

# ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

## Setting the Discount Rate

by E.J. Stevens

An uncommonly wide spread existed in the first half of this year between the federal funds rate, the rate that banks pay to borrow from one another, and the discount rate, the rate that banks pay to borrow from a Federal Reserve Bank.

The federal funds rate rose more than 300 basis points (three percentage points) over the 12 months ending in March 1989. The discount rate, on the other hand, was raised by a total of only 100 basis points over that same period: 50 basis points in August 1988 and another 50 basis points in February of this year. As a result, the spread between the federal funds rate and the discount rate sometimes exceeded 275 basis points, although it has declined recently.

A rate spread wider than even 200 basis points is unusual (see table 1). In the past, such extreme values typically emerged only in periods when the discount rate had reached a kind of plateau (see figure 1). Prior to 1983, these discount-rate plateaus all occurred near business-cycle peaks. Since 1983, plateaus and their associated wide rate spreads emerged during the periods of restrictive monetary policy that have interrupted the long-run disinflationary downward trend of nominal interest rates in the U.S. economy.

This year's wide rate spread thus was only the latest in a series of such

episodes. These have alternated with contrasting periods of relatively close comovement of the funds rate and the discount rate. It is tempting to look for a uniform explanation of this historical pattern: perhaps policymakers typically underestimate peak interest rates and then get "locked in" to a discount-rate level for fear that even a small increase will be misinterpreted as a major tightening of policy; perhaps a higher rate would disadvantage small banks; perhaps restrictive policy requires a wide spread.

The trouble with such explanations is that none of them seems sufficiently universal to account for all of the episodes of unusually wide spreads in the past 25 years. However, such speculation does raise a more fundamental question: for monetary policy purposes, does it make any difference what the level of the discount rate is?

When the Federal Reserve Banks opened for business 75 years ago, raising and lowering the discount rate was conceived of as the principal monetary policy tool for tightening and loosening the supply of reserves. But, in the 1920s, open market operations took over this policy function, now managed by the Federal Open Market Committee (FOMC).<sup>1</sup>

Open market purchases and sales of U.S. government securities add and drain reserves directly, effectively

An independently determined discount rate seems irrelevant as long as open market operations implement monetary policy. This suggests moving the discount rate frequently in alignment with market rates. Instead, however, the Federal Reserve could use the discount rate as an independent tool to enrich the policy process. In so doing, the central bank could improve the reliability of short-term policy information available to the public and prevent market activity based on faulty assumptions about policy intentions.

determining the level of the federal funds rate. The level of the discount rate relative to the funds rate simply influences the proportion of total reserves that are created through discount-window borrowing. Open market operations could always compensate for fluctuations in borrowing, thereby maintaining effective long-run control of total bank reserves and the monetary base.

Monetary policy can be thought of as a decision to provide a particular amount of reserves to the banking system; policy actions are reflected in the federal funds rate and other money market interest rates as demand interacts with supply. An independently determined discount rate seems irrelevant: in the long run, if the monetary base and market interest rates get where they have to go, policy has been implemented.

Hence the question: is there a rationale for using the discount rate as an independent monetary policy tool, rather than simply moving the discount rate to keep it aligned with the key FOMC-determined federal funds rate at which banks borrow from one another? This *Economic Commentary* explains one rationale: accepting all other current monetary policy arrangements as given, changes in the discount rate could be used to convey useful information about monetary policy to the public.

#### ■ Current Mechanics and Subsidiary Issues

The mechanics of setting the discount rate are not complicated. The Board of Directors of each of the 12 Federal Reserve Banks is required to recommend a rate setting for its Bank to the Board of Governors of the Federal Reserve System no less frequently than every two weeks.<sup>2</sup> If the Board of Governors approves the recommendation, typically it will notify any of the other 12 Banks that have not made the same recommendation so that their Boards of Directors have an opportunity

to act simultaneously. If the Board of Governors thinks that a change is called for when none of the 12 Banks has recommended a change, it may make informal efforts to elicit a recommendation.

The discount rate has been lower than the federal funds rate during most of the past 25 years without ever generating much borrowing.<sup>3</sup> Reluctance of banks to borrow from the discount window, despite a favorable rate spread, has two primary explanations. One is that Reserve Banks limit the circumstances under which a bank may use the borrowing privilege, reinforced by careful scrutiny of the frequency and amount that any bank actually borrows. The other is that banks fear damage to their market reputations if it were to become known that they were placing substantial reliance on this nonmarket source of funds.

A frequent suggestion over the years has been that, as a matter of policy, the discount rate should always lie *above* the federal funds rate and other money market rates, so that borrowing would entail a penalty. A related idea is to eliminate most administrative oversight, counting on the penalty aspect to keep borrowing to a minimum level consistent with those infrequent occasions when a bank is unable to access market sources of funds.<sup>4</sup>

Another suggestion that would eliminate administrative overhead is to set the discount rate itself automatically, whether above or below market rates, by some formula linking it to market rates. Counterarguments emphasize the potential organizational costs of such a change. In particular, the directors of Reserve Banks, who receive only nominal remuneration for their service to the nation, are thought to be attracted to their positions chiefly by their role in maintaining prudent national monetary policy.<sup>5</sup> A related thought is that involving the Reserve Banks in the rate-setting process also lends weight to the positions of their presidents within the FOMC.

All of these arguments raise important issues, but none gets to our fundamental question. Regardless of who sets the discount rate and whether it should be above or below market rates, and assuming that it is not to be fixed at a permanent level for all time, is there a rationale for using the rate as a policy tool independent of open market operations? If there is not, then the best basis for setting the rate would seem to be to keep it aligned with market rates that reflect monetary policy. But if there is such a rationale, then on what basis should rate-setting decisions be made?

#### ■ The Discount Rate as a Source of Policy Information

Changes in the discount rate can improve the reliability of policy information available to markets. This “announcement effect” will improve the Federal Reserve’s chances of getting the funds rate where it has to go, of getting the monetary base where it has to be, and of getting the whole spectrum of interest rates, monetary aggregates, credit flows, income, and output where they have to go in order to implement policy and achieve its implicit or explicit inflation-rate objective.

The reason the discount rate can enrich the policy process is that markets operate in an uncertain environment. Policy actions depend on what policymakers foresee, and market actions depend on what market participants foresee and think that the Fed foresees. The better informed markets are about Fed intentions, the more effortlessly markets will reach equilibrium.

Sources of information about policy intentions are readily enumerated. Twice a year, the FOMC’s Humphrey-Hawkins report to Congress includes information about the economic outlooks of FOMC members, FOMC targets for growth of monetary aggregates, and discussion of broader

**TABLE 1 FEDERAL FUNDS RATE MINUS DISCOUNT RATE—  
FREQUENCY DISTRIBUTION OF THE RATE SPREAD<sup>a</sup>**

Size of Spread (basis points)	Frequency (no. of mos.)	Percent of cases	Cumulative percent
>300	13	4%	4%
>250, <300	22	8%	11%
>200, <250	11	4%	15%
>150, <200	21	7%	22%
>100, <150	27	9%	31%
>50, <100	66	22%	54%
>0, <50	70	24%	78%
<0	<u>64</u>	<u>22%</u>	100%
	294	100%	

a. Monthly average rates, January 1965 to June 1989.

SOURCE: Board of Governors of the Federal Reserve System.

monetary policy objectives. While fresh when delivered, this information is 26 weeks old before it is updated by another Humphrey-Hawkins report.

The policy record of each FOMC meeting is released after the next succeeding meeting. It provides only historical information about policy intentions because it is about six weeks old when delivered, and 12 weeks old when updated. Further qualitative information might be sought in the occasional speeches and other statements of FOMC members, but these necessarily represent individual views, not statements of FOMC policy.

Weekly and monthly data for the targeted monetary aggregates become available with only a two-week delay. For considerable periods in the past, these data provided important information about prospective open market

policy actions. This was because deviations of incoming data (and of market projections of future data) from target paths implied by the policy record would suggest the impending need for tighter or easier policy.

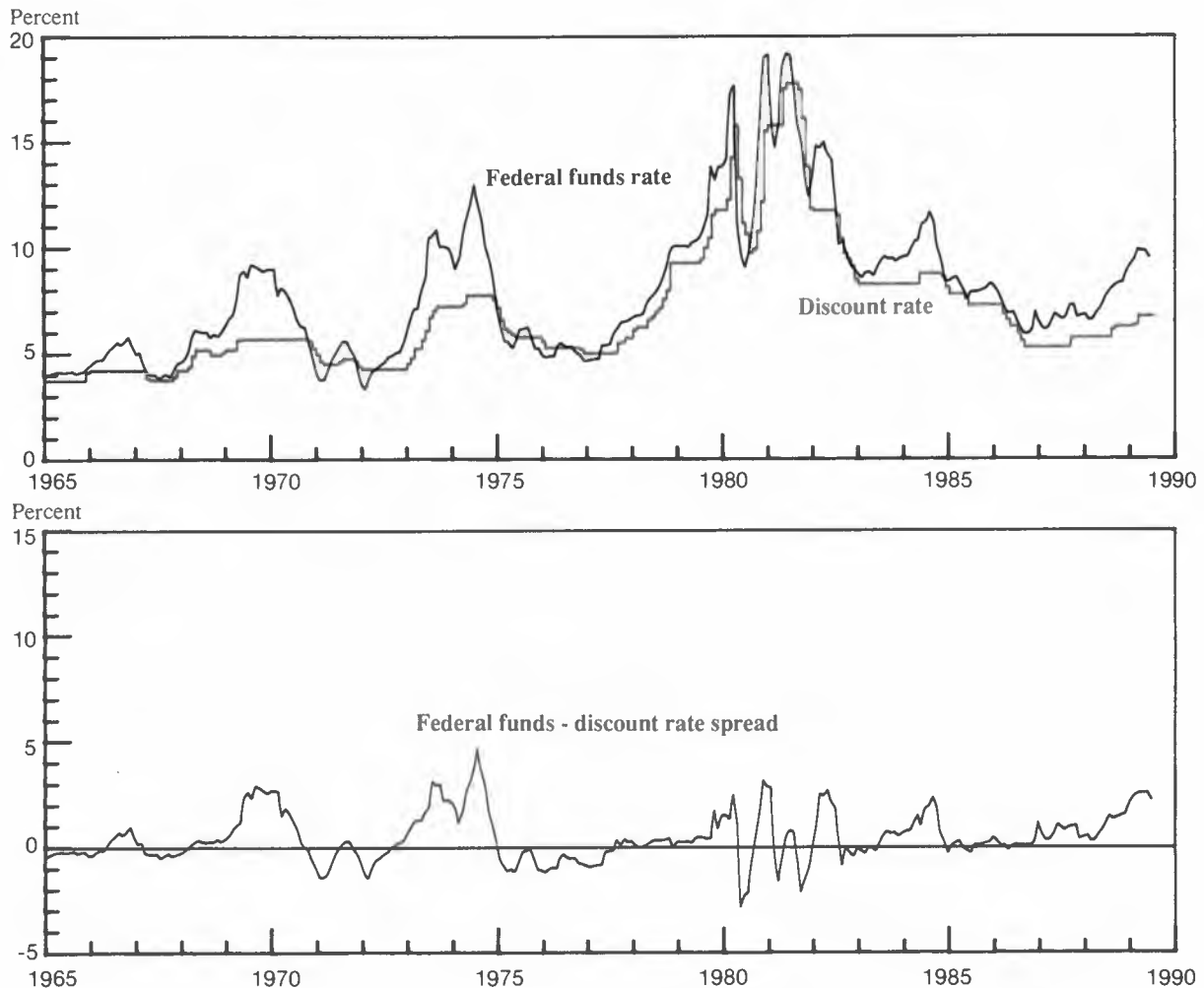
This is no longer the case. Deposit-rate deregulation and reversal of the postwar upward trend of interest rates in the 1980s introduced substantial uncertainty into relationships between the monetary aggregates and national output and prices. Deviations of monetary aggregates from target paths within the annual ranges no longer play a central role in determining FOMC actions, at least on a dependable short-run basis. The annual target ranges themselves are quite broad, so that an equally broad spectrum of monetary aggregate levels may be consistent with the targets.

The level of the federal funds rate and the nature of open market operations can be observed on a daily basis. Careful scrutiny of these items, either directly or through the judgment of professional Fedwatchers, provides a contemporaneous signal of current policy. This signal is not clear, however, because interpretation of the items is always uncertain and never unanimous. Moreover, the signal reflects only today's policy setting; it says little about future policy actions.

In this situation, an occasional increase or decrease in the discount rate could certify that policymakers viewed recent levels or changes in the federal funds rate not as incidental or temporary, but as the necessary consequence of ongoing monetary policy. One reason for changing the rate would be a perception in the Federal Reserve that markets were misinterpreting policy intentions. The other would be a recognition in the Federal Reserve that its own outlook had changed, from less to more certainty about the joint implications of its objective and its economic outlook for the direction or extent of future changes in the funds rate. Within these guidelines, the discount rate might be changed with varying frequency, and result in variable spreads from the funds rate.

The information content of a discount-rate change need not be restricted to the direction and size of the change: discount-rate changes typically are announced in a press release that includes a brief explanation of the action. For example, "In the light of inflationary pressures in the economy, the Federal Reserve Board announced...an increase in the discount rate...(2/24/89)." Such brief statements can provide the public with some sense of direction about policy, whereas open market operations are conducted without any accompanying explanation for adding or draining reserves.

**FIGURE 1 THE FEDERAL FUNDS RATE AND THE DISCOUNT RATE**



**NOTE:** The level of the discount rate between March 17, 1980, and November 17, 1981, includes a surcharge in addition to the basic rate. This surcharge varied between 0 and 4 percent, levied on borrowing by banks with deposits in excess of \$500 million. It was intended to discourage frequent use of the discount window and to encourage large banks to adjust their loans and investments quickly in response to market conditions.

**SOURCE:** Board of Governors of the Federal Reserve System.

In any case, the discount-rate-setting mechanism provides a means of conveying useful policy information. The directors of a District Bank could recommend a change in the rate to inform the Board of Governors of the direction they believe monetary policy should take to achieve FOMC objectives. An actual change in the discount rate, approved by the Board of Governors, could be used to assure fuller incorporation of an easier

or tighter future monetary policy than might otherwise be reflected in current financial-market prices. Resetting the rate may thereby impose immediate losses, but prevent future days or weeks of market activity based on incorrect or less-certain policy assumptions.

■ **Past Changes in the Rate**

With hindsight, many past changes in the discount rate have the appearance

of routine attempts to keep it aligned with the federal funds rate (see figure 1). Nonetheless, alignment has been far from perfect. Contrary to popular belief, the discount rate is not necessarily the bellwether of the federal funds rate and of closely associated market rates. In fact, it was adjusted in only a quarter of the months plotted in the figure. Markets may have received useful policy information from the Federal

Reserve in those months in which the discount rate was changed, but not in the others.<sup>6</sup>

The usefulness of information conveyed by a change in the discount rate need not be uniform over time. In particular, the operating procedure employed by the FOMC to guide open market operations might influence the effect of discount-rate changes. When the funds rate is the direct target of daily open market operations, there should be little market uncertainty about the "equilibrium" funds rate. This is because the Federal Reserve can enter the market to add or drain reserves on a daily basis whenever the funds rate varies from the FOMC's desired equilibrium.

Uncertainty should be greater when open market operations seek to provide only a predetermined amount of non-borrowed reserves. In this case, the market must discover an equilibrium funds rate consistent with the FOMC open market policy setting because the FOMC explicitly will tolerate some variance in the funds rate. Changes in the discount rate may provide information that helps the market find the right funds rate in this latter case, while no such information is needed in the former case, when the funds rate is the direct policy target.

In either case, changes in the discount rate may provide information about the short-run future, affecting rates on securities with maturities longer than overnight federal funds. Failure to detect information effects uniformly in past discount-rate changes would not disprove the information rationale for managing the discount rate. An adverse finding says only that the rate was not managed this way during some time periods in the past or, if it was, that the result was too small to be detected.

#### ■ Conclusion

Delayed release of the FOMC policy record is an important basis for the potential usefulness of the discount rate as an independent tool of monetary policy. Reasons for, contingencies attached to, and any dissents from the FOMC policy record guiding open market operations until the next meeting could provide much of the flavor of policy outlook that now might be attributed to changes in the discount rate. But delayed release makes the policy record useful largely as an historical document.

Immediate release of the policy record could make changes in the discount rate less informative, except to the extent that fundamental changes in policy thinking between meetings might warrant an immediate signal to markets. Frequent changes to maintain alignment with the funds rate would seem to be the appropriate way to manage the discount rate if immediate release of the policy record provided more information about the basis for policy actions than currently is the case.

Inertia in the discount rate is the source of its power, but this poses a danger. By allowing a wide or narrow spread between market rates and an unchanged discount rate to build up over a longer and longer interval, a change in the rate, when it comes, might suggest a major innovation in policy thinking. Apprehension of market overreaction could then make a rate-change decision increasingly difficult for the Board of Governors, even though the language of a rate-change announcement can be used to shape its interpretation. On the other hand, changing the rate frequently and in minor amounts to avoid this danger would trivialize the tool into a routine device for rate alignment.

Setting the discount rate inescapably involves this choice between inertia and alignment. Directors' recommendations to change the discount rate could be a tool for conveying useful information from the public to policymakers. Actual discretionary changes in the discount rate could be a tool for conveying useful information to the public about the near-term intentions of monetary policy.


Under this scenario for managing the rate, an unusually wide spread of the funds rate above a relatively stable discount rate would have an explanation. It would suggest a persistent tendency for policymakers to be, or to want to be seen to be, both more surprised than the market at the need for tighter policy, as well as dubious that so restrictive a policy would continue to be needed.

## ■ Footnotes

1. The Banking Act of 1935 created the current form of the FOMC to control open market operations. The Committee consists of the seven members of the Board of Governors of the Federal Reserve System, the president of the Federal Reserve Bank of New York, and, on an annual rotating basis, four of the presidents of the other 11 Federal Reserve Banks. (The Cleveland Bank president serves every other year, alternating with the president of the Chicago Bank.) The FOMC now meets eight times each year, with additional meetings as necessary (typically by telephone conference).
2. This rate recommendation is for the level of the basic discount rate borrowers pay for adjustment credit and seasonal credit.
3. Adjustment borrowing has averaged 1.9% of total reserves over the past 25 years, with a standard deviation of 1.6%.
4. An extension of this idea is that the discount window for adjustment credit could be closed completely. Banks in exigent circumstances that prevent access to market sources of liquidity would run overnight overdrafts, making up the reserve deficiency on succeeding days. Presumably they would also have to pay the penalty for such overdrafts, currently the larger of \$50, or the larger of 10% or a rate 2 percentage points above the federal funds rate, *in addition to* making up the deficiency.

5. Directors' rate recommendations sometimes are thought to reflect regional rather than national conditions, but this seems unlikely as a general rule. Directors know that there is no basis for maintaining regional differences in interest rates in the modern world of integrated global money and capital markets. Also, the expertise of many directors is not about the regional economy, but about national and global conditions in the industries in which they are employed.

6. Substantial effort has gone into the search for evidence that past discount-rate changes conveyed new information and therefore had an impact on securities prices, with at least partial success. Citations and a useful summary of the evolution of these efforts can be found in Timothy Cook and Thomas Hahn, "The Information Content of Discount Rate Announcements and Their Effect on Market Interest Rates," *Journal of Money, Credit, and Banking*, vol. 20, no. 2 (May 1988), pp. 167-180.

  
*E. J. Stevens is an assistant vice president and economist at the Federal Reserve Bank of Cleveland. The author thanks John Carlson, William Gavin, Owen Humpage, and Mark Sniderman for useful discussion. Susan Black provided able research assistance.*

*The views stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.*

**Federal Reserve Bank of Cleveland  
Research Department  
P.O. Box 6387  
Cleveland, OH 44101**

**Address Correction Requested:**  
Please send corrected mailing label to  
the above address.

Material may be reprinted provided that  
the source is credited. Please send copies  
of reprinted materials to the editor.

**BULK RATE  
U.S. Postage Paid  
Cleveland, OH  
Permit No. 385**