

FUNDAMENTAL REAPPRAISAL OF THE DISCOUNT MECHANISM

**A REVIEW OF RECENT ACADEMIC
LITERATURE ON THE DISCOUNT
MECHANISM**

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Prepared for the Steering Committee for the Fundamental Reappraisal of the
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The following paper is one of a series prepared by the research staffs of the Board of Governors of the Federal Reserve System and of the Federal Reserve Banks and by academic economists in connection with the Fundamental Reappraisal of the Discount Mechanism.

The analyses and conclusions set forth are those of the author and do not necessarily indicate concurrence by other members of the research staffs, by the Board of Governors, or by the Federal Reserve Banks.

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Project #9

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by

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I. Introduction

After approximately two decades of disuse, the Treasury-Federal Reserve Accord of 1951 prompted renewed interest in the nature and effectiveness of the discount mechanism. Analysis since the Accord has been devoted in large part to the unresolved controversy over the nature of the relationship between discounting and monetary control.

The scope of this paper will be confined to that post-Accord academic literature which bears directly on the implications of discounting for monetary control. Special emphasis will be placed on the determinants of member bank borrowing, including a review of the major issues and related empirical findings. The responsiveness of borrowing to interest rate movements is of particular concern in this regard. An effort will also be made to cover in some detail the wide range of proposed changes in the current discounting arrangement.

The primary intent of this paper is to present the post-Accord discounting literature in such a way as to highlight the major points of emphasis in recent analysis. Hopefully, information of this type can serve as important background material for a reconsideration of the role of the Federal Reserve discount mechanism. The paper does not attempt to assess the pros and cons of the many technical issues that are raised in the literature.

II. Major Issues and Related Findings

The fundamental issue raised by post-Accord literature dealing with the Federal Reserve discount mechanism is that of whether this mechanism operates to subvert or to supplement over-all monetary control. Critics have argued that the discount function as it currently operates is fundamentally antagonistic to monetary management. Related to this position, issues have developed around a number of topics, namely: (1) the effects of borrowing during periods of restraint; (2) the factors that determine borrowing; (3) the significance of non-price rationing; and (4) the announcement effects of discount rate changes.

Borrowing and Monetary Restraint

On one hand, the discount mechanism may be viewed as a sort of "safety valve" which cushions but does not offset the usually uneven impact on individual banks of restrictive shifts in monetary policy. Temporary reserves are allocated through the discount window directly to those banks coming under greatest stress, and thus the System is free to act more decisively than otherwise would be the case.

The case favoring the present discounting arrangement turns on the contention that reserves supplied through the discount "window" are by nature more restrictive in terms of credit and deposit expansion than reserves supplied through other means. Borrowing from the Federal Reserve is looked upon as only a temporary source of funds for the individual bank, usually requiring some form of asset adjustment in order to effect prompt repayment. Thus, the larger the overall volume of borrowing relative to other sources of reserves, the greater the restrictive impact on credit growth.

The academic critics of the existing discount mechanism have not sought to directly refute the points raised above. Their position is founded instead upon the following three general considerations:

1. The initiative in using the discount mechanism rests with the borrowing banks themselves rather than with those charged with the responsibility for monetary control;

2. Member bank borrowing from the Federal Reserve adds to total reserves, in contrast with the sale of Treasury bills or any other means of reserve adjustment available to the banks; and

3. Member bank borrowing tends to rise during periods of monetary restraint and fall during periods of monetary ease.

In essence, the critics hold that overall monetary control is weakened to the extent that discounting counters the impact of Federal Reserve System open market operations on the reserve base. Working in the context of models linking bank reserves to the money supply, and the money supply to real economic activity, some economists have argued that borrowing accentuates cyclical swings.

Determinants of Member Bank Borrowing

With discounting at the banks' own initiative and, therefore, difficult to predict, post-Accord inquiry has focused on the determinants of member bank demand for borrowed reserves. To what extent are bank borrowing decisions influenced by profitability considerations? How strong is the so-called "tradition against borrowing?" These questions are remnants of the old

need vs. profitability issue which was debated at length in the 1920's and 1930's.¹

The "need" concept has never been clearly defined by its advocates, but according to common interpretation banks that borrow out of "need" do so only to meet temporary, unexpected reserve deficiencies. At the same time, the needy banks supposedly make every effort to repay these debts as quickly as possible. This view of borrowing behavior presumes a strong traditional reluctance on the part of banks to be in debt to the Federal Reserve.

On the other hand, the strict version of the "profitability" thesis posits that banks will borrow whenever additional funds can be invested in earning assets carrying yields higher than the discount rate. In short, banks borrow out of a calculated effort to profit from rate differentials, rather than simply in response to the unpredictable swings in market factors that produce temporary reserve deficits.

Expressed in these terms, "need" and "profitability" appear to be conflicting motives. In effect, the borrowing-out-of-"need" proponents postulated an interest-insensitive bank borrowings demand function, while the

1. See for example, W. Randolph Burgess, The Reserve Banks and the Money Market, rev. ed. (New York: Harper and Brothers, 1936); Lauchlin Currie, The Supply and Control of Money in the United States, rev. ed. (Cambridge: Harvard University Press, 1935); Charles O. Hardy, Credit Policies of the Federal Reserve System (Washington: Brookings Institution, 1932); Seymour E. Harris, Twenty Years of Federal Reserve Policy (Cambridge: Harvard University Press, 1933); Winfield W. Riefler, Money Rates and Money Markets in the United States (New York: Harper and Brothers, 1930); and Robert C. Turner, Member-Bank Borrowing (Columbus: Ohio State University Press, 1938). For an excellent discussion of the points raised in these earlier writings, see A. James Meigs Free Reserves and the Money Supply (Chicago: University of Chicago Press, 1962), pp. 6-31.

"profitability" school visualized a functional relationship in which borrowings were interest-sensitive.

One of the few important contributions of the post-Accord discounting literature has been that of the theoretical resolution of the "need" vs. "profitability" issue. But even this accomplishment rests in large part on a modified concept of profitability which dates back to Turner's work in the 1930's. The argument runs roughly as follows: given a reserve deficiency or the need to borrow--whether the cause is an unexpected surge in required reserves, or a sudden cash drain, or some other reserve absorbing factor--the extent to which a bank makes use of the discount window for its reserve adjustment depends upon the relative costs of borrowing and other means of replenishing reserves. For example, the higher the Treasury bill rate (i.e., the higher the opportunity cost of running down bill holdings) relative to the discount rate, the greater the "profitability" of borrowing to meet a given reserve deficit. Thus, a reluctant bank that borrows only to meet its immediate "needs" can be, at the same time, sensitive to the rate differentials between its alternative sources of short-term funds. Using this modified concept of profitability, it has been demonstrated with some rigor that it is possible to integrate, into a consistent theory, bank reluctance to be in debt to the Federal Reserve and the profit incentive for such borrowing.

During periods of monetary restraint, the discount rate tends to lag behind rising market rates on alternative sources of funds and borrowings rise. Conversely, the discount rate remains above falling market rates on the same sources of funds during periods of monetary ease and borrowings fall.

This fact represents one basis of the contention that borrowings tend to accentuate cyclical swings.

Non-Price Rationing

The attitude of banks toward the non-price terms applied at the discount window has an important bearing on their borrowing decisions. Yet, these terms appear to be quite difficult to administer. A wide variation in non-price terms, between the various Federal Reserve districts and/or over time can serve to diminish significantly the predictability of borrowings. It is difficult, if not impossible, to separate the relative effects of non-price rationing from effects of bank reluctance to borrow. It has been argued that these two factors have a mutually reinforcing effect on bank borrowing. But there has been very little in the literature on this subject. Generally, there seems to be a dissatisfaction with non-price rationing, explicitly on the grounds that the price mechanism would operate more effectively.

Announcement Effects

A major source of contention in the literature has been the question of whether discretionary changes in the discount rate have undesired effects on expectations. On one hand, it is argued that one must make inconsistent assumptions about the behavior of lenders and borrowers in order for the announcement feature of discount rate changes not to have unintended effects. It has also been argued that, at best, the announcement effects will be unpredictable.

There are, however, those who see some merit in announcement effects. They argue that discretionary discount rate changes have two basic

advantages. First, the changes are widely publicized and especially useful as a universal means of signalling the intent, for example, to stem a balance of payments drain. Secondly, discount rate adjustments, as the only major monetary instrument having no direct reserve effects, can play a unique and often helpful role as an index of the course of policy.

Proposals for Change

Proposals for changing the discount mechanism have run the gamut from abolishing it all together, to allegedly making it the most powerful tool of monetary policy. Elimination of the discretionary aspect of discount window administration is the object of nearly all the proposed modifications in the mechanism.

A plan frequently advanced would eliminate discretionary discount rate changes by "tying" the discount rate to the market rate on some alternative source of ready funds. This type of arrangement usually involves setting the discount rate high enough above the anchor rate to make it a "penalty" rate. Most advocates of such a scheme would rely on the price mechanism alone to allocate Federal Reserve credit and to keep borrowing in check, discarding the present borrowing "privilege" with its non-price connotations in favor of granting banks the "right" to borrow. There has been controversy, however, on the appropriate market rate.

A somewhat more radical plan calls for the payment of interest at the discount rate on member bank excess reserves. Through discount rate adjustments, the Federal Reserve would then have direct control over the opportunity cost of bank lending. Under such an arrangement, banks would be tempted to increase their excess reserves and reduce their holdings of

short-term Government securities. The discount rate would take on sharply increased importance among the major instruments of monetary policy.

There are, in addition, those who would abolish the discount mechanism. Two basic reasons for such a move have been advanced. First, by doing away with borrowing at the banks' own initiative the Federal Reserve would greatly improve its control over total reserves. Secondly, it has been argued that the discounting function is no longer necessary in view of the substantial postwar growth in bank holdings of short-term Government securities which can be used to make the necessary adjustments in reserve positions. Needless to say, the latter argument is of diminished relevance under circumstances in which bank holdings of short-term Governments are minimal.

It has also been proposed, however, that the discounting terms should be fully discretionary. The basic contention is that the discretionary approach entails the power not only to control total borrowing, but also makes possible the selective control of bank lending practices.

Concluding Observations

Although most of the major issues raised in the course of the academic dialogue on discounting remain unresolved, it is possible to draw some general conclusions. Discounting does not, for example, appear to weaken monetary control to any significant extent during periods of monetary restraint. Indeed, the discount mechanism is, for the most part, a useful complement to open market operations. In particular, shifts in monetary policy are, as argued by those favoring the current arrangement, cushioned by the provision of temporary reserves through the discount window to those banks coming

under the greatest stress. At the same time, borrowed reserves have less expansive implications for credit and deposit growth than a corresponding amount of reserves supplied through other means.

On the other hand, regardless of how limiting the effect of borrowed reserves on credit growth may be, the fact remains that monetary control is rendered less precise under conditions in which banks borrow at their own initiative. Hopefully, the predictability of borrowing can be improved by reliable quantitative measurements of the relative effects of interest rates and other factors that influence borrowing decisions.

With regard to discount window administration and general supply considerations, there is almost unanimous agreement among economists on the desirability of complete reliance on the price mechanism to control borrowing. But regardless of how appealing the "tied" rate plans may be, there has been no final agreement on the market rate to which the discount rate should be linked nor on the appropriate spread to be maintained. While experience suggests that there should be some substantial revisions in the present non-price discounting guidelines, it seems, nevertheless, that both non-price and price terms will continue to be necessary to insure effective monetary control.

Finally, the predominant view in the literature is that under present circumstances discount rate changes will have, at best, ambiguous announcement effects. At the same time, those who fear that discount rate changes will have adverse effects on expectations may have over-rated their case a bit. In particular, it is not likely that discount rate changes alone, whatever may be their effects on expectations, dominate the behavior of borrowers

and lenders. Indeed, these rate adjustments are only one of many factors that influence expectations about the course of monetary policy and future economic conditions.

III. Discounting and Monetary Control

Borrowing and Monetary Restraint

As noted above, the assumption is frequently made by those favoring the current discount procedures that borrowed reserves are less expansive in terms of credit growth than a corresponding amount of reserves provided through open market operations.² It is argued that banks will seek to extinguish their borrowed reserves promptly, usually through some form of asset adjustment. In Roosa's words:

"In the American setting the fact that banks borrow only as a privilege means that even though any individual bank can temporarily, in effect, cause the creation of reserves by borrowing at the discount window, that same bank simultaneously takes on an obligation to find ways of extinguishing those reserves--the more promptly the better, in order to preserve its privilege for use again when unexpected reserve drains occur. Thus, as a general rule, the larger the aggregate volume of bank borrowing from the Federal Reserve, the greater will be the effort going on, through the banking system, to limit credits and bring reserves into balance with the requirements against deposits."³

The fact that Roosa casts his discussion in terms of the actions of an individual bank is not to deny that a high or rising volume of

2. See for example, Board of Governors of the Federal Reserve System, and the United States Treasury, The Federal Reserve and the Treasury: Answers to Questions from the Commission on Money and Credit (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 118.

3. Robert V. Roosa, "Credit Policy at the Discount Window: Comment," Quarterly Journal of Economics, LXXIII (May, 1959), p. 334.

borrowings for the banking system as a whole may persist for long periods as, for example, when an increasing number of banks turn to the discount window for temporary reserve relief. But the key point is that aggregate borrowed reserves have a restrictive impact on credit expansion and the higher the level of such borrowing, the greater the restriction involved.

Apart from the special nature of borrowed reserves, Samuelson has argued that the tendency for borrowings to partially offset the reserve effects of open market operations actually strengthens monetary policy. He observes that:

"While it is true that discounting often acts counter to open-market operations, there is no evidence that a unit change in open-market operations induces an opposing change in discounting large enough to reverse or substantially wipe out the original effect. So it is not really difficult for the planners of open-market operations to take all this into account; and precisely because they know that the discount window provides an escape valve, they can be more courageous in the use of open-market operations."⁴

Among the critics of the existing discounting arrangement, Milton Friedman looks upon borrowing with somewhat more alarm. He contends that with discounting at the banks' own initiative, the System is unable to exert direct control over monetary expansion.⁵

Warren Smith, another academic critic of the existing discount mechanism, asserts that those who emphasize the restrictive nature of borrowed reserves overlook the all-important fact that member bank borrowing adds to total reserves. "...Therefore...borrowing constitutes an offset to

4. Paul A. Samuelson, "Reflections on Monetary Policy," Review of Economics and Statistics, XLII (August, 1960), p. 266.

5. Milton Friedman, A Program for Monetary Stability (New York: Fordham University Press, 1959), p. 38.

the restraint that brought it about to the extent that the supply of reserves is thereby increased."⁶

Finally, the pro-cyclical fluctuations in borrowings have been criticized by Aschheim,⁷ and Brunner and Meltzer⁸ among others. In this regard, Aschheim observes that "...however strong the commercial bank tradition and however potent the Federal Reserve policy, they have not stood in the way of cyclical fluctuations in the volume of rediscounting...."⁹

Brunner and Meltzer go into somewhat more detail on this matter:

"The administration of the discount window contributed both in the twenties and the fifties to the cyclical variability of the money supply. The discount rate typically lags behind the movements of the market rates. A cyclical upswing, generated or reinforced by non-monetary factors, pushes market rates ahead of the discount rate, and induces banks to expand their borrowing. The rising volume of discounts and advances increases the [reserve] base and consequently, increases the money supply. A reverse operation occurs in a down-swing. The cyclical variability of the money supply is thus amplified by the operation of the discount window."¹⁰

Determinants of Member Bank Borrowing

Most of the post-Accord dialogue on the factors that influence borrowing decisions has been conditioned by the need vs. profitability issue that was

6. Warren L. Smith, "The Discount Rate as a Credit Control Weapon," Journal of Political Economy, LXVI (April, 1958), p. 172.

7. Joseph Aschheim, Techniques of Monetary Control (Baltimore: John Hopkins Press, 1961).

8. U.S. House, Subcommittee on Domestic Finance, An Alternative Approach to the Monetary Mechanism, by Karl Brunner and Alan H. Meltzer, 88th Congress, 2nd Session, August 17, 1964.

9. Techniques of Monetary Control, op. cit., p. 91.

10. An Alternative Approach to the Monetary Mechanism, op. cit., p. 89.

debated extensively in the 1920's and 1930's. Recent attempts have been made to isolate and quantify the impact of interest rates on borrowing, and general comments on the sensitivity of borrowing to rate movements are abundant in the literature. Somewhat less attention has been devoted to the question of bank reluctance to borrow. One of the more interesting contributions in the post-Accord literature is a theoretical reconciliation of these two motives.

Interest Rates and Borrowing. Many of those who feel that the present discount mechanism weakens monetary control are alarmed by evidence suggesting that borrowings are sensitive to interest rates and therefore work systematically against open market operations. Although the extent to which borrowings respond to rate movements is clearly an empirical question, the evidence is scanty. Typical of the casual observation in this area is the following: "No doubt it is true that banks are reluctant to borrow, but like many ordinary persons, bankers allow their reluctance to be overcome by more attractive alternatives."¹¹ Aschheim theorizes in a similar vein:

"The Federal Reserve prefers to state that in time of monetary tightness there is a great 'need' on the part of member banks for rediscounting. Economically, the more informative formulation, however, is that in times of monetary tightness it is more profitable for banks to borrow from the Federal Reserve than in other periods."¹²

Warren Smith is somewhat more specific about the way in which he feels that interest rates influence borrowing decisions, but he too stays

11. Earl Rolph, "Discussion," American Economic Review, Papers and Proceedings, XLV (May, 1955), pp. 413-414.

12. Techniques of Monetary Control, op. cit., p. 91.

primarily in the realm of supposition in observing that while bank demand for readily available funds to satisfy the kind of urgent needs that commonly induce banks to borrow at the discount window is probably quite interest-insensitive, the extent to which banks actually turn to the Federal Reserve to satisfy these needs rather than relying on other sources may be significantly affected by rate movements.

"In most cases, banks have a choice of obtaining additional funds by borrowing at the Federal Reserve or by liquidating secondary reserves or other investment securities. Surely, the major factor influencing the choice will be the relevant cost of funds obtained by the various methods, and this depends chiefly on the relation between the discount rate and the expected yield on assets that the bank may consider liquidating."¹³

Meigs, who actually focuses on bank demand for free reserves (excess reserves less borrowing), concludes that "aggregate member bank borrowing is indeed influenced by the net yields obtainable on borrowed funds, within a considerable part of the range of interest rates and other conditions observed."¹⁴ In this connection Meigs makes the point that the hypothesis that member bank borrowing is not responsive to changes in market interest rates cannot be confirmed solely by demonstrating that banks are reluctant to borrow. Rather, the characteristics of the demand schedule must be determined by direct empirical observation of borrowing and interest rates.

More recently, de Leeuw has concluded from empirical bank borrowings demand estimates (based on quarterly data for the 1954-62 period) that the

13. "The Discount Rate as a Credit-Control Weapon," op. cit., p. 172.

14. Free Reserves and the Money Supply, op. cit., p. 89.

response of borrowings to the differential between the discount rate and the yield on 3-month Treasury bills is "moderate," with implied long-run elasticities with respect to the discount rate and the yield on Treasury bills of -0.7 and +0.5, respectively.¹⁵ De Leeuw uses a stock-adjustment formulation of the borrowings demand function in deriving these results. According to the stock-adjustment principle, changes in bank borrowings in any given period are a function of the discrepancy between the desired level of borrowings in that period and the actual level of borrowings in the preceding period. De Leeuw posits that desired amounts of borrowing are dependent, in turn, upon the differential between the Treasury bill and discount rates, the Treasury bill rate level, and the net inflow of bank funds (i.e., changes in private demand deposits plus Federal Government demand deposits plus private time deposits less member bank required reserves less holdings of loans and other private securities).

In an empirical study patterned closely after de Leeuw's work, Stephen Goldfeld has estimated borrowing demand functions for city and country banks, separately.¹⁶ He found the short-run elasticity of changes in

15. Frank de Leeuw, "A Model of Financial Behavior," in The Brookings Quarterly Econometric Model of the United States, (eds.) James S. Duesenberry, Gary Fromm, Lawrence R. Klein, and Edwin Kuh (Chicago: Rand, McNally and Company, 1965), pp. 512-513.

16. Stephen M. Goldfeld, Commercial Bank Behavior and Economic Activity, (Amsterdam: North Holland Publishing Company, 1966). Goldfeld's short-run elasticities were calculated by

$$\frac{\partial(\Delta B)}{\partial r} \cdot \frac{\bar{r}}{\bar{B}} \quad \text{where } B \text{ represents bank borrowing and } r \text{ is the}$$

relevant interest rate. Note that the relevant mean used was that of the level of borrowing, \bar{B} . The mean of the flow variable cannot be used because it could well be zero in some cases. The long-run elasticities were obtained by setting the borrowings flow, ΔB , equal to zero, solving for the steady-state B , and differentiating as above.

borrowings with respect to the discount rate to be -0.875 for country banks and -0.979 for city banks. Comparable elasticities with respect to the Treasury bill rate were $+0.785$ and $+0.877$ for country and city banks, respectively. Goldfeld's long-run elasticity estimates for these variables were substantially higher than de Leeuw's and, surprisingly, were higher for country banks than for city banks. Specifically, the long-run elasticity of borrowings with respect to the discount rate were -2.926 and -2.382 for country and city banks, respectively. The Treasury bill rate elasticities were $+2.625$ for country banks and $+2.134$ for city banks.

In yet another empirical study, Goldfeld and Kane have disaggregated further by deriving borrowings demand estimates for four separate classes of member banks.¹⁷ Another distinguishing feature of this study is that the empirical demand estimates are based on weekly borrowings data. From a demand function relating borrowings to the Treasury bill-discount rate differential, lagged borrowings, and changes in nonborrowed reserves, Goldfeld and Kane calculated implicit short-run elasticities with respect to the bill rate of $.56$ for New York City banks, $.08$ for Chicago banks, $.15$ for other Reserve city banks, $.21$ for country banks, and similarly, $.21$ for total member banks. Goldfeld and Kane note that the long-run elasticity of borrowings with respect to the Treasury bill rate ranged from 2.8 to 3.9 for the various groups of member banks, and are thus generally consistent with Goldfeld's quarterly results. (Comparable elasticity estimates for the discount rate were not presented in this article.)

17. Stephen M. Goldfeld and Edward J. Kane, "The Determinants of Member Bank Borrowing: An Econometric Study," Journal of Finance, XXI (September, 1966), pp. 499-514.

The Federal Reserve System has not always been completely clear on the importance it attributes to interest rate considerations in bank borrowing decisions. The following is among its pronouncements on the subject:

"Banks are generally reluctant to become indebted to the Federal Reserve except for very short periods, and when in debt feel constrained to liquidate assets. The deterrents to borrowing are greatly weakened if market yields on securities owned become and remain substantially higher than the discount rate."¹⁸

Going into greater detail on the relationship between borrowings, market rates, and the discount rate under conditions of monetary restraint, the System has commented that:

"...it is of prime importance that the general reluctance of banks to borrow at the Federal Reserve be reinforced by a discount rate with real deterrent power at times when a tempering of bank credit growth is in the public interest. In other words, in order to make the discount mechanism an effective supplement to open market operations the Federal Reserve is obliged to maintain discount rates not markedly lower than market yields on the most readily available alternative source of bank reserves, Treasury bills. If the Federal Reserve in these circumstances did not adjust its discount rates to keep them 'in touch' with market rates, the task of administering the discount window to prevent excessive credit expansion would become very difficult."¹⁹

On the other hand, the System has more recently concluded that a comparison of the costs of alternative sources of ready funds with changing amounts of borrowed funds "does not suggest that there is a powerful borrowing response to changing cost considerations."²⁰

18. U.S. Congress, Joint Economic Committee, Employment Growth and Price Levels, Hearings, "Part 4--The Influence on Prices of Changes in the Effective Supply of Money," 86th Congress, 1st Session (May 25-28, 1959), p. 755.

19. Ibid., p. 756

20. The Federal Reserve and The Treasury: Answers to Questions from the Commission on Money and Credit, op. cit., p. 134.

Reluctance to Borrow. Attempts to discern the nature of the tradition against borrowing date back to the need vs. profitability discussions of the 1920's. Bank reluctance to borrow is commonly associated with the notion that since banks are already "in debt" to their depositors with repayment due in many cases on demand, it is imprudent to incur additional debt that is of a prior claim nature.²¹ Continued borrowing has been viewed as a confession either of weakened condition or of poor management.²² There is general agreement that the reluctance to borrow varies markedly in intensity among banks. Nevertheless, it has been argued that "in most cases" bank reluctance to borrow is "a deterrent sufficiently strong to prevent excessive use of discounting."²³

At first glance, the premium in excess of the discount rate that banks have paid for Federal funds might be construed as a manifestation of bank reluctance to borrow from the Federal Reserve. In fact, however, the larger banks that are primarily responsible for bidding up the Federal funds rate are almost certainly not insensitive to rates as the traditional meaning of reluctance would imply. Rather, these banks might be viewed as adding an implicit cost factor to the discount rate in order to take account of scrutiny by the discount authorities. Under such circumstances, the effective cost of borrowing to these large banks will exceed the published discount rate and the Federal funds premium may be largely illusory.

21. Ibid., p. 129.

22. "Credit Policy at the Discount Window," op. cit., p. 213.

23. The Federal Reserve and the Treasury: Answers to Questions from the Commission on Money and Credit, op. cit., p. 130.

Theoretical Reconciliation. Polakoff has demonstrated that it is possible to integrate into a consistent theory bank reluctance to be in debt to the Federal Reserve and the profit incentive for such borrowing.²⁴ The key assumption in Polakoff's theoretical scheme is that there is a "reluctance elasticity" on the part of member banks when borrowing from the Federal Reserve, which means that not only is there a reluctance to borrow at all times but that this reluctance increases as the volume of discounting grows. Viewing member bank borrowing decisions in the context of a "preference" system, Polakoff reasons that as borrowings rise in response to an increasing differential between the yield on Treasury bills and the discount rate, the disutility of borrowing relative to the utility of profit will eventually become so great that member banks will no longer borrow. He argues, in effect, that the banks' marginal propensity to borrow falls as the spread between the bill and the discount rates widens.

To test his hypothesis, Polakoff relates (in scatter diagrams) both weekly and monthly data on member bank borrowings to specific spreads between the bill and discount rates over the July 1953-December 1958 period. He concludes that "the expansion paths of borrowings suggested by the various scatter diagrams are all consistent with the theoretical results deduced from the integration hypothesis."²⁵ These empirical findings are not, however,

24. Murray E. Polakoff, "Reluctance Elasticity, Least Cost, and Member Bank Borrowing: A Suggested Integration," Journal of Finance, XV (March, 1960), pp. 1-18.

25. Ibid., p. 18. In a more recent article, Polakoff has fitted a quadratic function to his empirical data and offered this as further proof of his theoretical scheme. See: Murray E. Polakoff, "Federal Reserve Discount Policy and Its Critics," in Banking and Monetary Studies, (ed.) Deane Carson (Homewood, Illinois: Richard D. Irwin, Inc., 1963), pp. 205-207.

supported by Goldfeld's results from quarterly data for the somewhat longer 1950-III--1962-II period. Taking account of the impact of loan demand and reserve availability on borrowing behavior (something which Polakoff failed to do) Goldfeld tests specifically for the relationship between borrowings and the rate spread postulated by Polakoff. He finds that while borrowings are in general interest-sensitive, there is no tendency for the marginal propensity to borrow to fall as the rate differential widens.²⁶

Non-Price Rationing

The guiding principles of Regulation A (as amended in 1955) have been interpreted and applied only with considerable difficulty. The appropriateness of borrowing under these non-price terms turns on the intent of the borrower. A bank is not, for example, to willfully borrow in order to profit from rate differentials. But this is basically a subjective determination and the uses to which borrowed reserves are put are quite difficult, if not impossible, to pinpoint.

Distinctions between appropriate and inappropriate borrowing can be quite fine, as evidenced by the following case cited by a former Federal Reserve discount officer:

26. Commercial Bank Behavior and Economic Activity, op. cit., pp. 150-151. In their more recent test using weekly data covering the July 1953-December 1963 period, Goldfeld and Kane come up with what they consider to be "limited support" for the relationship between borrowings and rates hypothesized by Polakoff. See "The Determinants of Member-Bank Borrowing: An Econometric Study," op. cit., p. 513. The evidence offered by Goldfeld and Kane in support of the Polakoff hypothesis has recently been brought into question by Polakoff, himself, and Silber in "Reluctance and Member-Bank Borrowing: Additional Evidence," Journal of Finance, XXII (March, 1967), pp. 88-92. Polakoff and Silber argue that high colinearity in Goldfeld and Kane's observations bearing on Polakoff's hypothesis "sheds serious doubt on the validity of these results." In place of Goldfeld and Kane's analysis Polakoff and Silber present their own evidence which is interpreted as verifying the operation of the "reluctance/surveillance" motive in periods of "tight" money.

"...if a bank borrowed temporarily to meet a commitment to make a loan to a business concern at 4 per cent, with reasonable expectations of having funds at hand shortly to pay out, the bank would not be borrowing to earn a rate differential even though it was borrowing at the lower rate (in one market) and re-lending at a higher rate (in another market)."²⁷

With regard to the stability of discounting terms over time, Professor Whittlesey has set out to correct what he terms a "common misconception" that non-price discount window standards are adjusted to changing business conditions. He contends that: "The fact is that neither the way in which the discount window is administered nor the standards by which member bank borrowing is judged are modified to conform to over-all monetary policy."²⁸ Roosa is of a similar opinion:

"Insofar as human frailties permit, it is always the same [discount] window, open in the same way at all times for borrowers of the same circumstances. What makes the impact of these continuous standards seem to vary is that the circumstances of the banks themselves change."²⁹

The relative importance of discount window administration and the tradition against borrowing in borrowing decisions has been a point of contention. Professor Whittlesey argues, for example, that the administration of the discount window is not a significant feature of over-all credit control but merely acts in an indirect and admonitory manner "...to keep alive and reinforce the tradition against borrowing, without which discount policy as presently conducted could quickly break down."³⁰ According to Whittlesey,

27. George W. McKinney, Jr., The Federal Reserve Discount Window (New Brunswick: Rutgers University Press, 1960), pp. 106-107.

28. Charles R. Whittlesey, "Credit Policy at the Discount Window," Quarterly Journal of Economics, LXXIII (May, 1959), p. 209.

29. "Credit Policy at the Discount Window: Comment," op. cit., p. 334.

30. "Credit Policy at the Discount Window," op. cit., p. 216.

"...the privilege of borrowing, despite conventional statements to the contrary, is, in practice, tantamount to a right...."³¹

Roosa, for one, does not appear to be convinced that discount window administration does in fact play so unimportant a role in borrowing decisions. Without attempting to determine precisely where the influence of discount window surveillance begins and the influence of the traditional reluctance to borrow runs out, he contends that "both are certainly present; and whenever the check imposed by tradition might begin to falter, the limits imposed by surveillance would begin to take hold."³²

Finally, the difficulties in administering the provisions of Regulation A may have contributed to inter-Federal Reserve District variations in non-price terms. This is contended in a recent study of the relationship between borrowed reserves and total reserves in the various Federal Reserve Districts. The evidence provided, however, cannot be considered conclusive."³³

The dominant view in the literature is that there should be greater reliance on the price mechanism and less on non-price rationing in the allocation of Federal Reserve credit through the discount window. As will be seen in a subsequent section of this paper, proposals by Aschheim, Brunner and Meltzer, and Tobin all call explicitly for an "open" discount window where banks have the right to borrow all they wish at the existing discount rate.

31. Ibid., pp. 214-215.

32. "Credit Policy at the Discount Window: Comment," op. cit., p. 336.

33. See, David T. Lapkin and Ralph W. Pfouts, "Administration of the Discount Function," National Banking Review, III (December, 1965), pp. 179-186; and Jimmie R. Monhollon and James Parthemos, "Administration of the Discount Function: A Comment," National Banking Review, IV (September, 1966), pp. 89-92.

Announcement Effects

There has recently been a growing concern with the impact of discount rate policies on expectations. Apparently not everyone agrees with C.E. Walker's observation that changes in the discount rate are "a simple and easily understandable technique for informing the market of monetary authorities' views on the economic and credit situation."³⁴

According to Kareken, some asymmetrical assumptions about the behavior of lenders and borrowers are necessary in order to argue that the "announcement effects" of discount rate adjustments are necessarily stabilizing. In particular, lenders must be expected to interpret an increase in the discount rate as a sign that tighter credit conditions lie ahead and react with a more conservative lending policy; while borrowers, on the other hand, must take the discount rate rise as signaling the end of good times and cut back their spending plans and loan demands accordingly.³⁵

Samuelson is not so sure that the borrowers will in fact react in such a manner. He reasons that:

34. C. E. Walker, "Discount Policy in the Light of Recent Experience," Journal of Finance, XII (May, 1957), p. 229.

35. John H. Kareken, "Federal Reserve System Discount Policy: An Appraisal," Banca Nazionale Del Lavoro Quarterly Review, No. 48 (March, 1959), p. 109.

In a more recent article, Warren Smith has expressed these conditions under which announcement effects can be assumed to be stabilizing in Hicksian terms. That is, lenders must have elastic expectations about future interest rate movements while borrowers act on inelastic expectations. See Warren L. Smith, "The Instruments of General Monetary Control," National Banking Review, I (September, 1963), pp. 61-63.

"Today, financial men know that the Federal Reserve leans against the breeze,' tightening money when it thinks the forces of expansion are strong and easing money when deflation seems a threat. Therefore it is rational for an investor to say, 'Aha!', the "Fed" is raising interest rates; they must know that the current outlook is very bullish, and if that is going to be so, I'd better expand my operations.' Conclusion: Announcement effects are often ambiguous."³⁶

Taking a position similar to Samuelson's, Warren Smith concludes that, "the effects of discount rate increases on business expectations are likely to be destabilizing [i.e., optimistic] or at best, neutral," but hastens to add that he believes such effects to be "rarely of major importance" because the discount rate is only one of many kinds of information which go into the formulation of business expectations.³⁷

According to Smith, changes in the discount rate also induce shifts in expectations about monetary policy and bring on related "unsteadiness" in market rates. Failure to increase the discount rate when the Treasury bill rate rises to or above its level, may, for example, trigger a decline in interest rates, especially if current business indicators point even slightly downward. In attempting to smooth such a swing, the System might bring about **tighter monetary conditions than would otherwise be desirable. Monetary control may also be undermined, Smith argues, when a technical increase in the discount rate, to bring it in line with market rates, is interpreted as a sign of tighter monetary policy ahead, causing a sharp rise in rates.** Appropriate action by the monetary authorities in this case might result in a relaxation of restrictive policies, before it is deemed appropriate on general grounds.

36. "Recent American Monetary Controversy," op. cit., p. 10, n. 1.

37. "The Discount Rate as a Credit Control Weapon," op. cit., p. 174. A similar argument is advanced by Smith in "The Instruments of General Credit Control," op. cit., pp. 63-64.

Still another expression of concern with announcement effects is offered by Culbertson who observes that the November 1957 discount rate reduction in particular "precipitated the most extraordinary bull market in bonds, a development that would have been most untimely had recession not been in the offering. The [November 1957] discount rate reduction seems to have served waiting debt speculators in the capacity of a starter's gun, and thus, to have contributed unduly to the speculative flavor of the bond market...."³⁸

On the other hand, the System has observed that discretionary discount rate changes are a useful complement to the other major tools of credit policy because they are probably the most widely publicized step that a central bank can take--and yet they have no direct effect on the available supply of bank reserves.³⁹

IV. Proposed Changes in the Discount Mechanism

The critics of the present discounting arrangement have offered alternative proposals that range from abolishing the practice to making it the most powerful tool in the central banker's kit.

Abolition of the Discount Mechanism

Perhaps the most adamant advocate of abolishing discounting is Milton Friedman, who argues that since member banks discount at their own initiative,

38. John M. Culbertson, "Timing Changes in Monetary Policy," Journal of Finance, XIV (May, 1959), pp. 157-158.

39. The Federal Reserve and the Treasury: Answers to Questions from the Commission on Money and Credit, op. cit., p. 146.

the Federal Reserve System cannot determine the amount of money it creates either through the discount window or by a combination of discounting and open market operations.⁴⁰ Regarding discount rate policy in particular, Friedman is highly critical of those who have looked to the level of the discount rate rather than its position relative to other rates as an indication of the tone of monetary policy. Under a discretionary discount rate policy, an unchanged rate is, according to Friedman, accompanied by unintended shifts between monetary tightness and ease as market rates change relative to the discount rate. Moreover, the occasional but usually substantial changes in the discount rate are viewed as a source of general instability. Friedman sums up his feelings as follows:

"...rediscounting should be eliminated. The Federal Reserve would then no longer have to announce a discount rate or to change it; it would then have direct control over the amount of high-powered money it created; it would not be a source of instability alike by its occasional changes in the discount rate and by the unintended changes in the 'tightness' or 'ease' of policy associated with an unchanged rate, nor would it be misled by these unintended changes; and it would be less subject to being diverted from its main task by the attention devoted to the 'credit' effects of its policy."⁴¹

One vital qualification is, however, added by Friedman to his argument for total abolishment. He reasons that since required reserves are calculated after the fact, some discrepancies between required and actual reserves are unavoidable. As an alternative to the current charge of the discount rate plus two percentage points on realized reserve deficits, Friedman offers a fixed rate of "fine" that "...should be large enough

40. A Program for Monetary Stability, op. cit., p. 38.

41. Ibid., p. 44.

to make it well above likely market rates of interest. The fine would then become the equivalent of a truly 'penalty' discount rate...[but]...no collateral, or eligibility requirements, or the like would be involved."⁴²

Apparently, Friedman was not aware of how much this one qualification weakens his solution. As Ahearn has pointed out, this qualification would replace the discount mechanism with an "overdraft system" under which everything would depend on the height of the penalty rate. If market rates of interest moved up, the penalty rate might have to be adjusted upward to keep it a penalty, which means in essence, that the discount mechanism would have crept back under another name.⁴³

Professor Kareken also views the abolition of discounting as a possible alternative to the present system.⁴⁴ He reasons that in view of the growth in public debt--and especially, the expansion in the stock of Treasury bills--during and after World War II, there is no longer any need for discounting in order to make reserve adjustments. With the closing down of discount facilities, banks short of reserves would, according to Kareken, be forced to sell short-term Governments. But those banks with reserve excesses would have a strong incentive to retain their Treasury obligations, and perhaps to acquire more.

Ahearn contends that this analysis is faulty because Kareken's assumption that Governments sold by reserve deficient banks will be bought up

42. Ibid., p. 45.

43. Daniel S. Ahearn, Federal Reserve Policy Reappraised, 1951-1959 (New York: Columbia University Press, 1963), p. 140.

44. "Federal Reserve System Discount Policy: An Appraisal," op. cit., pp. 111-112.

by other banks, ignores the fact that broad swings in reserve positions affect nearly all banks in roughly the same way at about the same time. If bank reserve positions were tightening, Ahearn asserts, it would actually be rational for excess reserve banks to husband their reserves and, indeed, to sell Governments in anticipation, before reserve positions tightened further and depressed security prices lower.⁴⁵ In the light of more recent developments, there is, of course, the additional argument that bank holdings of short-term Governments might drop so low as to limit this means of reserve adjustment.

Nondiscretionary Approach

A general dissatisfaction with the discretionary features of discount policy is reflected in nearly all of the suggested modifications in this mechanism. The proposals along this line rest on the assumption that "profitability" considerations do, in fact, bear heavily on borrowing decisions. The central feature of the proposed nondiscretionary discounting arrangements is a discount rate that is "tied" to the Treasury bill rate or some other money market rate that is relevant to borrowing decisions. Such an arrangement is apparently motivated in large part by the desire to: (1) stabilize the rate differentials that influence borrowing decisions, thus hopefully stabilizing the borrowing aggregate, and (2) eliminate the threat of adverse announcement effects stemming from discretionary discount rate changes. When coupled with a penalty rate concept, this system establishes a basis for relying entirely on the price mechanism for the allocation of credit at the discount window.

45. Federal Reserve Policy Reappraised, 1951-1959, op. cit., p. 140, n. 51

The practical problem of how high to set the "penalty" rate is an important one. If the rate is set too high, borrowing from the Federal Reserve Banks might cease to be a practical alternative for banks unexpectedly in need of reserves. Many regard this lender-of-last-resort function as an important central bank responsibility, however, and the adverse effect on the attractiveness of membership in the System is also a consideration. On the other hand, if the penalty rate is set too low, the volume of borrowing might become "excessive." A perhaps even more thorny problem is created by the fact that market interest rates do not move in perfect tandem with each other. Thus if the discount rate were tied to some particular rate, movements of other market rates relative to the chosen rate could result in continued interest rate-induced instability in the aggregate volume of borrowing.

The choice of the market rate to which the discount rate would be tied and the size of the differential to be used hinges in significant part on the question of whether banks balance borrowings against rates on other sources of readily available funds or whether borrowings are related to the rate that banks can earn on loans. A penalty discount rate that is effective **under conditions in which borrowings are balanced against rates on marginal assets (i.e., Treasury bills) may not inhibit borrowing decisions that are** related to the higher return on earning assets.

Moreover, even if the discount window authorities effectively preclude borrowing to lend at a profit under the terms of Regulation A, a given penalty rate may become ineffective as banks shift from one short-term source of funds to another. If, for example, the discount rate is set at some specified margin above the Treasury bill rate, but if, in fact, a substantial number of banks turn to other sources of short-term funds such as CD's, the discount rate may lose its initial penalty properties.

Warren Smith has observed that on practical grounds, the discount rate should exceed the Treasury bill rate by a margin that is sufficient to discourage "unnecessary borrowing" without imposing too heavy a penalty on banks that are "forced" to borrow because they lack salable securities. On this basis, he determines that the discount rate should be set a full 1 per cent or more above the Treasury bill rate.⁴⁶

Smith has been careful to distinguish between his penalty rate system in which the use of the discount window is penalized in cost terms relative to other sources of short-term funds, and the British scheme, where the penalty rate is related to the return on earning assets--which happens in the case of the British discount houses to be almost exclusively Treasury bills. The British penalty rate concept is held to be impracticable in the United States "because there are several thousand member banks able to borrow directly from the Federal Reserve and invest their funds in a broad range of assets carrying widely varying interest rates."⁴⁷

In another "tied" discount rate plan, Ahearn proposes that the discount rate be anchored to the bill rate but that the Federal Reserve be

46. "The Discount Rate as a Credit Control Weapon," op. cit., p. 176. More recently, however, Smith has voiced reservations about using the Treasury bill rate as an anchor rate. At a May, 1966 Federal Reserve seminar on the discount mechanism, he noted that in the last few years, many banks have come to use CD's rather than Treasury bills in their reserve adjustments. At the same time, Smith indicated that he has become less certain of the appropriate penalty rate spread.

"There is a fuzziness about what a penalty rate is here. Does it have to be sort of higher than any rate that any bank can earn on an asset, at one extreme, or does it have just to be a little bit above the lowest rate [at which] any bank can turn out any asset, at the other extreme? It's probably somewhere in between."

47. Ibid., p. 171, n. 3.

allowed to vary the differential in accordance with monetary policy aims. "This would retain needed flexibility in the relation of the discount rate to other money market rates but also minimize the possibility of market misinterpretation of the meaning of discount rate changes."⁴⁸ Brunner and Meltzer also call for an arrangement in which the discount rate would always exceed the bill rate, but not necessarily by a fixed margin. They envision a "market determined [discount] rate" and suggest that the discount window should be kept "open" at the penalty rate.⁴⁹ Precisely how the penalty rate would be determined is not, however, spelled out.

Aschheim presents a plan in which the discount rate is tied to the rate on Federal funds instead of the Treasury bill rate because Federal funds are held to be the closest substitute for reserve accommodation from the Federal Reserve. As did Brunner and Meltzer, Aschheim also envisions (but fails to spell out) a penalty-rate scheme in which "the 'principles of prudent discounting' that are currently applicable to the System's rediscount facility could be dispensed with."⁵⁰ Aschheim concludes:

"Where...open market operations are feasible, nonpenal rediscounting is--in effect--an escape mechanism for commercial banks seeking to overcome the constraint of restrictive open-market policy. Last-resort reserve accommodation via a penalty rate eliminates this escape mechanism while retaining the safety valve of central-bank lending to member banks at the latter's initiative. Thus, in monetary systems possessing the institutional setting for open-market operations, penalty-rate rediscounting enhances the effectiveness of central bank control."⁵¹

48. Federal Reserve Policy Reappraised, 1951-1959, op. cit., p. 144.

49. An Alternative Approach to the Monetary Mechanism, op. cit., pp. 89-90.

50. Techniques of Monetary Control, op. cit., p. 94.

51. Ibid., p. 98.

Some technical difficulties appear to exist, however, in attempting to tie the discount rate to the funds rate where there is unlimited resort to the "window." The pre-determined and fixed penalty spread would have to be added to some past value of the funds rate to determine the current discount rate, say the average effective funds rate for the preceding week. The balance of supply and demand in the funds market is very shiftable, however, and the rate tends to be quite unstable. As long as the current funds rate remained below the current week's discount rate, borrowings would probably be very low. If the current funds rate should rise to the discount rate, however, banks would be indifferent between the funds market and the "window" as a source of reserves, the funds rate would rise no further, and borrowings could rise indefinitely until the demand for reserves was satisfied at the existing discount rate. Thus, it would appear that considerable instability in the volume of borrowings would be re-introduced.

In summary, those advocating a nondiscretionary discount mechanism would attempt to minimize the variability in borrowings by fixing the differential between rates pertinent to the borrowing decision and to hold down the average level of borrowings by setting the discount rate at a penalty level.⁵²

52. Some interesting variants of the "tied" rate scheme were offered at the recent Federal Reserve seminar referred to in footnote 46 above. It was proposed, for example, that the discount rate should be linked to the Federal funds rate but that the spread should increase with both the size and duration of an individual bank's borrowing from the Federal Reserve. Another plan called for a given bank to pay a borrowing rate which is fixed in relation to its return per dollar of loans and investments, on the grounds that since the most efficient bankers constitute the hard core of borrowers, a single penalty discount rate for the system as a whole might have perverse affects by penalizing least those that tend to borrow the most. For an excellent summary of the dialogue and proposals at the May, 1966 seminar on discounting, see: Priscilla Ormsby, "Summary of Issues Raised at the Academic Seminar on Discounting," May 11, 1966.

Discretionary Approach

As an alternative to his proposal for abolishing discounting, Karaken suggests that the discretionary features of discounting be strengthened.⁵³ In his view, there is no basis for thinking that non-price rationing is in principle any less effective than price rationing in curbing unwanted expansions of Federal Reserve credit. Indeed, the discretionary approach entails the power not only to control total indebtedness, but also to selectively control bank lending practices.

The selective control of bank lending is considered to be a means of influencing two factors of "special significance" in the contemporary inflationary process--namely, inventory speculation and money wage pressures. To the extent that funds needed to finance an inventory buildup or an increase in corporate transactions balances (in order to make larger wage payments) must be limited by member banks that make use of the discount window, the inventory and wage sources of inflationary pressure would be blunted.

Karaken notes that his plan would require the establishment of appropriate non-price eligibility conditions such as a maximum figure for the ratio of loans to total loans and investments. In addition, and in marked contrast to most of the proposed modifications in discounting, it would be necessary to keep the discount rate below the penalty level. "If banks are to avail themselves of the System's discount facilities and thereby to submit to the regulation of their activities it must in some sense be profitable for them to do so."⁵⁴ Aschheim indicates general disapproval of this scheme by asking the obvious:

53. "Federal Reserve System Discount Policy: An Appraisal," op. cit., pp. 119-120.

54. Ibid., p. 121.

"If the purpose is selective lending control, why confine it to those banks that choose to subject themselves to it? If many banks choose to shun the discount window to avoid central-bank regulation of their lending practices, how far down shall the discount rate go or how watered down shall the selective lending control be in the effort to lure more banks to the discount window?"⁵⁵

Tobin's Proposals

Professor Tobin advocates a radical departure from the current discounting arrangement which would make the discount rate "the most powerful tool in the central bankers' kit."⁵⁶ He makes two basic proposals:

- (1) The Federal Reserve Banks should pay interest at the discount rate on member bank reserve balances in excess of requirements;
- (2) Banks should be released from the prohibition of interest payments on demand deposits and from the ceilings on interest rates on time and savings deposits.⁵⁷

According to Tobin, the purpose of the first proposal is to tighten the control of the Federal Reserve over the opportunity cost of bank lending. By raising the discount rate, the Federal Reserve would "clearly, directly, and quickly" make lending less attractive to all banks, regardless of whether they are in debt to the Federal Reserve or not. The discount rate would become a floor to the rate on Treasury bills and similar short-term paper that banks might hold as secondary reserves.

55. Techniques of Monetary Control, op. cit., pp. 96-97.

56. James Tobin, "Towards Improving the Efficiency of the Monetary Mechanism," Review of Economics and Statistics, XLII (August, 1960), p. 279.

57. Ibid., pp. 277-278.

The purpose of the second proposal is to tighten the Federal Reserve's control over the opportunity cost that bank depositors charge against any alternative investment of funds. "The rate that banks pay depositors will be closely geared to the discount rate since a bank will always be able to earn a fraction of the discount rate (one minus the required reserve ratio) on a new deposit."⁵⁸ Among the advantages claimed by Tobin for the second proposal, are the elimination of the "unproductive efforts" devoted to economizing cash in periods of high interest rates, and the replacement of the existing "wasteful and imperfect" non-price competition with price competition. "Better to pay depositors interest than to seek their patronage by organ music, free silverware, and plush surroundings."⁵⁹

Another important feature of Tobin's plan is that the Federal Reserve would make a perfect Federal funds market at the discount rate. Among the implications foreseen by Tobin for his proposals are that much of the short-term Government debt would be transferred to the Federal Reserve from banks and corporations, leaving them to hold excess reserves and bank deposits, respectively. Also, Tobin suspects that monetary control under his system may require much wider fluctuations in discount rates and connected short-term interest rates "than we have yet had the courage to try."⁶⁰

By way of criticism of the Tobin scheme, Ahearn points out that the potential for inflationary enlargement of the reserve base would be enormous;

58. Ibid., p. 278

59. Ibid.

60. Ibid., p. 279.

yet the only administrative defense against member bank borrowing would be the power to raise the discount rate.⁶¹ The problem would be compounded by the difficulties in carrying out offsetting open-market operations under conditions of dried up public short-term Government security holdings.⁶²

61. Federal Reserve Policy Reappraised, 1951-1959, op. cit., p. 133.

62. This point is made by Jonathan Levin in "Professor Tobin on the Monetary Mechanism," internal Federal Reserve Bank of New York memorandum, September 8, 1960, p. 5.

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