

RPDs as the Target

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An important new set of initials has recently been added to the vocabulary of monetary policy: RPDs — reserves against private deposits. In this paper I propose to set forth the reasons why I, as a non-monetarist, have long supported the proposition that the primary operating instruction to the Manager of the Federal Open Market Account should be couched in terms of the rate of growth of reserves. In addition, I will attempt an assessment of what we have learned thus far in our relatively brief experiment with the use of RPDs as an operating target and speculate a bit about some potential problems which we have not yet encountered.

In a paper presented to the American Economic Association last December, Governor Andrew Brimmer placed the Boston Fed next to the St. Louis Fed in the spectrum of thinking on monetary issues among Federal Reserve Banks — with the St. Louis Fed at one extreme and the New York Fed at the other. This classification raised a good many eyebrows in Boston where monetarism has not yet been able to establish a foothold. I suspect that a major reason for Governor Brimmer's classification was my efforts to support a shift to a reserves operating target for monetary policy. The fact is, however, that my advocacy of a reserves target has been rooted in operational rather than ideological grounds.

I think money is important, but not so supremely important as to classify me as a monetarist. I am not persuaded by the evidence that there is a unique, or even an operationally reliable, relationship between the rate of growth in the money supply and real economic activity. My views on the efficacy of fiscal policy are neo-Keynesian, although this does not mean that I believe the manner in which a deficit is financed is unimportant. I do not believe that the private

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This is a personal testimony on monetary policy and should not, in whole or in part, be ascribed to the Federal Reserve System.

economy is inherently stable; quite the contrary, I believe that a capitalist economy is inherently unstable. I do not believe that the demand for money is stable; in fact, we had a dramatic demonstration in 1971 that the demand for money occasionally can be quite unstable, an episode to which I will refer later. I find a stable monetary growth policy economically unpersuasive and politically naive. Monetary policy must remain flexible, but we must seek ways of implementing a flexible policy more effectively than in the past. Having said this to establish that there is still a considerable distance between St. Louis and Boston, let me state my reasons for advocating a reserves target.

Debate on the implementation of monetary policy has been going on, more or less continuously, for decades within the Federal Reserve. Not unnaturally, a particular FOMC member's views are likely to be conditioned by the stage in this long debate in which he entered. Certainly this is true in my case. My first FOMC meeting was in September 1968 when the Federal Reserve was in the midst of making what, in my judgment, was its most serious policy error of the decade of the 60s.

Monetary policy was clearly too expansionary in the last half of 1968. The important fact, however, was not simply that a mistake in judgment had occurred. We will always be subject to such mistakes. The important fact was that the method of implementing monetary policy then in force, with its primary emphasis on short-term money rates, had led to an expansion in the monetary aggregates which was substantially greater than *any* member of the FOMC had thought appropriate in an economy with an unemployment rate averaging only 3.6 percent and suffering strong inflationary pressures. During the fourth quarter of 1968 RPDs grew at an 11 percent annual rate, M_1 at an 8.3 percent rate, and M_2 at an 11 percent annual rate. As a newcomer to the Federal Reserve System I was struck by the fact that our method of implementing monetary policy was not capable of assuring the sort of control over the growth of the monetary aggregates than even non-monetarists could agree we had to have.

In looking back at the late-1968 experience, it is clear that the initial source of error was a faulty economic forecast. The Federal Reserve forecasters in common with almost all other forecasters in the country, grossly overestimated the near-term impact of the income tax surcharge. Undoubtedly, the policymakers gave considerable weight to the fact that the Federal Reserve staff forecasting record before (and since) had been extremely good. Another factor, but one difficult to weigh, is the fact that the income tax surcharge

had been sold to Congress, at least in part, on the ground that monetary policy could, thus, become more accommodative.

During the last half of 1968, the instructions of the FOMC to the Manager were geared primarily to short-term money rates, with a proviso clause stated in terms of the rate of growth of the bank credit proxy. In practice, 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. The extent of the real restraining influence of the proviso clause is suggested by the fact that the proxy grew at a 12.3 percent annual rate during the last half of 1968.

During 1968 and 1970 the argument over the proper approach to implementing open market operations tended to be relegated to the back burner. During those years the conditions for conflict between a money-market strategy and a reserves-growth strategy did not exist. There was, as always, room for questioning the wisdom of the policy itself, but the manner of implementing open market operations was not a critical issue. The central policy issue of those years was the use of Regulation Q as the "cutting edge" of monetary policy and the maze of regulations which stemmed from it; but this subject had better be left to another day.

Oddly enough, interest in the manner of implementing open market policy was revived by an event of no economic significance: the sharply divergent growth rates of the aggregates in the first and second halves of 1971. This was not a mistake of monetary policy by my reckoning, since I have not been able to identify any adverse economic consequences. Nonetheless, the event served to evoke renewed concern in the Congress and among the public as to the ability of the Federal Reserve to control the money supply adequately and it served as a reminder to some of us in the Federal Reserve that we had not changed in any fundamental way the manner of implementing policy which had contributed to the mistake of 1968. It was this "non-event" of 1971, however, which led to increased support for the reserves strategy.

Somewhat ironically, perhaps, the statistical work presented in a supplement to this paper suggests that we would have had an uneven growth rate in M_1 in 1971 even if the FOMC had been following a stable RPD growth policy. There was a dramatic shift in the demand for money in 1971, the timing (if not the dimensions) of which was forecast quite accurately by the Federal Reserve Board staff. As a consequence, M_1 grew much faster than normal relative to RPD growth in the first half of the year and relatively much slower in the

second half. Nonetheless, a variation in the rate of reserve input was a major contributing factor: RPDs grew at a 10.8 percent annual rate in the first half of 1971 and a 4.5 percent rate in the second half.

I am inclined to believe, however, that monetary policy in 1971 would not have been much different if we had been following a reserves strategy. During the spring months of 1971 we faced a very strong demand for money while, at the same time, our economic projections (quite correctly) were indicating relatively sluggish real growth in both the second and third quarters of the year. It appeared that the strong demand for money was not a function of a surge of strength in the economy. Nonetheless, there was always a chance that the forecast could be wrong and, in establishing policy, it was important to calculate the "cost of forecast error." In the context of the spring of 1971, with the unemployment rate averaging 6 percent, the "cost of forecast error" was negligible, since we would have plenty of time to correct an excessive rate of growth of the money supply long before the economy could get close to full employment levels of operation. Obviously, this was quite a different situation than we faced in the last half of 1968, when the "cost of forecast error" was extremely high.

As I stated earlier, my advocacy of a reserve-growth strategy has been based on operational rather than ideological considerations. A reserve-growth strategy will, in my judgment, provide a superior framework for decision-making by the FOMC. There will be occasions in which the Committee will, and should, subordinate its objectives with respect to the monetary aggregates to meet interest-rate objectives. However, as long as its primary instruction to the Manager is stated in terms of reserve growth, the FOMC will be forced to focus on the estimated rate of reserve growth required to meet its interest-rate objectives. An operating procedure which requires an assessment of the quantitative trade-off between interest rates and reserve growth will, in my judgment, make for better decision-making.

Would a reserve-growth strategy have made a difference in 1968? The reconstruction of history is a hazardous business. Historians still quarrel about whether it would have made a difference at Waterloo if Napoleon had been in good health. Judgments will differ, but mine is that the 1968 experience would have been different had we been following a reserve-growth strategy. The Committee, as we moved into the fall months, would have been faced with a choice between abandoning the prevailing interest-rate policy or permitting RPDs to grow at an 11 percent rate. Posed in this framework, I think the

Committee probably would have reacted sooner than it did. The weakness of the decision-making process then in use was that it did not compel a deliberate, quantified analysis of the trade-off between interest rates and reserve growth.

The Case for RPDs as the Target

It is a truism that if the central bank's economic forecast is correct and if the relationships between the economic forecast and interest rates, reserve growth and the rates of growth of other monetary aggregates are correctly forecast, it makes no difference whether the operating target of the central bank is expressed in terms of the Federal funds rate, M_1 , M_2 , RPDs or what have you. The critical choice, however, is the optimum variable for the central bank to control, from the standpoint of minimizing policy error, if the forecast should prove to be wrong. For a number of reasons, I believe reserve growth is the optimum control variable for the central bank in a forecast error situation.

The monetarist's answer to this question is that the central bank should abandon forecasting and seek, as a matter of deliberate policy, the second-best solution by following a constant monetary growth policy. While I cannot accept the solution, I recognize the critical importance for a central bank to follow a strategy which will minimize losses from forecasting error.

The money-market strategy fails this critical test since it is likely to produce more perverse results in a forecast-error situation than a reserves strategy — producing more money when the economy is stronger than expected and less money when it is weaker than expected. Late 1968 is a classic case of the former; late 1959-early 1960 is a classic case of the latter. Equally important, in my judgment, is the probability that a forecast-error situation will be recognized more rapidly if the Manager is controlling reserves than if he is controlling interest rates. I will elaborate on this point a little later on.

Reserves are superior as a control variable to M_1 or M_2 or the bank credit proxy for four critical operational reasons. First, the Manager of the System Open Market Account can control the rate of growth of reserves within narrow limits over periods as short as two or three months. He cannot be expected to hit M_1 , M_2 or bank credit proxy targets within such a time frame; and experience suggests that nothing can muddy-up the decision-making process quite so thoroughly as for the FOMC to give its Manager a target that it has no conviction he can hit.

The other targets the Manager can hit in a two or three month time frame (and if the time frame is longer, control of monetary policy suffers) are the monetary base and the Federal funds rate. Because the demand for currency (unlike the demand for money) is reasonably stable, the monetary base could easily be substituted for reserves as a control variable. I suspect that one of the reasons that the New York Fed has been reluctant to surrender the Federal funds rate as the prime control variable is the fact that they know they can control it — no inconsiderable advantage.

Second, and of critical importance, is the information lag factor. I think it is difficult for anyone outside the Federal Reserve to appreciate the vital role that information lag can play in policy-making. Here again, the Federal funds rate scores high. There is a zero information lag with the funds rate. It is available instantaneously and the preliminary figure is not going to be revised. In day-to-day operations the Trading Desk is working with estimates for everything except short-term interest rates.

The FOMC Manager finds himself operating nine days to two weeks ahead of any reliable estimates of deposits at member banks. Only twice a year does he receive information on the level of deposits at nonmember banks, a secularly rising fraction of the total. The Manager with an M_1 target is in the position of a ship's navigator attempting to guide the ship only with the knowledge of where the ship was two weeks ago. In such a situation there will be an irresistible temptation for the navigator to look out the window and to be guided by what he can see immediately on the horizon. When the FOMC Manager looks out the window, the only things immediately visible are short-term money rates.

The information lag problem is greatly reduced when the Account Manager is instructed to focus on member bank reserves, since our intelligence on reserves is infinitely better and the information lags are very much shorter.

The third operating problem is the high random content in short-term movements in M_1 , M_2 , and the bank credit proxy. If we are pursuing an M_1 target and see that a bulge in M_1 occurred two weeks ago, we cannot be sure whether the bulge was due to random and self-reversing causes or whether we should interpret it as a basic change in trend. A number of weeks or even months may pass before we can accumulate enough evidence to make a confident judgment as to whether we are off course or not. In the case of reserves, on the other hand, if a miss occurs, we know very promptly why it happened and what is required to get reserve growth back on course.

The fourth operating problem is the diverging-aggregates problem, which frequently arises when the FOMC establishes targets for both M_1 and M_2 . What does the FOMC Manager do when one aggregate is on course and the other is running substantially above or below its track? The potential for this sort of confusion is reduced if the divergence problem is ignored during the interval between FOMC meetings and taken into account only in the context of establishing the reserve-growth path for the next period.

Of course, the divergence problem would be eliminated if the FOMC could agree on a single concept of money. However, not even the monetarists have achieved this state of grace. My personal view is that all of our present concepts of money contain so many arbitrary and questionable elements that it is difficult to take any single money measure very seriously. To cite one minor example, I have always thought it curious that the demand deposits of foreign governments are included in M_1 and M_2 , but the demand deposits of the U. S. Government are not.

Furthermore, our financial structure is changing so rapidly that a concept of money which might have been acceptable a few years ago may be obsolete now. A recent development in Massachusetts presents a good example of the limitations of static concepts of money. Depositors in mutual savings banks in Massachusetts, under a recent ruling of the Massachusetts Supreme Court, may now write checks against their savings accounts. The court ruled that this would not convert these accounts into demand deposits, because the savings banks had the legal right to defer payment for 90 days. However, since the savings banks in Massachusetts have not exercised this right for more than 40 years, their customers have sound historical grounds for viewing these accounts as demand deposits upon which $5\frac{1}{4}$ percent interest is paid. Certainly, economists are likely to agree that these deposits are closer to money than savings deposits at commercial banks, and yet we do not include them either in M_1 or M_2 . If third-party payments and negotiable drafts on deposits at thrift institutions spread from Massachusetts to the provinces, it seems to me that we will be compelled to move to an M_3 concept of money, which includes such deposits. At that time, we may also be required to consider whether the Federal Reserve has the power to exercise adequate control over the growth rate of an M_3 concept of money from a steadily shrinking base of member commercial banks.

At this point I would like to elaborate on a judgment made earlier to the effect that a forecast-error situation is likely to be recognized more rapidly if the FOMC Manager has as his primary directive the

control of reserves rather than interest rates. The reason lies in the very sensitivity of markets, the Congress and, consequently, the Federal Reserve to changes in interest rates.

In a situation where the economy is stronger than forecast and a reserves strategy is being employed, the Committee's attention will immediately be focused on the fact that interest rates are turning out to be much higher than expected and the faulty forecast is likely to be subjected to question rather promptly, for the only alternative would be to raise the reserve-growth path above the level previously thought appropriate to the forecast.

On the other hand, in the same situation with a money-market strategy, M_1 and M_2 will come in with much higher growth rates than forecast. The Committee's reaction in this case, however, is likely to be much slower: first, because of the information lag on the aggregates and, second, because the unexpected movements in the aggregates are likely, for a while, to be attributed to random and self-reversing movements before the faulty economic forecast is itself brought into question. This, in fact, was the history of the last half of 1968.

The opposite forecast error situation occurred in late 1959 and early 1960 when the economy was much weaker than had been forecast. RPDs *contracted* at a $2\frac{1}{4}$ percent annual rate in the first half of 1960 as the economy was poised to move into a recession. Even though RPDs were contracting, short-term interest rates declined during the first half of 1960. It is interesting to speculate what reserve-growth path would have been chosen by the FOMC if it had been following a reserves strategy in early 1960. From a reading of the minutes of the Committee meetings, I would guess that they would have chosen a low but positive number. I doubt that the Committee would have deliberately chosen to contract the level of reserves. If this judgment is correct, the decline in short-term rates would have been much more precipitous and the recognition of forecast error would probably have come much earlier than it did.

These, then, are the operational reasons why I believe a reserves strategy, by providing a superior framework for decision-making, will help to produce superior policy.

The Experiment Thus Far

At this point in time, we have had almost seven months experience with the implementation of a reserves strategy. The initial conditions for the experiment have been close to optimum. We have not yet encountered a crucially difficult choice between interest rates and reserve growth, nor have we yet encountered the diverging-aggregates problem.

Nonetheless, we have already learned a great deal. Most important, we have learned that the FOMC Manager can control reserve growth within fairly close limits over a two or three month span and that he can do so without producing undue instability in the Federal funds rate, day to day or week to week.

The advocates of a money-market strategy had for years raised the specter of chaotic conditions in the short-term money markets as a necessary price of any attempt to control reserve growth — with the implication, of course, that the price was excessive. Having a high regard for the talents of our associates at the Trading Desk, I had a strong conviction that, if put to the test of controlling reserve growth and maintaining orderly conditions in short-term money markets, they would find the means to accomplish both objectives simultaneously. Even though they may still not be completely enchanted with the reserves strategy, they have demonstrated to my satisfaction that they can manage it very effectively.

There are two problems which we have not encountered during the past seven months which will, at some point in time, put the reserves strategy to a more severe test. The most critical one, of course, is the policy issue generated when a desired intermediate-term path for interest rates cannot be reconciled with the desired reserve-growth path. The second, and lesser, problem is the diverging-aggregates or deposit-mix problem. Until such time as we return to the sort of stable growth path for the economy, which, in turn, will produce more stability in interest rates, the diverging-aggregates problem is likely to continue to plague the FOMC. The problem is complicated by the fact that we have no generally accepted theoretical structure for assessing the economic significance, if any, of diverging-growth paths among the aggregates.

If, for example, we are supplying reserves at a rate which will support a 6 percent growth rate in M_1 and a 9 percent growth rate in M_2 and the public, in utilizing these reserves, produces only a 3 percent growth rate in M_1 and a 15 percent growth rate in M_2 — should the FOMC be concerned? My own view is that the FOMC

should not be overly concerned about the deposit-mix problem per se: first, because there is very little we can do about it and second, because we know so little about its economic significance. I would not alter the rate of reserve input in this sort of context unless the incoming economic indicators were suggesting that there was too much or too little liquidity in the economy.

The research staff of the Federal Reserve Bank of Boston has developed some simple estimating equations describing the relationships between RPDs, M_1 and M_2 since 1960. The only adjustment made in the equations to improve the fit was to take account of the secular rise since 1960 in the percentage of total deposits in non-member banks — a trend which, if continued, will have great significance for monetary policy in the future.

Their analysis suggests that when interest rates are relatively stable and the economy is on a relatively stable growth path, as from late 1962 through early 1966, relationships between the input of RPDs and the resulting growth rates in M_1 and M_2 are very tight. However, in an unstable economy with wide swings in interest rates, the variances can be very great.

If the reserves strategy is to have a proper test, it is important to recognize that the control of RPDs will not necessarily assure the precise control of any other particular monetary aggregate. The inventory of potential leakages between RPD growth and M_1 growth, for example, is quite lengthy — even though RPD was defined to eliminate two potential leakages, U. S. Government deposits and interbank deposits. The leakage inventory would include the following:

1. Changes in the level of excess reserves.
2. Abnormal changes in currency in circulation.
3. Shifts in the distribution of demand deposits between Reserve city banks and country banks.
4. Shifts in demand deposits between member and non-member banks.
5. Most important, shifts in the deposit mix between demand, time and savings deposits, CDs — and also non-deposit sources of funds of the sort which absorb reserves. These shifts, in turn, may reflect the following:
 - (a) current and past growth rates in the economy
 - (b) current and past trends in interest rates
 - (c) the influence of Regulation Q and related regulatory actions
 - (d) changes in the liquidity preference of the public

One of the theoretical beauties of a reserves target, however, is that the reserves concept used can easily be structured to control fairly precisely the movement of any single aggregate. For example, if the FOMC were to consider it important to control, in a single-minded way, the rate of growth in M_1 , it would be necessary to make the following four changes:

1. Reserve requirements should be uniform for all member banks regardless of size.
2. Reserve requirements should be eliminated against time and savings deposits, CDs and non-deposit sources of funds.
3. All institutions offering demand deposits should be required to become members of the Federal Reserve System or to be subject to Federal Reserve reserve requirements.
4. The "reserves against M_1 " concept which the FOMC would then be utilizing as a target would have to be adjusted for abnormal changes in excess reserves or currency in circulation.

With the reserves target so structured, M_1 could be controlled rather tightly. Technique aside, however, there would remain the basic question as to whether the tight control of M_1 is a sensible objective for monetary policy. I am not persuaded that it is. The purpose of the exercise was to illustrate that if we could agree on a single monetary aggregate to control, it would be easy to specify the requirements for a reserves strategy needed to control it.

Concluding Remarks

H. L. Mencken is reported to have said: "There is always an easy solution to every human problem — neat, plausible and wrong." I am not suggesting that the reserves strategy offers an easy solution to the complex problems of monetary policy. However, I think it provides a superior decision-making framework within which to formulate policy. There will be occasions when interest-rate policy must have first priority in the decisions of the FOMC, but the Committee is likely to make sounder decisions if it is compelled by the logic of the directive to specify the rate of reserve growth which it is willing to accept to meet the interest-rate objective.

A second major advantage of the reserves strategy is that, because of the very sensitivity to interest-rate changes and the zero information lag on interest rates, a forecast-error situation is likely to be recognized more promptly than would be the case if a money-market strategy were being implemented.

Having said this, I am nonetheless aware that the excellence of our operating procedures will never shield the FOMC from the necessity of occasionally having to make very difficult choices between interest rates and monetary growth. It is these decisions, in the face of a multitude of uncertainties, which will always make the formulation of monetary policy a fascinating and significant business.

SUPPLEMENT

THE HISTORICAL RELATIONSHIP BETWEEN RPDs
AND THE MONETARY AGGREGATES

The quantity of RPDs is a primary determinant of the quantity of money. For example, if there were:

- a. no shifts in the mix of time and demand deposits,
- b. no changes in banks' holdings of excess reserves,
- c. no nonmember banks in the commercial banking system,
- d. no changes in CD holdings,
- e. no changes in the ratio of country banks to Reserve city banks, and
- f. no changes in the public's preferences for holding currency,

then any change in RPDs would result in an exact corresponding change in the monetary aggregate(s).¹

In fact, the deposit mix changes, excess reserve positions fluctuate, the role of nonmember banks varies, the volume of CDs swings widely, and so forth. Changes in these factors have interacted to produce secular as well as cyclical changes in the relation between RPDs and the monetary aggregates. On a monthly basis, the relationship is quite erratic. The additional M_1 associated with an additional dollar of RPDs has fluctuated between +\$100 (in March, 1970) and -\$110 (in February, 1969). The fluctuation in the increment of M_2 is even wider, +\$150 to -\$190.

Chart I shows the ratio of money (broadly and narrowly defined) to RPDs in the period from January 1960 to June of 1972. In January, 1960, each dollar of RPDs supported \$6.74 of demand deposits, \$8.47 of M_1 , and \$12.41 of M_2 . By June, 1972, each dollar of RPDs supported on the average \$6.03 of demand deposits, \$7.84 of M_1 , and \$16.26 of M_2 . Much of the secular rise in M_2 /RPDs can be explained by a shift in the deposit mix in favor of time deposits which lowered the effective average reserve requirement on total deposits. In contrast to the fairly steady rise in the ratio of M_2 to RPD, the ratio of M_1 to RPD has fluctuated around its downward

¹The magnitude of the change would depend on the level of reserve requirements. This factor is ignored in the discussion below as the RPD data have been adjusted for changes in reserve requirements.

trend. Starting from 8.47 in January, 1960, the M_1 to RPD ratio declined to a low of about 7.75 in late 1968. Over the next year, coinciding with the large rundown in CDs, this ratio rose to about 8.32. Since early 1970, this ratio has resumed its downward course, reaching 7.84 last June.

How much of the changes in the monetary aggregates can be accounted for by changes in RPDs alone? Regressing changes in the monetary aggregates (3-month moving averages) on the contemporaneous changes in RPD produces the following simple relationships:²

$$(1) \Delta M_1 = .140 + 3.616 \Delta RPD$$

$$R^2 = .48 \quad SEE = .32 \quad D.W. = .68$$

$$(2) \Delta M_2 = .482 + 9.796 \Delta RPD$$

$$R^2 = .74 \quad SEE = .49 \quad D.W. = .65$$

Movements in RPDs alone "explain" about half of the variations in ΔM_1 and nearly three-quarters of the variations in ΔM_2 . Charts II and III show the actual changes in M_1 and M_2 , respectively, and the changes which would be projected by (1) and (2) above. The equations track historical experience fairly well, avoiding consistent, substantial underestimation or overestimation for more than a month or two, with the following major exceptions:

- (1) They overestimate in the last half of 1960, the last half of 1970, and the last half of 1971.
- (2) They underestimate throughout 1969 and early 1971.

These discrepancies may be attributable to any of the factors that the simple RPD-estimating equations omit or even to errors in the data. Part of the explanation is suggested by the historical context in which the errors occurred. For example, large errors are observed in 1969. In that year the Regulation Q ceilings brought about a rapid decline in large certificates of deposit and forced commercial banks to obtain nondeposit sources of funds. When the certificates of deposit ran off, the reserves which were required to support them became available to support demand deposits, savings deposits, and

²The dependent variables in these equations exclude deposits at nonmember banks, i.e., M_1 above = (M_1 - demand deposits at nonmembers), and M_2 above = (M_2 - total deposits at nonmembers). The changes in nonmember deposits were then added to both sides of the equation to produce the actual and estimated changes in M_1 and M_2 shown on Charts II and III respectively.

other time deposits at commercial banks. Only these deposits, excluding CDs, are included in the monetary aggregates. As a result, the aggregates, especially M_1 , declined much less sharply in the second half of 1969 than the estimating equation predicts.

The reverse situation occurred in the second half of 1970 when the equations overestimated the increase in total non-CD deposits. Because of the elimination of the Regulation Q ceilings on short-term CDs in June 1970, commercial banks were able to double their volume of CDs in less than six months. These additional CDs absorbed a great volume of reserves which could not be used to support other types of deposits. As a result, non-CD deposits grew more slowly in the second half of 1970 than in the first, even though the Federal Reserve System provided a larger volume of RPDs.

Large errors also occurred during periods of rapidly changing market rates. When money-market rates are either increasing or declining rapidly, a change in deposit mix is induced at commercial banks. In the first half of 1971, for example, rates on short-term securities declined rapidly while deposit rates at commercial banks remained fairly stable. As a result, the commercial banking industry had a rapid inflow of savings and non-CD time deposits. These deposits have a relatively low average reserve requirement which enabled commercial banks to obtain a phenomenal increase in their total deposits, even though the Federal Reserve System provided a much smaller increase in RPDs. The reverse of this situation occurred in the latter half of 1971.

Chart 1

THE RATIO OF M_1 AND M_2 TO RPDs

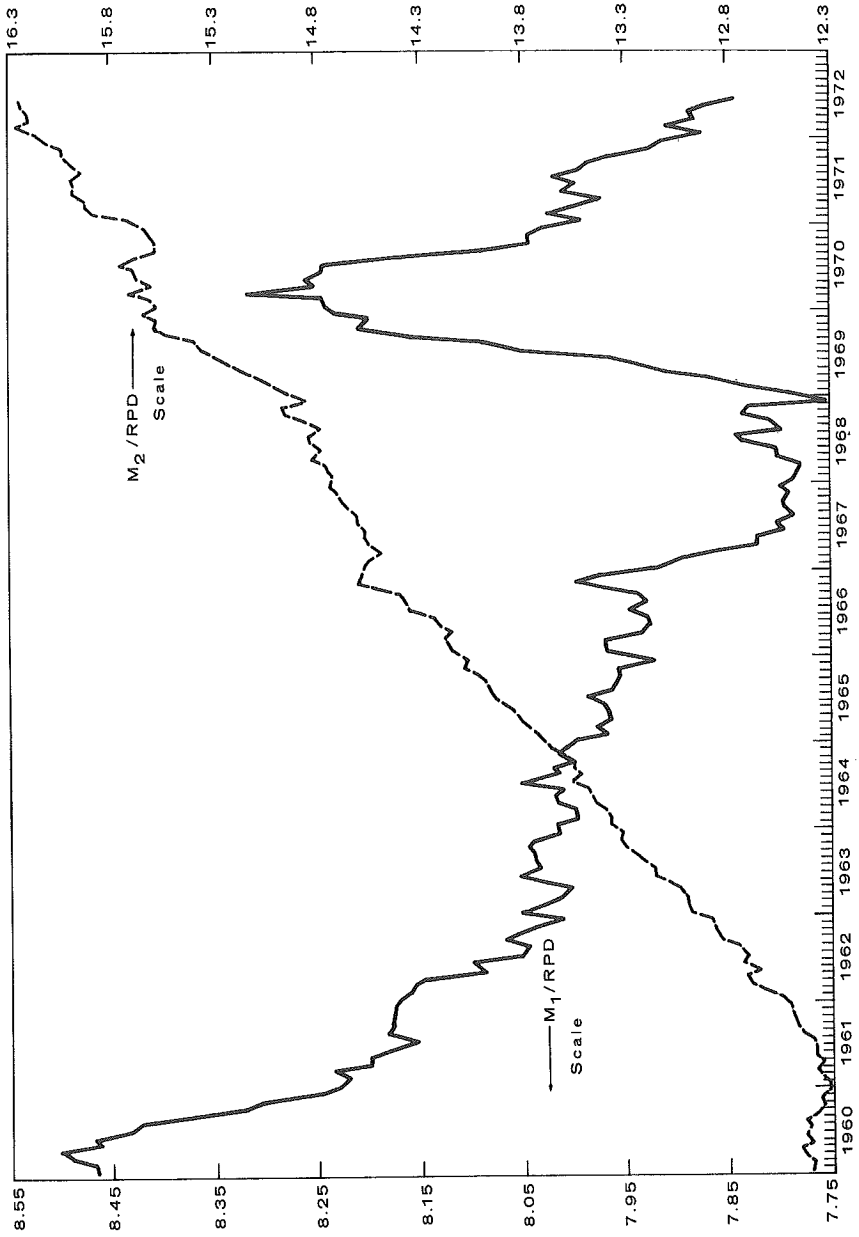


Chart 2
CHANGE IN M_1 : 3-MO. MOVING AVERAGE, ACTUAL & ESTIMATED

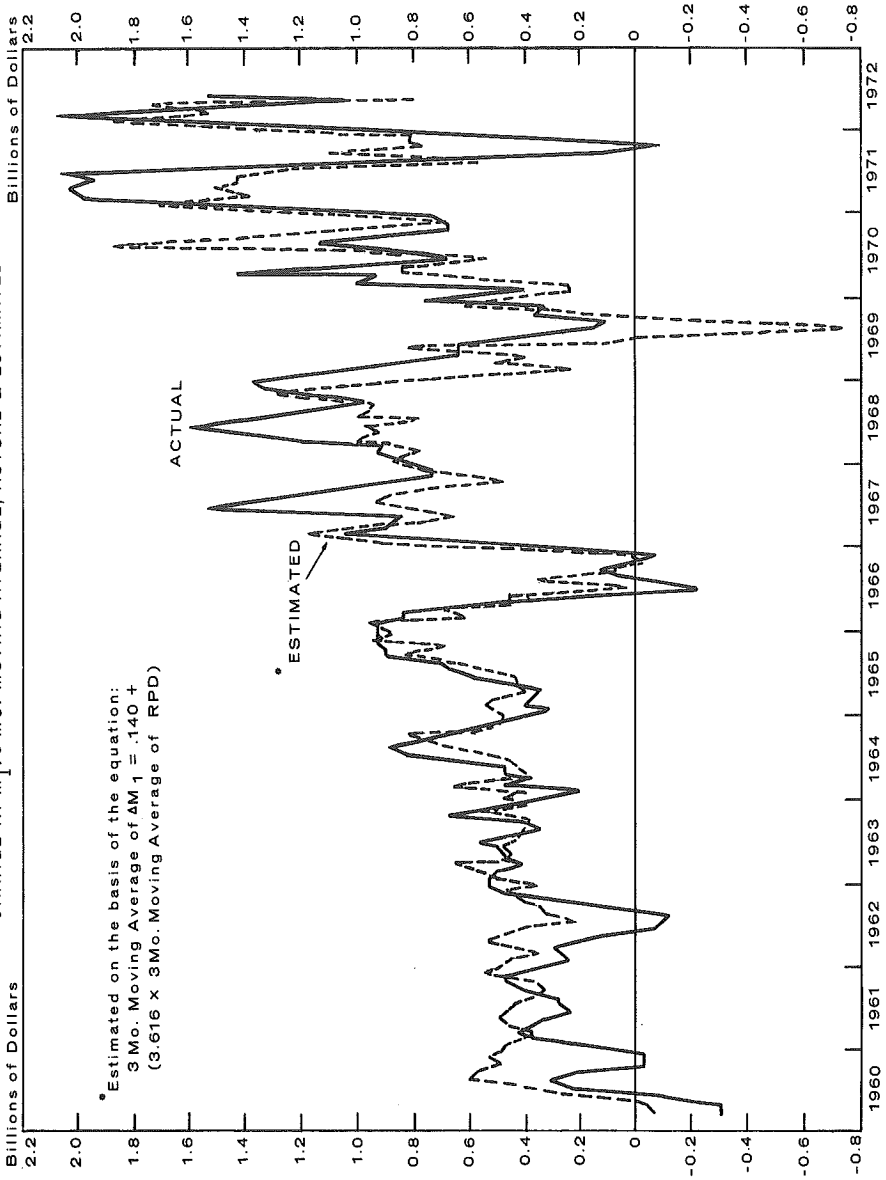
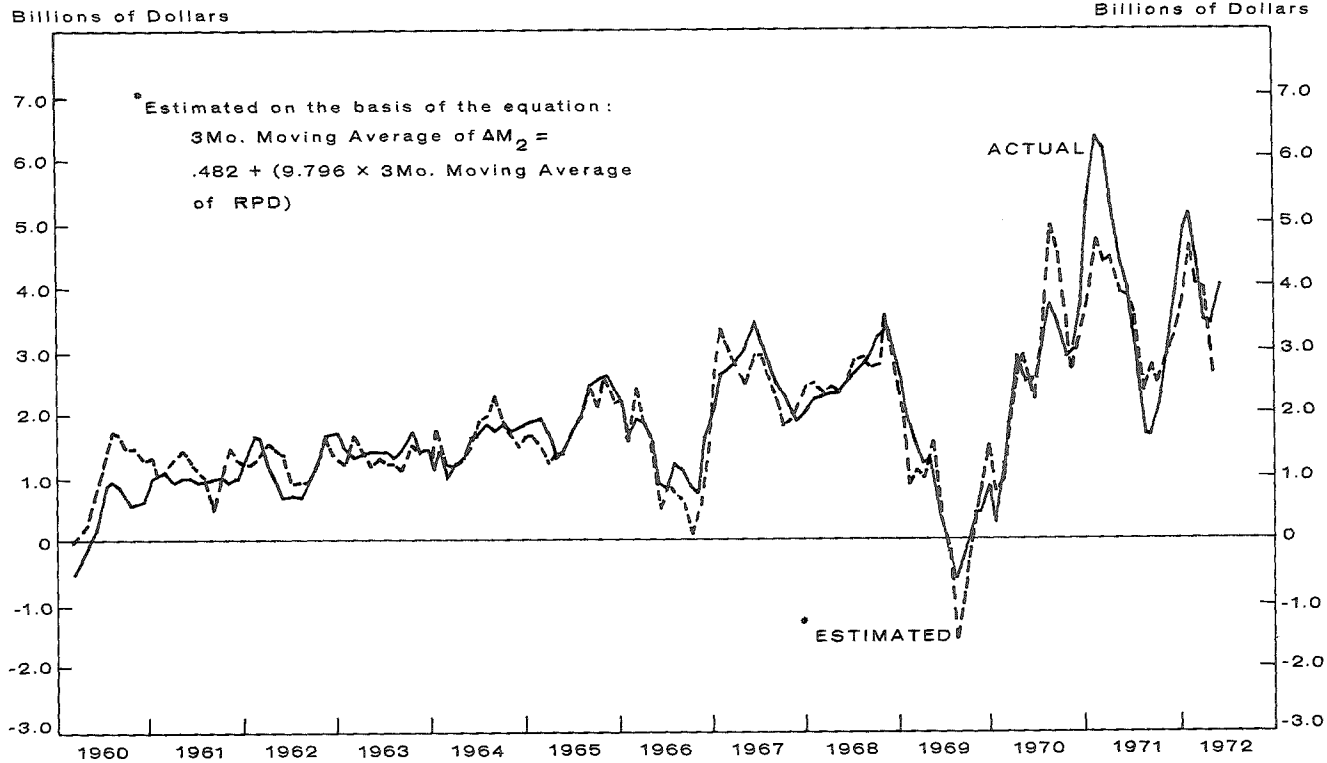


Chart 3

CHANGE IN M_2 : 3-MO. MOVING AVERAGE, ACTUAL & ESTIMATED



DISCUSSION

DEANE C. CARSON*

I am pleased to be here this morning to discuss Frank Morris' thoughtful paper on monetary aggregates. Since Frank is also wearing the hat of host to this conference, I would first like to express my appreciation for the contributions that these meetings have had over the past several years. The various Conference Reports have constituted a valuable addition to the literature of monetary economics, and those of us who have used them in our classes and otherwise congratulate you, Frank, for giving this new and significant direction to the research program of the Boston Federal Reserve Bank.

Frank Morris' avowal that he is a non-monetarist, neo-Keynesian advocate of reserve-aggregate targets reminds me of an incident that occurred approximately eight years ago today when a conference similar to this one was scheduled for Lafayette, Indiana. The sponsor of the conference had chartered two planes to deliver the participants from O'Hare in Chicago to the meeting and it just so happened that all of the neo-Keynesians (except one) were aboard one plane and all the monetarists on the other. As the "monetarist" plane flew over the hot fields of Indiana, it began to pitch and yaw, giving both discomfort and apprehension to its passengers. After a few moments of this, Karl Brunner broke the white-knuckle silence with an apparently rhetorical question: "It would be interesting to speculate on what would be the impact on the future of monetary economics if this plane were to crash and kill us all". After a few further moments of silence, the lone neo-Keynesian leaned across the aisle. "Karl," he said, "I have finished my speculation and I want you to know that I'm prepared to make the supreme sacrifice."

Not many of us feel that strongly about the monetary debate, I am sure. Frank Morris has taken a very interesting middleground approach to the policy implications of the monetarist controversy by apparently adopting a monetarist prognosis. He is prepared, for

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reasons with which all monetarists can agree, to argue that monetary aggregates are preferable to money-market conditions as policy targets, but he specifically disassociates himself from the monetarist objective of providing a stable monetary growth path, which he finds to be "economically unpersuasive and politically naive".

With regard to the economics of the question, we have presumably read the same evidence and thus have apparently irreconcilable differences of interpretation, since I find the evidence to be overwhelmingly persuasive in favor of adopting a stable monetary-growth path as the least economically destabilizing monetary policy that the Federal Reserve can adopt.

I do not propose to review this evidence this morning, since that is not the burden of my assignment. Nevertheless, I note that Frank's principal example of a policy mistake, that of 1968, was not *essentially* due to the fact that the Federal Reserve was using money-market conditions as an indicator of the impact of then current policy, but rather to the belief that a much faster rate of growth in the money supply was necessary and desirable to prevent fiscal overkill following the tax increase of that year. This discretionary decision was based, as you will recall, on the mistaken notion that the tax surcharge would have a substantial impact on spending without a significant lag. To compensate for these anticipated effects of the tax increase, the rate of growth of the money stock was accelerated, and this policy led to an acceleration of inflationary forces. The point that I wish to make is that the mere adoption of a reserve-aggregate target is not going to improve things much if the Federal Reserve continues in the future either to initiate or permit wide fluctuations in the money-supply growth rate.

I take Frank Morris' assertion that the adoption of a stable monetary growth path would be politically naive to mean that it would threaten the political independence of the Federal Reserve System. This is a much more compelling argument which monetarists have not been inclined to face. It is a realistic assumption that, *if* nominal interest rates were to fluctuate widely as a result of stable monetary growth, and particularly *if* they were to rise rapidly at times, Congressional wrath and Administration frustration could easily, almost surely, lead to attacks on the System from these sources, and it is extremely doubtful that the authorities could hold fast against them.

Interest Rate Stability

But it is not at all certain that interest rates would behave in an erratic fashion, once the stable monetary growth policy had been in force for a reasonable period of time. Indeed, there are many reasons to believe that such a policy would lead to greater interest-rate stability rather than less, not the least of which is the expectation that it would prevent the kind of price level and business fluctuations that partially account for nominal erratic interest-rate movements. As I interpret the evidence, the rapid increases in nominal rates that were experienced in the 1960s were caused by monetary forces and policies designed to keep interest rates under control and to "protect" the politically-sensitive areas of housing and financial intermediaries that serve the housing market. Moreover, the policies that led to these unfortunate results were based upon a neo-Keynesian theory of money and interest rates, and what I consider the really naive view that "easy money" leads to a lower rate of interest — period. In this light, the Fed has perhaps unwittingly generated the political pressures it so ardently seeks to avoid.

Nevertheless, there is a real case in which the monetary authorities would find that interest rates were rising rapidly even in the face of a stable growth rate of money. This would occur if the expenditures and deficit of the Federal Government were rising very rapidly, placing great pressure on the credit markets. In this case it is likely that Congress and the Administration would blame the rise on the monetary authorities, rather than on themselves, in the best political tradition. Thus, great pressure would be exerted to force the Fed off the stable monetary-growth path, and in precisely the wrong direction.

Turning to the substance of the paper, I note that Frank has taken the view that a reserve-aggregate policy target is preferable to interest-rate targets, and that he does not seem to feel strongly one way or the other with regard to which of several alternative aggregates is actually adopted. My inference in this respect is based upon his frequent use of the generic term "reserve aggregate" in place of the more specific "RPDs". This suggests that he would let the choice of aggregate rest on the evidence as to (1) which aggregate is the most easily controlled by the monetary authorities, and (2) the comparative performance of alternative aggregates with regard to predicting the money supply.

On the first criterion, RPDs are inferior to the Net Source Base, since their precise control depends on the ability of the manager of

the Open Market Account to predict the values of Government deposits, interbank deposits, member-bank borrowings, cash holdings of the public and non-member banks, and float, while the information required to track the Net Source Base is derived from the daily accounts of the Federal Reserve and the Treasury. RPDs, thus, are known with less certainty; their required estimate introduces a source of possible errors and difficulty in keeping the reserve aggregate on track.

With regard to the second criterion, a predictable relation between changes in the reserve aggregate and the money supply, Burger's evidence given this morning indicates a slight advantage for the Net Source Base which, when added to the considerations of (1) above, would argue for the latter's adoption by the Federal Reserve. It may turn out in practice, of course, that the difficulties in predicting RPDs are less considerable than the apparent magnitude of the task suggests, in which case there would be little, if any, need for a shift in the target; nevertheless, it does seem reasonable, other things equal, to adopt the target that involves the least amount of estimation.

Control of Rates

Frank has argued that a reserve aggregate would be superior to an interest-rate target in achieving a *desired* path of both the money supply and the interest rate itself. With regard to the latter, this is not crystal-clear, however. If the Federal Reserve knows what the desired path of interest rates should be, it would seem that the authorities could *directly* control the path of interest rates by open-market operations designed to peg the rate at the desired level, a policy that does not require the estimation of the required level of RPDs or any other reserve aggregate. Indeed, if the Fed follows the above strategy it cannot simultaneously choose the path of the reserve aggregate and the money supply. Frank partially clarifies this point in suggesting that by giving attention to the reserve aggregates the Fed will be forced to make an "assessment of the quantitative trade-off between interest rates and reserve growth". If this can be taken to mean that the trade-offs between interest rates and the *money supply* are more clearly assessed, his point is well taken. Nevertheless, when the Fed was clearly emphasizing money-market conditions in the 1960s, it was also clearly not unconscious of the money-supply effects of its policies. This suggests that it is even more important to make a wise assessment of the trade-offs than to adopt the correct target.

Both papers this morning give evidence that the control of reserve aggregates can achieve a reasonable degree of control of the money supply. The Federal Reserve Board staff has additional evidence that there is a predictable relationship between the Federal funds rate and the money stock. Thus, the ability to control the money supply seems to be widely agreed to and may properly be considered an issue that is no longer controversial. Our attention can now be focussed on the more important issues of how the Fed will use this power and under what circumstances money-supply control will be abandoned in favor of achieving interest-rate objectives. Frank's paper sheds little light on this question. Aside from several references to the possibility that such circumstances will arise, as well as to the considerable distance between Boston and St. Louis, the paper does not provide us with either clues or guideposts in this regard. Whether this is due to natural central-banker reticence or to the fact that the Fed has not yet developed these guideposts in its own deliberations is an important question, but not one that will likely be answered today.

In this regard, one suspects, as an outsider, that the shift to a reserve-aggregate target is more a change in emphasis than a clear indication that the monetarist view has infected the Federal Reserve body. And while we might expect that the shift will tend to bring about somewhat greater stability in the rate of growth of the money supply, Frank's Keynesianism and pragmatism, which seem to be the norm for the present authorities, would indicate that interest-rate control is far from being abandoned. The test of Federal Reserve intentions should come in 1973, when rising aggregate demand, resumption of accelerating inflation, and a huge Federal deficit will conspire to bring about a sharp rise in interest rates, if the current forecasts are correct.

Structural Changes

In his next to concluding remarks, Frank has enumerated several structural changes that would improve the Fed's control over M_1 . In general, these involve measures that would tend to reduce the potential instability of the money multiplier — the link between reserves and the supply of M_1 . These changes are widely recognized as desirable by economists of several schools. One should note that recently-proposed changes in reserve-requirement regulation seem to work at cross-purposes in this regard. On the one hand the Fed proposes to make size rather than location the means of discriminating among banks, while on the other the Fed has imposed reserve

requirements on non-deposit sources of funds. The latter is a retrogressive step, while the former is an ambiguous one. It is perhaps too early to tell what effect the substitution of size for geographical location as the criterion for reserve-requirement discrimination will have on the stability of the reserve multiplier; it is also unclear what effect this will have on arresting the decline in Federal Reserve membership.

In the latter regard, my proposal to abolish reserve requirements would almost certainly increase the instability of the multiplier and make control of the money supply more difficult. This cost must be weighed against the costs of inefficient bank portfolios that reserve requirements impose. As a possible compromise one might advocate uniform reserve requirements for all banks at a low level, say 7 percent of demand deposits. This would remove the reserve requirement differential as a source of instability, require a smaller monetary base, and improve the efficiency of bank portfolios.

I am delighted to note that this paper does not dwell inordinately on the alleged and real horrors that the Fed faces in measuring the money supply. It seems to me that, with all of the resources that the Fed has at its disposal, much more accuracy could be achieved. Why for example, has the Fed not pushed harder for uniform reporting by all banks? Why, moreover, are banks allowed to get away with their reporting errors? And why should there be any ambiguity about the "M₁-ness" of Massachusetts savings deposits subject to checking simply because the Massachusetts Supreme Court has declared them to be legally distinguishable from demand deposits? Frank has correctly concluded that the concept of money should be determined on economic grounds.

In conclusion, while I welcome this paper as a strong argument for reserve aggregates as the target of monetary control, I am apprehensive about many of its details. I find myself as much in the dark about the intermediate goals of monetary policy now as I was before I read the paper. In this regard, Dr. Morris, you have carried on one of the great traditions of central banking.

Nevertheless, I find the analysis of the technical superiority of reserve aggregates over money-market conditions one of great insight and remarkable clarity. Moreover, your paper demonstrates (with a few exceptions) a laudable willingness to accept evidence even in conflict with ideology, from which a lesson should be apparent to us all. On that basis, I hope someday to have you join me in BARK, which is the acronym for the Benevolent Association of Recycled Keynesians.