions--far sharper than the market has been accustomed to observe. At times these fluctuations might carry money market conditions further in the same direction that would be consistent with the current thrust of Desk operations in seeking certain growth rates of money and credit aggregates. At other times, however, the effort to reach a projected nonborrowed reserve level could send money market conditions lurching far in the opposite direction from the current general policy thrust--to the great confusion of money market participants.

In our view, whatever the Committee's operational targets, it must have some regard for the psychological reaction in the market. We believe that advocates of a reserve target approach are over-optimistic as to the market's ability to accept calmly the money market consequences of their proposed procedures.

While there is room for greater variation in the Federal funds rate, we believe this should be as the result of a conscious decision of the Committee rather than a fallout from a nonborrowed reserve target. In our view the Federal funds rate should move

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consistently in line with the Committee's aggregate and interest rate objectives, not capriciously because of a deviation between a targeted reserve path and the banking system's need for reserves. Advocates of greater volatility of the Federal funds rate have not made it clear whether greater volatility is sought for its own sake alone or whether the thrust is for a more purposeful and larger movement of the Federal funds rate when aggregates and/or interest rates are not behaving properly. These latter objectives could be achieved, and we believe, with a money market conditions guide at least as readily as with a reserve guide.

It is also not clear that introducing greater variation in the Federal funds rate will eliminate the market's reliance on it as an indicator of System policy. The Federal funds rate is, of course, a significant market rate, measuring as it does the price at which one bank is willing to sell excess reserves to a bank that is deficient. Since the avowed purpose of the proposed change would be to increase the System's concern with reserves as an operational target, the market would most likely continue to read the Federal funds rate as a significant indicator of the System's intention with respect to reserve supply, as indeed it would be. With the Federal funds rate a key factor in determining rates on loans to underwriters of debt markets, more volatility in the rate will introduce greater risks in that area, leading to the possibility of more speculative flows of funds as the

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market--as it is sure to do--tries to outguess System intentions. A more volatile Federal funds rate would also imply more volatile use of the discount window calling for new standards of surveillance over that source of reserves.

From an operational point of view, moreover, greater volatility in the Federal funds rate will impair the Desk's ability to achieve a weekly nonborrowed reserve target. Once again it is the fallibility of projections that is the basic problem. With weekly variations averaging $455 million in 1971, it is notoriously difficult to project float and the other uncontrolled factors that affect reserves. During 1971, the New York Bank's projections of these changes on the first day of the statement week missed the final outcome by $280 million, on average. (The Board staff's projections are of comparable accuracy.) Even on Tuesday, the sixth day of the statement week, the average miss in projecting the weekly average change in market factors was around $100 million. As long as the Desk has a reserve or money market target that leads to smooth purposeful changes in the Federal funds rate, it has some protection against the uncertainties of the reserve projections. If float falls below its projected level so that nonborrowed reserves are running lower than expected, the Federal funds rate will tend to rise as banks bid for the extra reserves they need. The Desk resists the rise by supplying nonborrowed reserves, thereby compensating automatically for

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the shortfall. But, if frequent and violent fluctuations in the funds rate are commonplace, then variations in this key rate would no longer provide much of a clue as to nonborrowed reserve levels.

In sum, we believe that an extremely volatile Federal funds rate could impair our practical ability to achieve a reserve objective and could prove disturbing to financial markets. Greater and more purposeful movement in the Federal funds rate in response to persistent deviations of the aggregates would appear entirely feasible, provided that the Committee is prepared to accept the impact on the general level of interest rates that would result.

II. An Approach to a Reserve Target

Notwithstanding the foregoing discussion, if the Committee wishes to experiment with a reserve target, we believe the following procedure to be a workable alternative that would avoid or dampen some of the drawbacks cited above. The approach is not recommended as preferable to a money market strategy, but rather is suggested as less objectionable than an approach that depends entirely on projections of total or nonborrowed reserves for several weeks ahead.

Since the System starts out each statement week with a known value for required reserves--based on deposits two weeks earlier--the level of total reserves that the banking system requires is pretty well fixed. Some slippage, of course, results from the carryover privilege and from intended or unintended variations in

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excess reserves. While total reserves are largely outside the System's control in any given statement week, the System can vary the proportion of total reserves that is supplied through open market operations (nonborrowed reserves) as compared with reserves supplied through the discount window (borrowed reserves).

Our proposed alternative is to build up a total reserve and nonborrowed reserve guide each week from the known required reserve number, and to modify that nonborrowed reserve guide depending on the movement of the monetary and credit aggregates (and/or interest rates) relative to the Committee's desires. An example will help make clear what is intended. Each week a nonborrowed reserve target would be calculated as follows:

Required reserves (actual)	$30,000
Plus: Allowance for excess reserves	225 1/
Equals: Estimated total reserves	30,225
Less: Average level of borrowings	100 1/
Equals: Nonborrowed reserve target	$30,125

At the time the reserve target is established each week, relatively firm data on the monetary and credit aggregates would be available for two weeks earlier, along with preliminary data from the preceding week. If these data suggested that the aggregates were about on track, no adjustment would be made to the nonborrowed reserve target.

1/ Average levels of excess reserves and borrowings for a past period (say four weeks) are used here for illustrative purposes. Some problems with week-to-week deviations from these averages are discussed later on.

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The Desk's next step would be to calculate the suggested need for open market operations in the current statement week as follows:

Level of nonborrowed reserves in the previous week	$29,500
Adjusted for expected supply of reserves from market factors	400
	$29,900
Target	$30,125
Suggested need to supply reserves through open market operations (average)	$ 225

This calculation would have to be revised each day as new reserve data became available, as an interim check on Desk performance in achieving the target.

Now suppose that the monetary and credit aggregates were growing less rapidly than the Committee desired. Then the nonborrowed reserve target would be raised, requiring banks to meet less of their total reserve needs at the discount window and, in the example given above, increasing the amount of reserves to be supplied through open market operations. Ceteris paribus, this should result in a lower Federal funds rate, not as a direct objective of the Committee, but as a natural outcome of keeping to a reserve objective. Some experimentation would be needed to decide how much of a adjustment in the reserve target would be needed to counter a deviation of any given magnitude in the aggregates, but the direction of the change and the reason for it would be clear-cut.

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Some allowance would have to be made in the conduct of open market operations for the bank's ability to carry over reserve excesses and deficiencies to another statement week. Thus, if banks are carrying over a substantial surplus into a new statement week, the nonborrowed reserve target might be reduced, since some of the required reserves will be met with reserves held a week earlier. There are also variations in the pattern of bank borrowing that might make it desirable to modify the nonborrowed reserve target. Thus, if banks borrow unusually heavily before a weekend, it might prove desirable to allow nonborrowed reserves to fall short of the target in order to avoid a larger supply of total reserves than would be necessary. Similar problems would, of course, exist under any reserve target approach.

We believe that the procedure set forth in this memorandum would be preferable to an approach that sought to achieve the blue book nonborrowed reserve path as currently devised, while at the same time establishing equally well the Committee's intention to focus on bank reserves. Primarily, it avoids rigid reliance on projections in setting the nonborrowed reserve target. The mix of deposits as between time and demand, the location of deposits as between reserve city and country banks is a known factor, already reflected in the required reserve number. There is no need to project a "multiplier" or to project shifts in deposits within the banking system or the level of Treasury deposits, all of which have tended to cause major errors in reserve path projections.

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Consequently, we believe that the resultant changes in money market conditions would primarily reflect unwanted changes in the aggregates, rather than errors in projections or faulty seasonal adjustments, as could well be the case with a reserve target mapped out several weeks ahead. Changes in money market conditions should take place more smoothly. If the Committee desires, there could be more change in the Federal funds rate than has been usual in the past, but hopefully these changes would not be so large as to produce marked changes in the behavior of the banking system or of financial markets. The Desk should continue to be able to make reasonable judgments about reserve availability from the behavior of the money market, and thereby improve the chances of coming close to the nonborrowed reserve target.

We would not argue that this approach would improve the System's ability to control the behavior of the aggregates in the short run. It does not avoid the problems of weighting different growth rates as between M_1, M_2, and the credit proxy if the Committee wants to use a basket of aggregates rather than rely on M_1 alone. Nor does it avoid the necessity for trade-offs between aggregate growth rates and interest rates, if the Committee desires to have dual short-run objectives. But if the Committee wants to shift to a reserve target, we believe that the procedure outlined in this memorandum would represent a practical, understandable approach.