

# *The Problems of the Open Market Manager*

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The purpose of this paper is to describe the procedures used by the Trading Desk in implementing the Federal Open Market Committee's directive and to enumerate some of the problems we have run into now that more weight is being given to the aggregates, particularly to reserves against private deposits. I use the term "greater weight" with some deliberation because there is no suggestion that the Federal Reserve System has finally hit on a magic formula which, if rigidly adhered to, would provide the precise growth rates of money and credit that would lead to the desired national economic performance. Recently-published policy records make it quite clear that while the primary focus is on RPDs, due consideration is given to the behavior of the key monetary and credit measures, to the state of the domestic money and capital markets, and to international financial markets as well. Thus, the current status of the directive reflects a continuing evolutionary process in the thinking of the members of the Committee and the Committee staff — not a radical departure from past procedures. No revolution has taken place at the Trading Desk — although it is quite obvious that RPDs now get daily attention, but not to the exclusion of everything else.

## *Arriving at an RPD Target*

It might be worthwhile at the outset to review very briefly how the Committee arrives at an RPD target — or target range — that it associates with any given directive to the New York Reserve Bank as a guide to day-to-day open market operations. As you know, the Committee staff prepares an economic forecast for several quarters

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ahead, and provides the FOMC with projections of growth rates of money and credit — and of interest-rate levels — they believe to be consistent with the GNP forecast. Individual members of the Committee may or may not like the GNP forecast or agree with the staff estimates of the linkages between GNP and the monetary and credit aggregates which serve as intermediate target goals. Nonetheless the Committee does start with a proximate notion of an appropriate long-term growth rate for money and credit linked to a desired growth rate for real output and associated levels of unemployment and prices.

Next, the staff prepares each week monthly forecasts of the monetary and credit aggregates for the next quarter or two, and weekly forecasts for a shorter time span. While these are consistent with a given long-run growth rate — or at least thought to be — there may be substantial month-to-month deviations since we know from experience that the course of money growth is seldom smooth, particularly in the short run. Incidentally, I wish we knew more about the reasons for the substantial month-to-month deviations in  $M_1$  growth. Why did  $M_1$  grow at only a 4-5 percent annual rate in April-June and then suddenly accelerate to a 14 percent rate in July, with no real change in underlying economic conditions? Is our seasonal adjustment all wrong? Are there wide random swings in the demand for money? Or is there some hitherto undetected aberration in our statistical measurement of the money supply?

Once the staff has prepared its aggregate forecasts — which members of the FOMC may or may not find to be reasonable — it is relatively easy to derive a consistent RPD growth rate on a monthly or quarterly basis. In choosing an RPD target range the FOMC is essentially reflecting a longer-range growth rate for money and credit aggregates, providing the staff forecasts are reasonably accurate and the assumed linkages reasonably correct. Thus, as the policy records I believe have made clear, an RPD target is not an end in itself but an operating target or handle that the Committee uses to reach a monetary and credit objective which in turn is expected to be consistent with the Committee's fundamental objectives — that is, basic national economic goals.

The Committee's RPD target is expressed, as you know, as a range, typically with a 4-percentage-point spread on an annual-rate basis, and generally covering a two-month period. Thus for February-March the target range for RPDs was a 6-10 percent annual rate, and for May-June 7.5-11.5 percent. Two observations about the target range may be in order at this time. First is a warning not to interpret a

change in the target range as necessarily signifying a change in the Committee's policy stance. A raising or lowering of the range may well be merely a reflection of an anticipated temporary short-run deviation from a longer-run steady growth rate for money. Second, some people have felt that the extent of the range — 4 percentage points — is so wide that there is really no target at all. It should be pointed out that 4 percentage points on an annual rate basis is equivalent to only \$100 million a month in actual RPDs — quite a narrow range when measured against an RPD base of \$30 billion.

The RPD target is expressed, of course, in seasonally-adjusted terms. Since the Trading Desk lives in a seasonally-unadjusted world, and since on a day-to-day basis we know only total-reserve figures — with a break between borrowed and nonborrowed reserves, of course — it is necessary to convert the Committee's RPD target into a total-reserve target in order to have a practical operational guide. Hence, the staff deseasonalizes the RPD target, breaks it into statement weeks, and adds in allowances for reserves required to support Treasury and interbank deposits and "normal" excess reserves. This provides a reserve measure that can be compared day-by-day with the reserves actually available in the banking system.

#### *Problems of Implementing a Reserve Target*

I shall return to the use of the RPD target in day-to-day open-market operations later on. But first some of the problems that will ever be present in attempting to implement a reserve target, or for that matter any short-run target designated by the FOMC, should be enumerated.

First of all is the obvious fact that the System does not provide the only influence on bank reserves. Market factors, such as float, currency in circulation, vault cash, the Treasury balance, etc. vary substantially from week-to-week with the average weekly variance last year (1971) amounting to over \$450 million. This is, of course, very large compared with a \$35 million weekly reserve growth implied by a 6 percent annual rate of RPD growth. Our ability to hit a reserve target with reasonable precision depends importantly on how well we can forecast the factors affecting reserves that are outside our control.

Unfortunately, despite heroic work by our staffs, the results are something less than perfect. Last year, for example, the New York bank's forecast on the first day of the statement week missed the final outcome by \$280 million on average. Of course, new estimates

are made daily, but even as late as Tuesday — the sixth day of the statement week — the average miss in projecting weekly average-reserve factors was about \$100 million. This means that at any given point in time there is considerable uncertainty as to where we really stand in relation to the reserve target. Revisions in the deposit data and as-of adjustments to bank reserve positions also cause operational problems from time to time.

Incidentally, our projectors are looking forward with interest to the revision of Regulation J that is scheduled to be introduced later this month. This speed-up of the check collection mechanism is expected to reduce float by about \$2 billion. Whether or not it will reduce the weekly fluctuation in float is less certain, but it may well mean that past patterns will be even less helpful than at present in forecasting float during an extended transition period.

Lagged reserve requirements are pointed to by some Fed watchers as an obstacle to appropriate monetary management. It is certainly true that in any given reserve statement week the level of required reserves is fixed, determined by deposit levels two weeks earlier. There is nothing the banking system can do to change that level, and if reserves are not supplied by open-market operations or through the movement of other reserve factors, banks must have recourse to the discount window. The Federal Reserve can, of course, keep relatively close control over the supply of nonborrowed reserves, and if the monetary aggregates are turning in a stronger performance than the Committee desires, open-market operations can become a reluctant supplier of nonborrowed reserves, forcing the banks into the discount window. This process will, over time, bring about administrative action by the discount officers at the Reserve banks, and eventually a change in the lending and investment activities of the commercial banks. With lagged-reserve accounting, an RPD target presents something more of a problem in ensuring a prompt monetary response than was the case when the Committee was operating directly on a monetary or credit target. Thus we find that we often have to look through the RPD handle to money and credit growth directly. If money growth is lagging behind the Committee's desires, the Desk steps up the supply of nonborrowed reserves, or if money and credit are growing more rapidly than the Committee's desires, the Desk reduces the supply.

The use of an RPD target is not only tempered by what is happening to key measures of money and credit, but also by money-market conditions themselves. The greater weight placed on a reserve target has of course meant less weight being placed on money market

conditions. But in instructing the Desk on the conduct of operations the Committee has made it clear that it does not want to have wild gyrations in money-market conditions, as typified particularly by the Federal funds rate. It is interesting to note that in the first six months of operations under a reserve target the variance in the Federal funds rate between Committee meetings was no different than in the two previous years. Part of this performance was due, perhaps, to the relative stability of credit demand over that particular period. Certainly putting greater weight on reserves should mean that over time there will be greater variation in interest rates. The important point, however, is that while the Committee has increased its emphasis on the monetary and credit aggregates, it continues to demonstrate a lively concern over the state of the money and capital markets.

#### *Importance of Federal Funds Rate*

The Federal funds rate — the cornerstone of the money market — is of particular concern to the Trading Desk for purely practical reasons as well. Since it represents the price at which banks are willing to trade reserves and is very sensitive to supply and demand factors, it frequently provides a better measure of actual reserve availability than do our projections. Thus a dip in the funds rate from its recent average level may indicate a greater availability of reserves — perhaps from a bulge in float — than had been anticipated. The Federal funds rate — in the very short run — serves as a most useful corrector of faulty reserve projections. It is not an infallible measure, however, reflecting in the main the fact that commercial banks have as much trouble keeping track of their own reserve positions as we do forecasting reserves for the banking system as a whole. Sometimes banks with reserve deficiencies are very slow to cover them, giving a false sense of ease in the money market. At other times banks with large excesses hold them off the Federal funds market, perhaps in hopes of higher rates later on, lending a false sense of an overall shortfall in reserve availability. Indeed, at times the major money-market banks have accumulated gross excesses or deficiencies of \$2 to \$3 billion over a weekend, leading to strong pressure or ease in the funds market towards the close of a statement week. Thus it is important to interpret movements in the Federal funds rate in light of our knowledge of the day-to-day reserve position of the banking system, and of how the major money-market banks are currently managing their cash positions.

*Daily Check of Current Reserves*

In working with an RPD target, a daily check is made of current reserve availability relative to the target and what the position will be in the weeks ahead, if our reserve projections turn out to be right. If we find that reserves are deviating from the target, or getting uncomfortably close to either end of the range, we need to know more about why the deviation is taking place. Is there a fundamental departure in reserve growth from the Committee's desires, or is there only a temporary quirk in the weekly number? In making this assessment we are acutely conscious that the drawing up of a target path — particularly on a weekly basis — is far from an exact science. There is always the possibility that the path has been badly constructed and that a different combination of weekly figures than assumed will still give the desired longer-run growth pattern. Statistics are constantly being revised, and it frequently happens that the base month on which the target range has been constructed is changed after a Committee meeting — indicating that a different growth rate would be required in order to reach a given target level for reserves. This has to be taken into account in determining what the performance actually is.

*RPD Multiplier*

Since RPDs are not an end in themselves, but a means to achieving longer-run monetary and credit goals, the multiplier linking RPDs to these intermediate goals is a crucial factor. The multiplier assumed in the target path can be off — sometimes significantly — because of a shift in deposit mix between time and demand deposits, or because of a division of deposits as between reserve city and country banks other than the one assumed at the time the target was drawn up. Thus in reviewing reserve performance there must be a continuous review of how the multiplier is actually performing relative to its assumed performance.

The RPD target contains an allowance for excess reserves in the banking system. While the allowance has generally been realistic if a number of statement weeks are averaged, it can be far off the mark in any given week. Given the massive flow of funds through the banking system, banks are not always able to keep their reserve positions precisely where they want them to be. Thus there may be an unexpected bulge in excess reserves in any statement week. This is apt to be followed by a sharp drop in excess reserves in the following

week as banks carry over excess reserves into that week. Hence an alternating weekly pattern of high and then low excess reserves tends to develop. These swings are large relative to our RPD target range and can force us off target in any single statement week. Since they are largely self-correcting and of little basic significance, we tend to ignore short-run deviations from an RPD target if they are caused by an excess-reserve swing.

*Appropriate Time Span for Meeting a Target*

Some of the more basic problems of working with reserve or aggregative targets are discussed in other papers presented to this seminar. One of the more interesting ones is the appropriate time span for establishing and meeting an aggregative target. There appears to be reasonable agreement that a week or month and possibly even a quarter is not long enough. Working against a longer-run target raises questions of assessing at any given point in time how well on target one may be. Since the target period includes the future as well as the present and past, one has to look to the projections of money and credit growth for some guidance as to the outlook in ensuing months.

Are these projections good enough to weight them heavily in making this assessment? Unfortunately, despite excellent staff work at both the Board and the New York bank, the answer has to be no. They are useful, and absolutely necessary, for obtaining some notion of the future direction of movement of the aggregates, but not yet good enough to put much faith in them. The following example of progressive estimates for a recent month's annual growth rate of  $M_1$  will illustrate the point. Early in the preceding month the Board staff estimate was for  $M_1$  growth of 6.5 percent in the following month, a reasonable enough figure. It was somewhat marred, however, by a New York bank forecast of over 12 percent. By the end of that prior month the Board estimate had moved to 8 percent and New York to 15 percent. In the first week of the month itself the forecasts at 10-11 percent had come quite close together. A week later, however, the forecasts dropped to 5-7 percent, and by the end of the month to 1.5-3 percent. After a number of revisions in later weeks,  $M_1$  growth wound up at about 3.5 percent. I think this illustrates the pitfalls of treating a forecast as a known fact. The point is not that the forecasts are so volatile as to be useless. They are both useful and necessary, but placing great weight on them would lead to some rather startling reversals of open-market operations as the numbers just cited would imply.

In addition to a need to improve our forecasting ability, there is still endless work to do on the linkages between reserves, the monetary and credit aggregates and interest rates, and the linkages between the monetary world and the real world. Some of the work underway on these linkages and on the lag between monetary policy actions and monetary response has been presented at these conferences. But I suspect that this is a never-ending task, and not even the most sophisticated econometric analysis will ever replace the need for judgment in the formulation of monetary policy. Better analysis will foster better judgments. But if, as might be suspected, the lag between action and response is variable and the linkages between the aggregates and interest rates are subject to variation over time as financial markets develop, the payments process becomes more efficient, and since public and market psychology vary, there will never be a final conclusive answer.

For some years now, the FOMC has been giving greater emphasis to the monetary and credit aggregates and, more recently, to RPDs in its policy deliberations. But it has continued to watch developments in interest rates and financial markets and has tempered its emphasis on reserves to cope with international financial disturbances, to deal directly with domestic financial crises, and to avoid severe wrenches to market and public psychology. While money matters, so do interest rates, the condition of the markets and the state of public confidence in our financial system. And so the Federal Reserve, like every central bank, is faced with the perennial need to effectuate a trade-off between desired and desirable monetary and credit growth rates and interest-rate movements. In making that trade-off, the type of economic research and analysis that has been under discussion here has a major role to play, but it can never replace the reasoned judgment of the policy makers.

## DISCUSSION

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The Account Manager has two broad types of problems: those he acknowledges and talks about, and those he doesn't. I shall assume that my role is to discuss the second.

Ten or twelve years ago a major unacknowledged problem of the Account Manager was to defend his actions to the Federal Open Market Committee. This was necessary because the Committee's instructions to him were often hopelessly vague and ambiguous.

Since 1961 there has been a clear tendency toward greater clarity and rigour in the instructions given to the Account Manager. Indeed, to an important degree, instructions have been quantified. This, of course, places new and heavy burdens on the Manager. I think we would all agree, however, that it is much healthier for the Account Manager to expend his efforts trying to do what the Committee wants him to do than in trying to convince the Committee that what he did was what they really wanted.

The major unacknowledged problem of the Account Manager today is that he works within an open-market strategy that incorporates a risk that he will preside over a financial crisis without being able to stop it.

### I. Evolution of Open-Market Strategy

With that provocative lead-in, I want to back off and take a longer view of open-market strategy. I have already mentioned a trend toward greater explicitness in instructions given to the Manager. A second major trend has been the increasing weight given to reserves and other monetary aggregates as targets in open-market strategy, and the decreasing weight given to money-market conditions. We can trace the first (very tentative) steps in this evolution to 1960 when

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the Manager first began to report changes in total reserves and non-borrowed reserves to the FOMC (prior to that time the Manager only reported free reserves). In 1960 also the Board first began to collect daily-average money-supply data which became indispensable to later steps in the evolutionary process (see below). In 1961 oblique references to desired growth in reserves began to appear in FOMC policy directives. In 1963 and 1964 the Committee's desires about reserve aggregates were expressed in the "while" clause.

"System open market operations shall be conducted with a view to maintaining about the same conditions in the money market as have prevailed in recent weeks, *while* accommodating moderate expansion in aggregate bank reserves" (FOMC meeting of June 17, 1964, my italics).

The "while" clause was used until late in 1964 when it was scrapped — perhaps because of its ambiguity. Then in mid-1966 the "proviso" clause was adopted.

"System open market operations. . . shall be conducted with a view to attaining somewhat firmer conditions in the money market; *provided*, however, that operations shall be further modified if bank credit appears to be expanding more rapidly than is currently projected" (FOMC meeting of March 5, 1968, my italics).

The "proviso" clause was used until early in 1970. A stock-taking at that point would have led to the conclusion that the aggregates had inched up in the scale of priorities over a ten-year period but remained clearly subordinate to money-market conditions in open-market strategy. We might well have agreed with Frank Morris that "the proviso clause had only marginal significance, in part because the limits on the growth of the proxy were never sufficiently quantified to give it teeth."<sup>1</sup>

In 1970 a change was made in open-market strategy that clearly had important operational implications. The Committee adopted monetary aggregates as explicit open-market targets. These aggregates, as is well known, consisted of  $M_1$ ,  $M_2$  and the bank credit proxy, with  $M_1$  the more important of the triumvirate. To be sure, these were long-run targets. Money market conditions, especially the

<sup>1</sup>Frank E. Morris, *RPDs as the Target*.

Federal funds rate, continued to be the daily and weekly targets. Yet within a given policy stance the short-run targets could be (and were) adjusted if the aggregates moved away persistently from weekly paths considered consistent with their long-run target values.

In my view, the evolution in open-market procedures should have stopped there. The strategy that was adopted early in 1970 was an eminently sensible one. As a consequence, I was quite surprised when early in 1972 I read about the introduction of RPDs. I was also concerned that the pendulum had swung too far.

Every step in the evolution of open-market procedures reduced in some degree the relative importance of money-market conditions as an objective of open-market operations. (While the early steps perhaps had little operational significance, this cannot be said for the changes that occurred in 1970 and 1972). This evolution in procedures was a response mainly to intellectual developments, particularly the rise of monetarism. The changes that occurred in the financial system would not have called for decreasing emphasis on money market conditions. Increasingly over the period, financial institutions and non-financial corporations came to depend upon the efficient functioning of financial markets for their liquidity. Hence, the Federal Reserve should have been increasingly concerned about the viability of financial markets in connection with its "last resort" responsibilities to prevent financial panic.

Without great exaggeration it might be said that during the 1950s, when liquidity positions were generally strong and financial panic was more or less impossible (barring gross policy mistakes), the Federal Reserve used a "money market strategy" that had optimal panic prevention properties.<sup>2</sup> As liquidity positions became increasingly fragile during the 1960s and financial panic an increasing possibility, open-market strategy gradually came to de-emphasize money market conditions.

I don't want to over-stress the paradoxical elements in this. Clearly, money market conditions were over-emphasized in open-market strategy earlier while control over monetary aggregates was inadequate. Furthermore, a good open-market strategy will permit adequate control over aggregates *and* have strong panic-prevention properties as well.

<sup>2</sup>This generalization does not hold to the extent that the money-market strategy used free reserves, as opposed to market interest rates, as an open-market target. For a further discussion see my "The Strategy of Open Market Operations," *The Quarterly Journal of Economics*, Feb., 1966.

Indeed, I felt that the FOMC had a satisfactory strategy in 1970, with the Federal funds rate serving as a short-run target and monetary aggregates as long-run targets.<sup>3</sup> Why then the adoption of RPDs?

## II. Why RPDs?

First we must be clear with regard to the precise role of RPDs in open-market strategy. While he does not say so explicitly, Frank Morris evidently views RPDs as a replacement for the monetary aggregates as long-run targets. We can draw this inference by noting the four arguments in favor of RPDs that Frank advances. All of these arguments imply a comparison with the monetary aggregates — none of them involves a comparison with the Federal funds rate.

In contrast, a close reading of Alan Holmes' paper<sup>4</sup> indicates that RPDs have replaced the Federal funds rate as the weekly target of open-market operations; that the Federal funds rate is now a short-run constraint; and that the monetary aggregates remain in the strategy as long-run targets. On this issue we must accept Alan's view. Clearly the role of RPDs in open-market strategy is what the Account Manager understands it to be.

Why this change? A good place to look for the answer is the article on open-market operations in 1971 written by Alan Holmes and Paul Meek,<sup>5</sup> which is the most detailed and forthright report on open-market strategy ever published by the Federal Reserve. The report stresses, among other things, the considerable difficulty experienced in 1971 of controlling the monetary aggregates, especially  $M_1$ . It is clear that in some sense  $M_1$  grew too fast in the first half of the year and too slow in the second half. This was a source of concern to the monetarists especially. This raises the possibility that the FOMC introduced RPDs as the short-run target so as to assure closer control of the monetary aggregates.

<sup>3</sup>While I was satisfied with the strategy, I have never been convinced that the monetary aggregates singly or in combination were superior as long-run targets to a long-term interest rate or combination of such rates.

<sup>4</sup>Alan R. Holmes, *The Problems of the Open Market Manager*.

<sup>5</sup>"Open Market Operations and the Monetary and Credit Aggregates in 1971," *Monthly Review*, Federal Reserve Bank of New York, April, 1972.

The relevant question, however, is not whether a different behavior pattern for  $M_1$  considered in isolation would have been preferred. Rather, it is whether a different trade-off between the behavior pattern of  $M_1$  and the behavior pattern of other variables, particularly market interest rates, would have been preferred.

While there are some ambiguities in the record<sup>6</sup> one gets the distinct impression that the answer to this question is negative. While the FOMC would have preferred greater stability in  $M_1$  over the year, it was not prepared to pay the price in the form of greater instability in interest rates. In this significant sense, there was no lack of control of the monetary aggregates.

It is interesting that while Frank Morris says that the use of RPDs would have changed the outcome of open-market operations in 1959-60 and in 1968, he does not think that open-market operations would have been significantly affected during 1971.

The 1971 experience thus does not support the view that an open-market strategy consisting of monetary aggregates as long-run targets and the Federal funds rate as the short-run target provides insufficient control over the aggregates. Rather, it suggests that this strategy forced the FOMC to bear the pain of choosing its preferred trade-off between the behavior of  $M_1$  and the behavior of interest rates. This is exactly what an open-market strategy should do.

One is led inexorably to the conclusion that the FOMC introduced RPDs as a means of constraining its own freedom of action. The Committee in other words chose to prevent itself from doing what it knows it is otherwise disposed to do, namely, to limit short-run fluctuations in interest rates to a relatively narrow range.

From the standpoint of the monetarists, this is a wholly sensible step. Their view is that the Committee's revealed trade-off in 1971 between changes in  $M_1$  and changes in market interest rates was much too constrained by the fear of swings in rates. In this view the new strategy hopefully will lock the Committee into a "better" trade-off; with RPDs the main target the burden of proof would be on those who want to prevent interest rates from changing too much.

Yet the Committee as a whole clearly is not dominated by monetarist thinking.<sup>7</sup> Why should it constrain its own freedom? No

<sup>6</sup>Some sizeable errors in forecasting occurred during the year. Forecasting errors always make it difficult to know whether any given outcome was intended.

<sup>7</sup>On this point, see Andrew F. Brimmer, "The Political Economy of Money: Evolution and Impact of Monetarism in the Federal Reserve System," *The American Economic Review*, May 1972.

one can deny that the freedom to choose imposes a heavy burden, and this is as true of institutions as it is of individuals.<sup>8</sup> Perhaps the Committee is trying to “escape” this burden. Or perhaps we can view the change in strategy as a rational attempt by the FOMC to curb its own irrationality. Whatever the explanation, the change in strategy adds a new risk at a bad time, as we shall now see.

### III. RPDs versus the Federal Funds Rate

In general, there seem to be four criteria for assessing a short-run open-market target. Two, mentioned by Frank Morris, can be dismissed quickly. These are *controllability* — the ability of the Account manager to control the variable — and *information lags*. The Federal funds rate ranks slightly higher than RPDs on both of these criteria although RPDs also rank fairly high.<sup>9</sup>

The third criterion of an open-market target is its utility in controlling longer-run targets. The interesting paper by Pierce and Thomson<sup>10</sup> shows the complexity of the problem of discriminating between short-run targets on these grounds, and gives no *a priori* reason for believing that RPDs are better than the Federal funds rate.<sup>11</sup>

The fourth criterion is central and will occupy the remainder of my remarks. A short-run target should cause the Manager to respond appropriately to disturbances that had not been anticipated when the Committee gave him his last instruction. In comparing the Federal funds rate and RPDs on this criterion, we must distinguish a number of different types of disturbances, and in each case we must ask, “How important is it if the Manager responds inappropriately?”

<sup>8</sup>See Erich Fromm, *Escape from Freedom*, Rinehart, 1941.

<sup>9</sup>The problem of information lags can of course be subsumed under the problem of controllability. For an extensive discussion of the controllability problem, see Richard G. Davis, “Short-run Targets for Open Market Operations,” in *Open Market Policies and Operating Procedures — Staff Studies*, Board of Governors of the Federal Reserve System, July 1971.

<sup>10</sup>James L. Pierce and Thomas D. Thomson, *Some Issues in Controlling the Stock of Money*.

<sup>11</sup>The same point may be made with regard to that hoary relic of the money-market strategy, free reserves.

Consider an unanticipated change in operating transactions — an unusually large rise in Federal Reserve float, for example. Since this disturbance will tend both to lower the funds rate and to increase RPDs, the Manager will respond appropriately by withdrawing reserves, using either a Federal funds rate or an RPD target. On the other hand, in the face of a change in deposit mix that affects the average reserve requirement, and therefore excess reserves, the Manager will respond appropriately if he is using the Federal funds rate but *not* if he is using RPDs (since RPDs are not affected by this disturbance). I don't consider either of these two types of disturbances very important and they will not be considered further.<sup>12</sup>

There are three types of disturbances which I believe are most important in evaluating the relative merits of the Federal funds rate and RPDs as short-run open-market targets. The first is a change in the demand for money associated with unexpected strength or weakness in economic activity. If we take a simple-minded equation where the demand for money is equal to some coefficient times GNP, then demand will be higher when GNP is higher. The appropriate response to such a change generally is not to accommodate it. The Manager would not accommodate the change in demand if he were using RPDs whereas he would accommodate it if he were using the Federal funds rate. In this case, therefore, RPDs provide better control over the monetary aggregates than the Federal funds rate. The consequences of an inappropriate response, however, are trivial so long as the strategy includes monetary aggregates as long-run targets. All that happens is that the monetary aggregates go off their target path for a few weeks, until the Federal funds rate is adjusted to get them back. Pierce and Thomson suggest that the money supply can wander off path for up to two quarters without doing any significant damage.

The last two disturbances, which have different implications, are, first, an unexpected change in the demand for money from sources other than changes in economic activity (the coefficient changes in my simple-minded equation); and unexpected changes in the banks' desired level of free reserves (banks wish to hold more excess reserves or have lower borrowings from the Federal Reserve at prevailing interest rates). Both types of disturbance should be and are accommodated using the Federal funds rate; they are not accommodated using RPDs.

<sup>12</sup>Another disturbance that will not be considered in this paper is a change in U.S. Government deposits. This turns out to be a very complicated disturbance to analyze, but my preliminary thinking suggests that the Federal funds rate will not come off second best when compared to RPDs.

How important is the failure to accommodate these two types of disturbances using RPDs? In most cases very unimportant. Interest rates in the typical case will rise or fall more than expected but the disturbances will typically reverse themselves in a short time and no harm will be done. However, I don't think we can take this harmless sequence any longer for granted. There is another possible scenario — a scenario that leads to financial panic.

#### IV. Thinking the Unthinkable

Basically, panics are a general loss of faith in the capacity of financial institutions to deliver on their promises, and a consequent rush by those to whom the promises have been made to convert them quickly, before others do so, and before the institutions' resources are exhausted.

What sort of promises? Before the Federal Reserve Act it was the promise of commercial banks to convert their deposit or note obligations into gold, silver or other "lawful money." It was this promise that was under attack also in the great depression of the 1930s. Today, however, bank promises to convert their deposits are not subject to question. The two important promises that are subject to question today are the promise of securities dealers to make markets in major debt instruments; and bank promises to make loans, particularly to large corporate customers with established lines of credit.

The backdrop conditions for an emerging financial crisis are the fragile liquidity positions referred to earlier, an investment boom generating strong credit demands, and a tight-money policy adopted by the Federal Reserve. Suppose that under these conditions an unusually large disturbance hits the market — an increase either in the demand for money or in the banks' demand for free reserves. Since the Manager is following RPDs, the disturbance is not neutralized. Interest rates rise much more rapidly than anyone is accustomed to. As a result, dealers become apprehensive that further increases of unspecified magnitude may be impending, they refuse to take any more securities into position, and they may even attempt to go short. At this point the financial markets stop functioning effectively and a cumulative process — a scramble for liquidity — could begin and move with extraordinary rapidity.

(a) Suddenly, as it is realized that markets are undependable, the liquidity of "liquid assets" evaporates.

(b) As a result, a secondary wave of loan demands hits the banks just when the banks find that because of the markets' collapse they

also are unable to raise the funds they need by selling assets or CDs. This leads bank loan commitments to come into question for the first time. The panic is on.

(c) As a result, a third wave of anticipatory loan demands hits the banks. The new borrowers want to stockpile against future needs and against the possibility that if they don't get theirs now the supply may be exhausted. Since the bargaining position of these borrowers will in many cases be stronger than that of borrowers who have pressing current needs, the distribution of available loans takes a turn for the worse. The same cash-hoarding tendencies quickly come to pervade the pattern of intra-firm trade credit. Everyone wants longer credits and quicker collections.

(d) The inevitable maldistribution of cash resulting from the spread of the hoarding psychology leads to inability of some otherwise solvent firms to meet their debts, and bankruptcies begin to mount. This causes lenders to reevaluate the credit-worthiness of customers, and yield and availability differences between "high grade" and "low grade" borrowers widen markedly.

(e) And so on. . .

There are several types of rejoinder to my fear-mongering on which I wish to comment. The first is that if the Federal Reserve stabilized monetary aggregates, disturbances of the type I have described would be small.<sup>13</sup> This argument has always seemed to me to be a piece of monetarist theology for which there is no evidence. That major disturbances in the past (particularly in the 1930s) may have resulted principally from the Federal Reserve's own actions does not at all imply that the market cannot generate major disturbances. During the period when the Federal Reserve followed a money-market strategy the money stock fluctuated markedly on a week-to-week basis. Since the money-market strategy was basically accomodative, this testifies to instability in the demand for money. Whether this instability is of sufficient magnitude, under the type of conditions I have posited, to generate a crisis I don't know and neither do the monetarists.

A second rejoinder is that the market will adjust to the new conditions generated by the revised open-market strategy, in such manner as to dampen the tendency for wider rate fluctuations. Davis notes that "institutions could be expected to learn to respond more flexibly to take advantage of rate fluctuations — thus increasing the

<sup>13</sup>For an example of this viewpoint, see Richard T. Selden, "Liquidity Crises and Monetary Policy," *The Morgan Guaranty Survey*, September, 1970.

supply elasticity and thereby dampening the fluctuations themselves."<sup>14</sup> Such adaptations, however, are costly and they will be adopted only to the extent needed to deal with the general run of disturbances that occur week-in-and-week-out under the new regime. Financial institutions will not stand the cost of preparing themselves to cope with a major disturbance without a marked shift in psychology and confidence that is likely to occur only as a result of a crisis. Indeed, our long history of bank crises indicates that even crisis-induced adaptations are likely to be short-lived.<sup>15</sup>

The third rejoinder, and the only one to be taken seriously, is that the new open-market strategy does not throw the market to the wolves. Alan Holmes has indicated that "the Committee... continues to demonstrate a lively concern over the state of the money and capital markets."

In general I believe this rejoinder is well taken. In all probability if a disturbance occurred which the Manager could not accommodate without driving RPDs far off the target, he would go back to the Committee and get special authority to do what had to be done. Nevertheless, I believe that there is an uncomfortable probability that the Committee would not take effective action. Let me give you the reasons for that judgment.

Although the current Federal Open Market Committee is better informed and perhaps more competent than any prior Committee, there is good evidence to suggest that it is also more prepared to take risks. At the same time Committee members could easily disagree on whether or not a critical stage had been reached — "everybody knows that those guys in New York always want to coddle the market."

Once a panic begins to develop momentum, furthermore, the resources needed to turn it back may be massive relative to the magnitude to which policy-makers have become accustomed. At that point courage and boldness are needed as well as intelligence. These are rarer qualities and it is hard to predict whether or not they will be forthcoming. Certainly, I am not reassured by the decision-making machinery involved. A committee of twelve members does not lend itself to bold actions on an unprecedented scale. In the past the FOMC has been chronically disposed to move in small steps, partly

<sup>14</sup>Davis, p. 58.

<sup>15</sup>For a general discussion see George R. Morrison, *Liquidity Preferences of Commercial Banks*, University of Chicago, 1966.

because moderation and compromise are a natural outgrowth of conflicting viewpoints.

None of these points will cause you, I am sure, to take my warnings seriously. Inevitably, the dangers will appear less threatening to an insider than to an outsider. The insider generally has more confidence that the responsible persons in the Federal Reserve will take the right action at the right time. The outsider is more impressed with the need for procedural safeguards that make it difficult for those in authority to make serious errors. You should not sell this view short.

In a post-mortem on the 1966 "crunch" Governor Brimmer expressed surprise that anyone could believe that the Federal Reserve would have allowed market developments to get out of hand; yet he conceded that "this impression did take root in the minds of a number of market participants and serious observers of the financial scene." It seems to me that the nervous nellies in 1966 had the logic of history on their side. Governor Brimmer was naive in expecting the financial community to have complete confidence in the ability of the Federal Reserve to dance around the brink. The System will earn this confidence when they can point to procedures which assure that they will not fall off the end.